

# ECHO))))))

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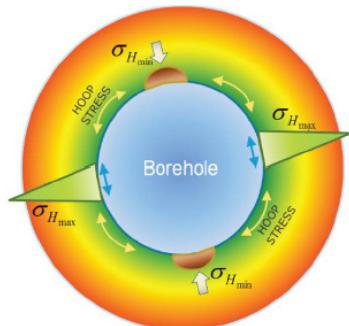
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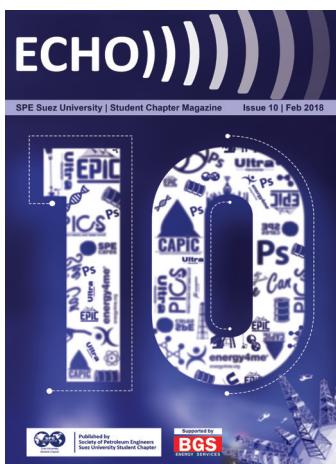
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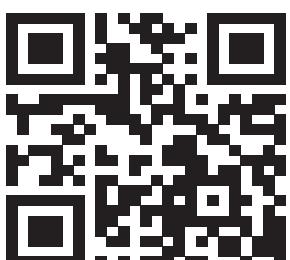


## ISSUE 10 COVER



10 years of success, integration, commitment, adding a value, linking the world, and uniqueness. We have the privilege to celebrate ECHO 10 to be the most professional student magazine all over the world.

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## FOREWORD



**Mohamed Y. El-Faramawy**  
Chapter President

### Not as It Seems.

Four years ago, when I graduated high school and joined faculty, I thought I have achieved all what I have aspired for, but it was not as it seems. Having to join petroleum department, new goals were set. Next, I joined the most respectable student chapter in the university, SPE Suez. Again, just joining a student chapter was not as it seems; now, I am writing this word as SPE Suez president after I have achieved many goals, set as a college student.

I can now clearly admit that the most proper way to pave your path into the future while inspiring others to follow you as their leader is to never stop aspiring; your ambition must be limitless. Life is a continuous challenge that always awaits for your best move, gives an opportunity, says "Here you are". Now it is your turn to act differently, to inspire others, to change the world.

"A man's reach should exceed his grasp, or what is a heaven for?" said Robert Browning. When you stop aspiring, you sentence yourself to death. History tells many stories. Once, Nokia, that used to be the most respectable cell phones provider, was controlling the whole market, until someone decided to break the limits. He just aspired for more; he aspired to provide a different smart phone experience. One that the whole world have never seen before. Steve Jobs, who inspired me the most, was the type that could simply change the world mindset about how a smart phone should be like, while Nokia is now fighting to get back to the market not even to be a pioneer again.

So, it was never as it seems; the majority of people then said that such new ideas are like pop-ups, and will fade soon. Now, on a wider scale, Apple has become an idol that deserves following in various fields, especially, their way of thinking that is clear in their slogan: "Think Different".

Status quo is the fatal mindset disease that can slowly kill any creativity or tendency to make a difference. It may seem easier and safer, but this is the bare definition for illusion, as Voltaire said, "One day everything will be well, that is our hope. Everything is fine today, that is our illusion."

Most people prefer to follow in others' footsteps; they ask themselves: "Am I going to change the world?", and prefer to convince themselves that it is impossible. It is much easier to claim that your goals are far away from your hands, and that there is no need for aspiration; you claim you always need rest, so let's do it tomorrow, but this was never the way of thinking of those who seek success. Look around you, look at the change makers, in every place and time, they had some common values in their lives that always pushed them forward to pursue their dreams, achieve their goals, aspire for more, and so on.

Our industry, the petroleum industry in general, may be discouraging; all surrounding circumstances are pushing you to surrender to your illusion, your status quo, while being supported by the negative people who harness all of their power, dampening you from reaching your goals and catching your dreams. Do not listen. Work hard. Try many times, until you know how to make your way to what you always aspired for.

From a practical perspective, the world mindset is changing. Even recruiters are now looking for those who think differently. You have to volunteer in various activities, play sports, learn a skill that is totally away from your field of study, or even think of a crazy idea for a small project, that one day, may change the world.

One of the real examples of breaking status quo is ECHO 10. The whole team had a vision; they aspired to make the tenth anniversary totally different; everything has changed, to cope with the new vision: structure, design and layout.

On a greater scale, leading a team as SPE Suez was the sort of unique experience, that great team which has always inspired others to fulfill their own dreams.

I may have come to the end of my word, but my story continues; I will always believe as Walt Disney believed: The flower that blooms in adversity is the rarest and most beautiful of all." I decided to be that flower, as best is always yet to come.



**Osama Radwan**  
ECHO CEO

# Thrive not Just Survive.

### Give to Live

Life is to share; to share knowledge, moments, feelings, and thoughts. Physically, you have only one life. However, you can taste several lives with a simple recipe. Always, try to give and love to live. The business life can steal your soul, heart, and relationships. You should ask yourself periodically, "What am I pursuing?" Are you living in the pursuit of happiness, money, friendships, or what? Do you follow a strategy, or are you just doing what you have to do?

After answering your soul, you are qualified to join the first step, which is the giving. Volunteerism is a world of opportunities, a volunteer is the one who is ready to donate a portion of his time, efforts, and knowledge to benefit others and add a value to the society. You will be in a win-win situation; meeting new people, experiencing different situations, and fulfilling integrated projects.

In SPE, I acquired the sense of volunteerism, and I proudly belong to SPE league of volunteers. My journey was full of enthusiasm, memories, and challenges. One of the learned lessons was the art of giving. Life has its ups and downs. In both cases, your subconscious mind is ticking. You are the sole controller of your thoughts. Choosing to be a volunteer is a decision to survive, but adding a value with a targeted growth in different levels is a way to thrive.

### Entrance or Hindrance

Sometimes, we face stereotypes regarding our own life. It is not about the people who spread the misconceptions. It is about the person who receives all these disturbing signals and noise. Your strength is measured by your ability to encapsulate all these hurdles. Your character is shaped by your flexibility and readiness to be in charge. As the successful project was once a model, the personality should experience a volunteering record to stand on a solid basis to define your potential and know your calling.

Volunteering philosophy is being bombarded by accusations, stereotypes, and misconceptions. Maybe, you heard that volunteering work is a waste of time, blind giving, or even grade inhibitor. The key factor concerning volunteerism is the psychological stability. When you insert valuable endeavors to your daily life, your mindset will be automatically directed to positive attitudes. Your midnight thoughts will be projects, targets, novel approaches, partnerships, and self-feedback.

The dynamic world is built upon the efforts law which states that "The exerted efforts will not necessarily reflect potential results as long as you only work hard". The high quality products are governed by a series of factors, such as strategic planning, market research, back up scenarios, quality control, and integration. The fish lays hundreds of eggs, only few of them survive. You knock many doors, only few of them open; this is the practical life. Using different strategies, best practices, and new approaches minimize the work done per unit of time. That will be a way to optimize your life. Volunteering is absolutely an entrance to the world of optimization. Volunteering can be a hindrance, if you let yourself run after shadows, not following realistic plans or strategies.

### Prediction or Correction

In petroleum engineering, we can sometimes use the case history data with the simulated data to generate a representative model, in order to extrapolate the data and forecast the future results. The question here is, "Is this enough to build a decision or plan?". It is simply about the input parameters and the model's match with the reality. This kind of processes is only to get insights and shorten the way by decreasing the amount of certainty.

Do your future achievements come out through prediction or correction? Uncontrolled predictions can convert you to a dreamer with limited resources. Correction means the continuous development and practice to achieve the prerequisites for your target. It is highly important to apply some predictions with reliable models to get insights, but you should integrate your work to fast track the progress. The varying parameters controlling life complicate the used approach to go ahead. Life is tough, but it is for work and continuous improvement.

Along your way, you will face fluctuations in your time. You can be free for a while and busy for another. The higher the fluctuation is, the higher the procrastination level you will have. Always, design your model to be a steady state to avoid this kind of things. Being proactive not reactive is just a statement, but it can come true with your way of handling projects.

Briefly, keep moving forward. In this distinguished issue of ECHO magazine, you will read high valuable content with comprehensive coverage for the industry updates by leading pioneers and industry professionals. That is through interviews and scientific articles. I would like also to show my admiration to ECHO designing team. On the other hand, I am speechless to describe the exerted efforts by the editorial team. Enjoy your ECHO.

# Interview Dr. Sami Alnuaim

## 2019 SPE International President

By Mahmoud Morsy



Dr. Sami Alnuaim has been with Saudi Aramco for 30 years, where he has worked in reservoir engineering, production engineering, research and development, and at the upstream computer center. He currently serves as the manager of Petroleum Engineering Application Services, where he has full responsibility for providing technical information technology support to all upstream operations. Al-Nuaim has a long history of service to SPE, and is currently a member of the SPE Middle East Board of Directors. He has won several local, regional, and international awards, including the SPE Regional Service Award for the Middle East in 2010 and the SPE Distinguished Service Award and SPE Distinguished Member in 2011.

**1- Firstly, Could you tell us more about your experience as SPE member and your professional career?**

I have more than 30 years of experience in the industry with a broad technical and managerial oil & gas industrial background, complemented with a solid long academic exposure and achievements. I work for Saudi Aramco upstream organization, leading strategic projects and managing operations in Production, Reservoir Management, R&D, and Information Technology. My volunteering commitment towards academia is apparent through my support to the PE departments at King Fahd University of Petroleum and Minerals (KFUPM) and King Saud University (KSU). I serve on the advisory boards of both, and teach graduate courses for more than 10 years, a role which includes supervising students and securing funds to minority graduate students to attend regional SPE conferences to present their work. I am currently chairing KFUPM's PE Advisory Board. I also served 5 years in the Advisory Board of PetrolSkills, helping to geo-steer the company to better address global oil & gas training.

**2- How did you draw up your success story to be 2019 SPE president?**

SPE has been the focal point, not only for my professional growth, but also for my leadership skills development. I still remember the year I joined the society during my BS degree years at King Fahd University of Petroleum & Minerals, in the early 80s, 33 years ago. I have found memories of the happiness I felt when I received my membership card and my first copy of JPT. Since then, SPE was my main venue to expand my PE knowledge and international network. I still remember my first technical paper presented in the Middle East Oil Show (MEOS) in 1991 in Bahrain. Since then, my involvement with SPE has expanded into chairing and co-chairing several SPE workshops, forums, committees and conferences. Not only that, but also presenting and participating as keynote speaker, and chairing the Saudi section back in 2007&2008. Through this long SPE journey, my professional and career advancement became much clearer and stronger. In addition to serving the society at all levels for more than 30 years, SPE gave me the international image, recognition

and network, through honoring me with several awards at the Middle East and international levels. Not forgetting also my participation as a board member in the Middle East region, this exposed me to SPE international governance and excellence. I also served in DeGolyer, Rand and McConnell SPE International Awards' Committees, as well as the 2017 ATCE Executive Advisory Committee. My last SPE achievement is the honor to be selected as the 2019 SPE International President and serving in the SPE International board.

**3- We are eager to know the majors and degrees that you achieved, and your plans when you were a student.**

I had a BS and MS degrees in Petroleum Engineering from King Fahd University of Petroleum & Mineral, Dhahran Saudi Arabia 1986 & 1989 respectively. I also had my PhD from the University of Texas at Austin in Petroleum Engineering back in 1994. When I was student, I had a vision for myself to be a major contributor to the Saudi oil industry and global oil industry at large. Because of this vision, I decided to join

SPE back then during my BS degree and use SPE as a venue to achieve my vision.

#### **4- What do you expect for the future of the industry?**

I believe the future is very promising where the oil and gas will continue its leadership role in the global energy map. I believe the industry will evolve to cope with all challenges including environmental and renewables. Although I welcome renewables and energy efficiency especially in power generation, I believe hydrocarbon will continue dominating the global energy map especially in transportation sectors despite the news we hear about electric cars. I believe also that the world through its upstream-downstream-integration and value-chain will continue innovating and developing more oil & gas-based-advanced materials in what is called today Crude-To-Chemicals to make new uses of oil & gas and meet the increasing demand for human life style improvements. These factors and many others influence my optimistic view.

#### **5- As you can see, the Middle East, and especially Saudi Arabia, is a world leader in the industry. How can that support SPE activities in 2019?**

Middle East has more than 50% of the global conventional oil reserves and 17% of the SPE International membership, and this number is growing up as we speak. The role of SPE will gain more momentum as compared to its current leading role in this strategic region. National Oil Companies, Services Oil Companies, Research Institutes and Universities in this region have been excellent supporters to SPE activities, helping the organization achieving its mission in a very effective way. My presence as SPE president, coming from this region, will further strengthen this great relationship at all levels. I will work together with all SPE members in the ME to expand SPE footprint to cover other countries and maximize the benefits of its technical treasures.

#### **6- The industry is diverse in different ways. How do you see the diversity in the oil and gas industry, especially that, SPE has established a new committee called Women in Energy?**

Oil industry and SPE have been practicing diversity strategies since inception back in 1957 including empowering women to take leadership role in this industry. The results of this strategy can be seen today where we can see women taking technical and leadership positions in national,

international and service oil companies. The trend to empower women in our industry is getting bigger momentum. This can be seen in the number of female students' enrolment in Petroleum Engineering Programs which will be feeding the industry with skilled female Petroleum Engineers that will have the potential and opportunity to lead the industry in the decades to come.

#### **7- As a student chapter, we have achieved many awards like Outstanding and Gold Standard Student Chapter Awards. What do you advise us to do to keep moving forward?**

First, I would like to congratulate your section in Suez University in the beloved country of Egypt for such great awards and achievements. I am sure these awards did not come out of nowhere. There was a lot of hard work and dedication done by your students and faculty members to reach such excellence. To preserve this and expand on it, I would highly recommend you to be more active and participate in all SPE local, regional and international events & students programs to maximize the implementation of SPE mission of collecting and disseminating technical knowledge. Conducting and participating in technical events such as student paper contest, PetroBowl and other students' activities will enrich the knowledge of students' members' big time. Also adding social and networking programs to your chapter will further enrich your network and leadership skills. Not forgetting also our social responsibility strategy to show our local communities how much we care in all social fronts. We need to be looked at as an industry that puts a smile on the face of people, improves their lifestyle and supports their economy.

#### **8- What are your plans to support student activities around the world?**

My plan is to further strengthen the relationship between the industry and academia by supporting the academic programs and strengthening the Petroleum Engineering graduate and undergraduates programs around the world, especially in the Middle East. We will try to create an Academia subcommittee in the Middle East to address all academic Petroleum Engineering issues including students' issues. We need to develop programs for the industry to support students and faculty members around the world to conduct research and present their work in SPE local, regional and international events including sponsorship

programs. My plan also is to visit most of the students' chapters around the world, especially in the Middle East, to listen to them and address their needs.

#### **9- Kindly, leave a message for senior students and fresh graduates who are about to join the industry at this time.**

My advice would be saying that your degree is the beginning of a very interesting journey that is full of challenges and opportunities. Excellence is our value that you need to preserve in all things you do. Thinking out of the box is another skill that our industry need, and will rely heavily on fresh graduates to fulfill. The world is looking at us to meet their current and future energy need. The use of oil & gas will not be limited only to power generation and transportation. In addition, oil & gas are used to improve the life style of humans for centuries to come in all domains. SPE will further enrich your long professional journey and provide you with unlimited resources to excel your technical and leadership development, starting with access to the biggest technical upstream resources, conferences, workshops, forums, books, training and webinars and ending with educational resources through its Energy4Me initiative targeting high school and intermediate students. One thing I can guarantee is the fact that those who will be more involved in SPE will have better professional and leadership opportunities in the industry. The journey will not be easy, but will be enjoyable and rewarding. Good luck to all and God bless our beloved country of Egypt.

**SPE has been the focal point, not only for my professional growth, but also for my leadership skills development.**

**I will work together with all SPE members in the Middle East to expand SPE footprint to cover other countries and maximize the benefits of its technical treasures.**

**We need to be looked-at as an industry that simply puts smiles on the face of people, improves their lifestyle and supports their economy.**

**My plan is to further strengthen the relationship between the industry and academia by supporting the academic programs around the world especially in the Middle East.**

# Interview Eng. Hussien Ghazawy

## Vice President and GM at Schlumberger

By Osama Radwan and Mohamad Al-shawaf



**Firstly, we would like to thank you for accepting our invitation to share your insights and thoughts with us.**

Actually, I really appreciate the opportunity to share my thoughts with you. I am very proud, motivated, and optimistic about the future of the oil and gas industry in Egypt. The young people are the future and the tomorrow's partners of success. Moreover, I am thrilled to witness a revolutionary era of the Egyptian petroleum industry under the patronage of the president and the ministry of petroleum and mining resources. What you do is highly appreciated; to keep connecting the industry with the university and connecting the world with each other.

### Part 1: Going Through the Personality:

#### 1- We would like to know more about Mr. Hussien Ghazawy from beginning.

Well, it is a long story whose main hero is passion. I graduated from the Faculty of Science, Ain-Shams University. My background is mainly geology. Then, Surely, I served my country in the national service. By the way, my national service was a special of its kind; it was rich experience with various acquired skills on both the academic and personal level. I pursued a master degree in petroleum geology during my national service period and got it with honor. On the other hand, I touched the human side of many people and had the skill of dealing with different groups, different mindsets, and even different situations. I still remember how people, who cannot read or write, supported me during the study period. They were proud of me and I am very proud of them. It was really a tremendous period of time. From my point of view, I encourage each Egyptian citizen to pass the experience of the national service.

After that, I found myself in front of a competitive market. I knocked many doors and I got the opportunity to join Schlumberger as a field engineer in July 1984. It is an honor to start my career in a leading oil services company like Schlumberger, started in Egypt in Abu-rudes, I spent two years in Egypt, then Pakistan, Nigeria, and West Africa. I was working mainly in the field. In Nigeria, I had the first middle first management position, I was in charge of nearly thirty engineers. After that, I moved to Libya in charge of Libya's operations, then back to Egypt from nearly 1998 to almost 2000, responsible for Egypt, Sudan, and East Mediterranean for Drilling and Measurement segment, then I moved to a staff position where I was responsible for sales and marketing based in Dubai which was great experience as I was travelling a lot, got exposed to many clients and technical issues. That was

for the same segment, Drilling and Measurements. After that, I was in charge of the D&M operations in UAE, Oman, Qatar, and Yemen. Followed by some managerial positions, I was the general manager for all Schlumberger segments in Yemen from 2007 to 2010. After that, I moved to UAE as the Geomarket Manager and the vice president at that time with nearly 220 employees from 57 nationalities with a good percentage of females. It was a completely diverse working environment. Now, I come back to Egypt doing the same job like I was doing in UAE, in charge of Egypt and East Mediterranean. Actually, I am pleased to come back to Egypt to pay back to my lovely home country my experience and knowledge.

#### 2- Concerning diversity, how do you see diversity in this industry?

-Nationality diversity is growing effectively with success insights in different areas. Different people with different backgrounds, when they are being exposed to a technical problem, each one will go through a different approach and the result becomes marvelous.

-Gender diversity needs more work and improvement from all of us. Schlumberger is always keen on involving women in energy field. By the way, the problem may be coming from university; look at your department and count the number of females studying petroleum engineering. It is too few. We need to encourage, support, and involve them. We can start by awareness campaigns in High school level. Along my path, I have dealt with a lot of smart females with effective contributions to the industry and community. They have the right to showcase their capabilities. In Schlumberger, we are leading in both nationality and gender diversity.

#### 3- What were the main challenges you faced when you have started?

-One of the main challenges I faced when I started my career was the nationality diversity. Europeans and North Americans were

dominating the industry 33 years ago. So, it was not an easy thing for an Arabian-Middle Eastern young person to shine then. That applied also on Africans, Asians, and talented engineers from all over the world. However, we have proved ourselves internationally.

#### **4- Could you please state a typical day of yours in Schlumberger?**

-In Schlumberger, there is no a typical day. Each day has its flavor and interesting events. Surely, there are many ups and downs, some days are really tough days and other days are better, but at the end of the day, you will find a special memory to remember. I enjoy what I am doing. I still have the passion and commitment just like when I have started in Schlumberger. I hope to maintain my passion and spread it to all my subordinates. I like to work with my team on well-defined goals and to be straight to the point. Our industry needs actions. We need to be more proactive rather than reactive.

-In Egypt, work is very challenging and enjoyable at the same time, I think we need to improve the workflow and decision-making process. Some decisions take longer than it should. On the other hand, I see a lot of changes. Frankly, I was very pleased with the recent achievements in oil and gas industry coming back after all these years.

#### **Part 2: Schlumberger Advancements:**

##### **5- What are the innovative services which were applied recently in Egypt during the past two years?**

SLB regularly develops new technologies and innovative services to enable the exploration of more difficult oil and gas resources, to increase the production from existing and new fields and to improve the efficiency and reduce the overall cost of the Exploration and Production cycle. Such new technologies are regularly deployed in Egypt and in fact Egypt pioneered the use of some of the innovative techniques before other places. An example of the innovative technologies deployed in Egypt in the past few years are:

-The Saturn Probe Modular Dynamic Formation Tester which enabled the downhole sampling of hydrocarbon in extremely challenging formations and was used in several recent discoveries including that of the giant Petrobel Zohr field in the Mediterranean.

-When it comes to increasing production from oil and gas wells, the latest technological advancement in hydraulic fracturing "HiWay" has been widely applied in the Western and Eastern Desert fields for several companies including Qarun, Khalda, Babcock and Agiba with excellent results enhancing the production gain per treatment and increasing the success ratio when fracturing difficult formations. It is worth noting that Egypt was one of the first countries in the world where this HiWay technology was deployed on a wide scale with outstanding results.

-GeoSphere Reservoir Mapping while Drilling is another innovative service that allows for the steering and the landing of horizontal wells using unprecedented depth of investigation and real-time reservoir mapping which ensures staying inside the

**7- ECE is a great milestone in Schlumberger history. The learning center inside ECE is considered the first one for Schlumberger in Africa. This new operational base will enable Schlumberger to optimize the performance and increase the efficiency. The following photos are recently captured from Egypt Center of Efficiency in the 6th of October industrial area.**

reservoir even in extremely thin formations and long horizontal sections. This innovative technology was successfully deployed for Petrobel in the Gulf of Suez.

#### **6- The multiclient project in red sea, acquired recently by Schlumberger.**

The Red Sea is an attractive area for exploration again as there are only few number (7:11) of drilled wells which have been drilled before. So, multiclient will be done in red sea with an investment of 50 million USD for data acquiring, acquisition and re-processing covering an area of 70,000 square KM of the Red Sea, we hope the red sea to be another good prospective for Egypt.

#### **8-What are the efforts behind the scenes of SLB worldwide to deliver a high service quality to the clients?**

The highest HSSE and Service quality are very paramount in SLB. The high service quality is achieved by a cycle from planning, execution of job and finally the evaluation after the job. All of that construct a continuous system of SLB high quality services which became the culture of all SLB employees.

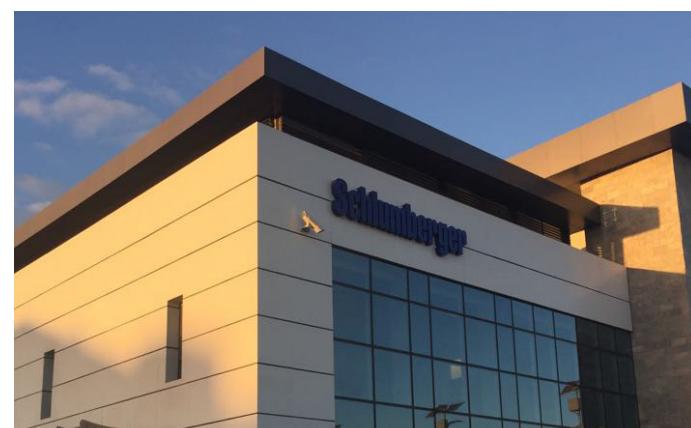
#### **Part 3: Industry Vision:**

##### **9- As one of Egypt oil and gas leaders, we would like to discuss your expectations for the future of the industry in Egypt and the region.**

-Well, I am so optimistic and ambitious. Under the leadership of the minister of petroleum and mining resources, Egypt is moving forward to be an energy hub. We are in full alignment with his vision and that is why we invested in the red sea multiclient project. Meanwhile, Egypt is a rich country with its talented people who will lead Egypt towards high level of progress.

##### **10- Give a piece of advice to the students and the fresh graduates.**

-Never give up. Keep knocking the doors. Be different and special as the market is so competitive. Also work on research as Egypt needs to have more researchers on innovative sights especially on artificial intelligence as oil and gas industry changes dramatically to be more digitized. The position, you will have in the future, depends on you, so draw up your tomorrow. The great keys are passion, commitment and discipline.



# Interview Eng. Kamel Al Sawy

## President at Kuwait Energy Egypt

By Elfaramawy, Elshawaf, and Radwan.



### Part 1: Going Through the Personality:

#### **1- We would like to know more about you from beginning and how you joined Kuwait Energy.**

I graduated in 2001 from Suez Canal University, Faculty of Petroleum and Mining Engineering with honors. My goal was to work in the industry to gain additional knowledge and hands-on experience. Following the graduation, I was among 34 candidates interviewing for a job at Qarun Petroleum Company. Needless to say, I was accepted at Qarun. However, I maintained a strong focus on my professional development and earned my master's degree in petroleum engineering from Cairo University while I was on the job. In addition, I was also working various part time jobs in many areas of the industry furthering my understanding and knowledge. To name a few, I worked in PETRONAS from 2006 to 2008. Then, I worked as a consultant in Oil Search Company. Later on, as Kuwait Energy acquired Oil Search assets, I was offered a management position. I began my career with Kuwait Energy as a production manager up until 2011. After that, I became Vice President of operations which guided me to my current role as Kuwait Energy Egypt President – a role I have been in since 2014. Recalling my journey in the industry reminds me of how fortunate I was to gain all this experience and knowledge. Of course, this did not come easy as I worked applying myself and disciplining myself in all that I do. Recently, I succeeded to get execution master in management from Ashridge University in London.

#### **2- Concerning diversity, how do you see diversity in this industry?**

I always believe in performance regardless whether the

candidate is male or female. In Kuwait Energy's Egypt office, for example, we have a high level of diversity since most of our management team are females. Community relations is another area we pay close attention to as being a responsible corporate citizen is of high importance to us. For example, we have recently sponsored an event supporting the women in the oil field namely "She Can", arranged by SPE Young Professionals.

#### **3- What were the main challenges you faced when you have started?**

One of the main challenges I faced is the typical system and the delay to get promotions because you have to wait the turn. I see the performance should be the controller parameter not the age. I have worked very hard previously, that was a kind of personal branding to get recognized in different places. I see the opportunity in each challenge and I try to explore new experiments every day. H.E. Eng. Tarek Al Mulla, Minister of Petroleum and Mining Resources, is working on a project of modernization and career development for the sector. I see that this project will enhance the industry and increase the calibers.

### Part 2: Kuwait Energy Egypt

#### **4- When Kuwait Energy was established in 2005, Egypt was the second station for operations just after Oman. Among 10 assets in four countries, there are four of them in Egypt. How attractive is Egypt in the eyes of Kuwait Energy? Please discuss.**

Egypt is considered as an important investment for Ku-

wait Energy. Kuwait Energy bought the asset in Burg Al Arab, and then we acquired the Oil Search assets in Egypt and Yemen. In Egypt, we have Area "A" in Gulf of Suez, Abu Sennan, East Ras Qattara, as well as Burg Al Arab. Egypt is of high importance at Kuwait Energy as it contributes a large portion of revenue and production to the total company portfolio. The importance of Egypt for Kuwait Energy appeared clearly while starting in Iraq. Kuwait Energy was asked for track records in operations to prove our capabilities. What has been done in Egypt demonstrates the Company's technical, operational, and leadership abilities. The Company is well positioned in the market and we continue to explore additional opportunities.

**5- In Area "A", the type of the contract is service agreement unlike the other three contracts which are production sharing contract. Please discuss the difference.**

The production sharing agreement is the most common type of contracts in Egypt. When Egyptian General Petroleum Corporation "EGPC" announces bid rounds, the investors start to sign contracts about the acquired concessions. The investors drill exploratory wells, collect data from the wells, and integrate the data into a model to know the reservoir more closely. After that, they start production some years later. Hence, the contract ensures a cost recovery for the investors in addition to a share from the production. The service agreement includes a baseline production. We should increase the production higher than the baseline by a certain amount to get the profit. However, we achieved a noticeable success in Area "A" by applying effective strategies and maintaining high production rates for a long time. We turned into experts in that type of agreements.

**6- In both Burg Al Arab and Area A, the contract date was before 2005. Kindly, explain that.**

The contract of Burg Al Arab was in January 1990 while the contract of Area "A" was in August 2002. When a company buys the assets of another company, the contract is the same for each concession. That is what occurred between Oil Search and Kuwait Energy. When we acquired the assets, we acquired also the contracts. You cannot change the contracts or the terms after buying or getting a share of a concession. The Ministry of Petroleum should approve the process but without changing or issuing a new contract.

**7- Your contract in Burg Al Arab is with 100% revenue interest for Kuwait Energy. Could you please explain that?**

100% revenue interest means our share of interest as an investor and operator among other investors. As long as we do not have other investing shareholders, we get 100% revenue interest. EGPC takes its share and the rest for the investor goes for us.

**8- Kuwait Energy is considered the most contributing company in the industry to the technical events, conferences, student activities, and community service relations. We would like to hear your vision concerning that.**

We are always committed to the societies and contribute to communities in areas where we operate. Our contributions include supporting people in Ras Gharib, and supporting other initiatives that empower women and further develop the local talent. Moreover, we are very committed to the youth empowerment and Kuwait Energy is always keen to participate in student activities as it is the way to help the next generations to move forward. We encourage the students to go beyond the limits to build their own characters to be able to face the industry and become leaders of the future.

**9- What is the idea behind making Kuwait Energy MENA focused?**

Kuwait Energy is MENA focused by the operations track record, we had some projects outside the MENA region, but we preferred to continue in the MENA region because of the ease of communication, nature of business, experience in the area.

**Part 3 : Industry View:**

**10- How did Kuwait Energy face the ups and downs in the oil prices?**

We were working to decrease the cost per barrel to the minimum level and we managed to be a low cost producer. The impact of such a downturn was not so high. We are well recognized in the market as a low cost producer. We do optimization in the manpower, technologies, and all the costs. We should wait to judge the future of the oil price. The oil industry is a volatile business.

**11- What is your vision for the Egyptian oil and gas industry in the upcoming years?**

The Egyptian Industry is so attractive, promising, and effective. The margin per barrel is higher than other countries in the region. I mean the profit of the investor in the barrel. The state in Egypt is now stable. That will attract more investment also. We have low-priced logistics, subsequently, we have low cost operations in drilling and development. As a result, the operators can achieve extra profits.

**12- Give a piece of advice to the students and fresh graduates in this time of the market.**

Always, be positive. Get involved in the industry. That is why we help student activities as you as one of the student chapter are the channels to help the students. I know that some people always say that there are no vacancies or opportunities, but it is all about yourself. Keep moving forward and keep working on yourself.





## How Can Microfracturing Improve Reservoir Management

Mayank Malik - Formation Testing Expert at Chevron, Houston, Texas

### Introduction

Hydraulic fracturing has changed the landscape of hydrocarbon production and reservoir dynamics, especially in unconventional reservoirs, and has also proved to be very successful in conventional reservoirs, but “getting it right” can still be very challenging for profitable production. One important factor for success is having accurate and sufficient knowledge of the stress profile across the reservoir. Historically, Hubbert and Willis (1957) discussed the relation between overburden and horizontal stress and showed experimental results indicating that hydraulic fractures will propagate perpendicular to the minimum confining stress. Asset teams are interested in how the in-situ stress field affects the rock’s response to engineering activity, such as drilling and hydraulically fracturing wells. There are several techniques for determining the in-situ state of stress, such as wireline logs and various injection tests.

Injectivity tests use the pressure response during the initiation, propagation, and closure of a hydraulic fracture to directly determine the state of stress. Compared with leakoff tests (LOT) or diagnostic fracture injection tests (DFIT), microfracturing tests are focused and faster (Nguyen and Cramer, 2013; Malik et al., 2014). Microfracturing targets short intervals of about one meter, rather than several meters (Desroches et al., 1995). Therefore, this technology enables testing of a specific reservoir zone or lithology. The injected volumes have been reduced from barrels to liters. Consequently, the shut-in times between injections are shorter. As a result, many intervals may be tested quickly.

### Microfracturing Technique

Wireline formation testers can be used to determine the minimum in-situ stress within a wellbore interval. A microfracture is created by increasing fluid pressure between two inflated packers or by inflating a single packer to directly breakdown the formation (Fig. 1). The minimum stress is determined by allowing controlled volumes of fluid to leakoff into the microfracture. The technique may be repeated multiple times (injection/falloff cycles) during a single trip.

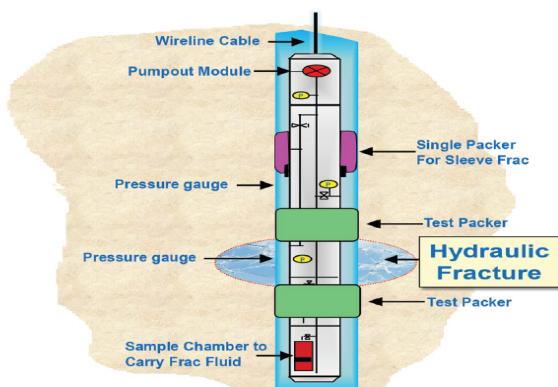


Fig. 1 - A formation-testing tool with straddle packers is used for microfracturing (modified after Mishra et al., 2011).

During each cycle, a certain volume of fluid is injected into the packer interval, the planned volume should be derived using the desired fracture half-length, Young’s modulus of the rock being tested, the net pressure encountered after fracture initiation, and an estimated fracture height. After that, the operators stop the injection, record instantaneous shut-in pressure (ISIP), and monitor the formation leakoff for signs of closure by plotting pressure versus G-function time (Nolte, 1979) and pressure versus the square-root of time (SQRT). Under normal leakoff conditions, the pressure decline is a linear function with respect to the G-function and can be used to interpret closure pressure and time. The closure pressure is the pressure at which the fracture closed completely after shut-in and it is considered an accurate measure of the minimum stress normal to the fracture surface. The basic procedure of the microfracture test is illustrated in (Fig. 2).

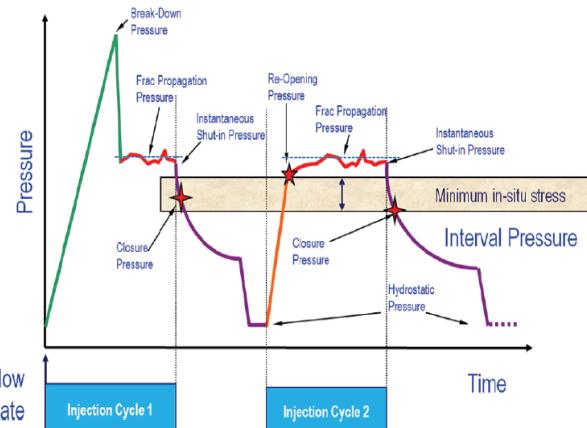


Fig. 2 - A hypothetical microfracture response showing fracture initiation, propagation, and closure for two cycles.

Returning to hydrostatic pressure between cycles gives a better reopening pressure measurement on the subsequent cycle. These injection/falloff cycles can be repeated multiple times in order to reopen, further propagate, and close the fracture. Cycles are repeated until an agreement is reached that a dependable and repeatable fracture closure (i.e., minimum in-situ stress) has been recorded.

Fracture initiation pressure must overcome the hoop stress to initiate a fracture. The dominance of hoop stress could result in a false high minimum horizontal stress measurement (Fig. 3); therefore, ensure that total injected volume is high enough to propagate the fracture at least four wellbore radii away; otherwise, the closure pressure derived from microfracturing is not representative of the formation.

### Microfracturing vs. DFIT

Microfracturing is typically performed in vertical, openhole pilot wells whereas DFITs are usually performed in the first stage of the cased hole lateral. Table 1 compares these two injectivity testing techniques. Compared to DFITs, microfracture tests are fast and focused. A DFIT is usually pumped with a frac pump

which cannot pump slowly. This commonly leads to unconfined height growth, a large fracture diameter and “penny” fracture geometry.

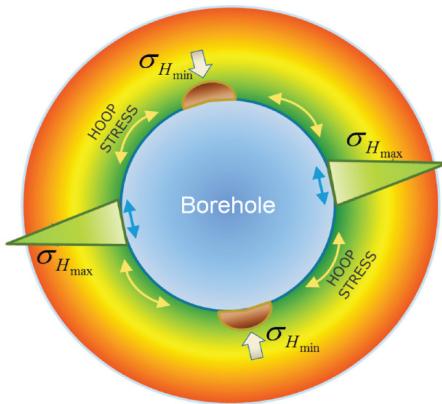


Fig. 3 - Hoop stress concentrates around the near-wellbore region during drilling operations.

	Microfracturing	Diagnostic Fracture Injection Testing (DFIT)
+	<ul style="list-style-type: none"> <li>Actual in-situ measurement</li> <li>Magnitude, orientation, known location and fracture height</li> <li>Up to 20 measurements/run</li> <li>Multiple attempts to identify fracture closure pressure</li> </ul>	<ul style="list-style-type: none"> <li>Actual in-situ measurement</li> <li>Less risky than microfracturing</li> <li>Large volumes</li> <li>Fracture fluid efficiency</li> <li>Fluid leak-off coefficient</li> <li>Reservoir perm measured</li> </ul>
-	<ul style="list-style-type: none"> <li>Small volumes</li> <li>Slight risk of tool sticking</li> <li>Tool pressure limitations reached below fracturing</li> <li>Problems with deflating packer</li> <li>Additional image log required for induced fracture study</li> </ul>	<ul style="list-style-type: none"> <li>Pressures measured at surface</li> <li>No fracture orientation information, location, or dimension of the fracture</li> <li>Single measurement per hole</li> <li>Single attempt to identify closure</li> <li>Long time to measure</li> </ul>

Table. 1 - Comparison of Microfracturing vs. DFIT.

By contrast, a microfracturing job is pumped so slowly that the height growth is contained. This extremely slow rate translates to a very small fracture diameter, so the ratio of (fracture length) / (volume pumped) is orders of magnitude higher for microfracture than DFIT. Formation tester microfractures incorporate a downhole hydraulic pump, at least one downhole quartz pressure gauge, and provides real-time control through the wireline cable. Thus, microfracturing is similar to using a “downhole rock mechanics lab” for economically obtaining vertically distributed stress measurements prior to casing and completing the well. By combining microfracturing in an open hole with DFITs in a cased hole, the understanding of the stress state, its variation, and its influence on hydraulic fracturing can be substantially improved, thereby enhancing the fracturing test results (Naidu et al., 2015).

### Case Study 1: Delaware Basin, USA

Seven lithofacies across the Avalon shale and Bone Spring sands were targeted for obtaining independent direct measurements of closure stresses with a microfracturing tool.

Figure 4 shows a pressure vs. time plot for a microfracture test. Two injection and falloff cycles were performed in succession at the same depth to validate consistency and repeatability. The total volume of drilling mud injected in the fracture is 2.7 liters. In the first falloff, an ISIP of 5,695 psi was observed, whereas when the test was repeated, an ISIP of 5,675 psi was observed. ISIP is not used to determine the minimum stress but still can be used as an upper boundary for closure pressure and for comparison with the square-root of time, G-Function, and other results.

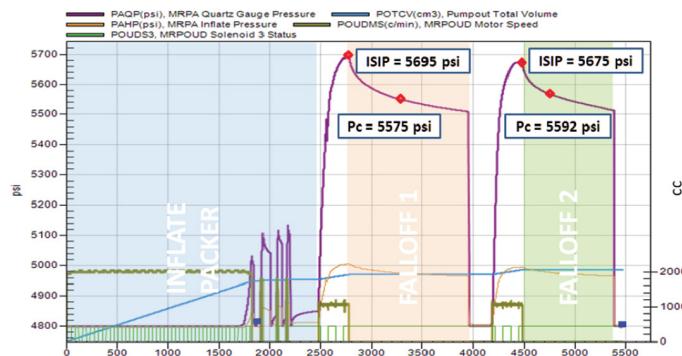
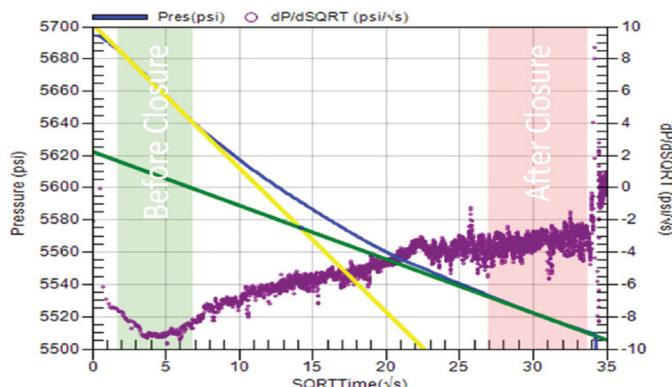


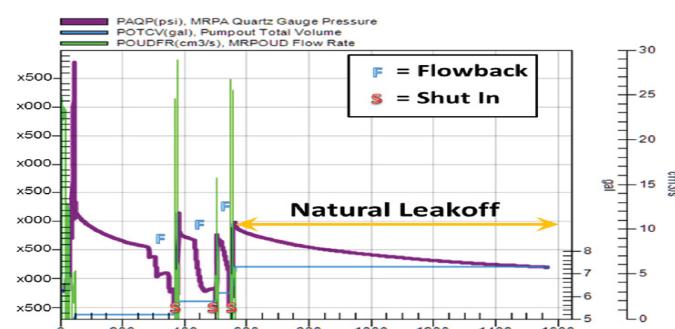
Figure 5 displays the SQRT plot for the first falloff cycle. Closure pressure is measured at the time when the pressure during shut-in deviates from a linear trend on the square-root of shut-in time. Since the fracture is induced over a relatively short (3.3-ft) straddled interval, the closure time is only 7.9 min for the first cycle and the closure pressure is 5,575 psi.



### Case Study 2: North Sea, UK

Water injection is used in a field located in the outer Moray Firth to maintain reservoir pressure above the bubblepoint. In the target reservoir sections, the injection pressure is constrained to 14.9 lbm/gal to minimize any risk of seal breach. However, there was a general lack of information on the rock stresses in the overlying caprock intervals. The injection pressures were constrained on values derived from sonic logs. There was a general concern that the injector wells might be over constrained.

Wireline stress measurements using microfracturing were used to determine a more accurate minimum horizontal stress in the overlying formations (Fig. 6), allowing a substantial increase in the water injection rate and a 1,000 to 2,000 BOPD increase in oil production.





# How “Non-Unique” is Reservoir Simulation Really?

Dwayne Purvis, P.E. - Consultant, Reservoir Engineering and Management

When someone asserts that reservoir simulation generally isn't worth the time and effort because the results are “non-unique”, they show to me how shallow their experience and insight really are.

First and foremost it tells me that they have never tried to come up with one of those (supposedly) many solutions. It can be hard to find even a single history match! Since the person making the complaint has little or no experience with modeling, then it is easy to see why they do not comprehend good model-building or the value it generates.

In a century of our discipline, we have only identified six methods for the estimation of reserves. Simulation incorporates and

benefit reservoir development in ways no other technique can.

## All models are wrong, but some are useful

So goes the aphorism attributed to mathematician George Box. The apologist made the assertion in the context of expounding on the wisdom of what makes for a good model, in this case “parsimony”.

Creating a model requires the engineer to examine consciously and quantitatively every characteristic of a reservoir system; every aspect becomes an input to the model. Then, in the running and testing of the model, the user can calculate and not merely guess at the significance of each uncertainty and about what

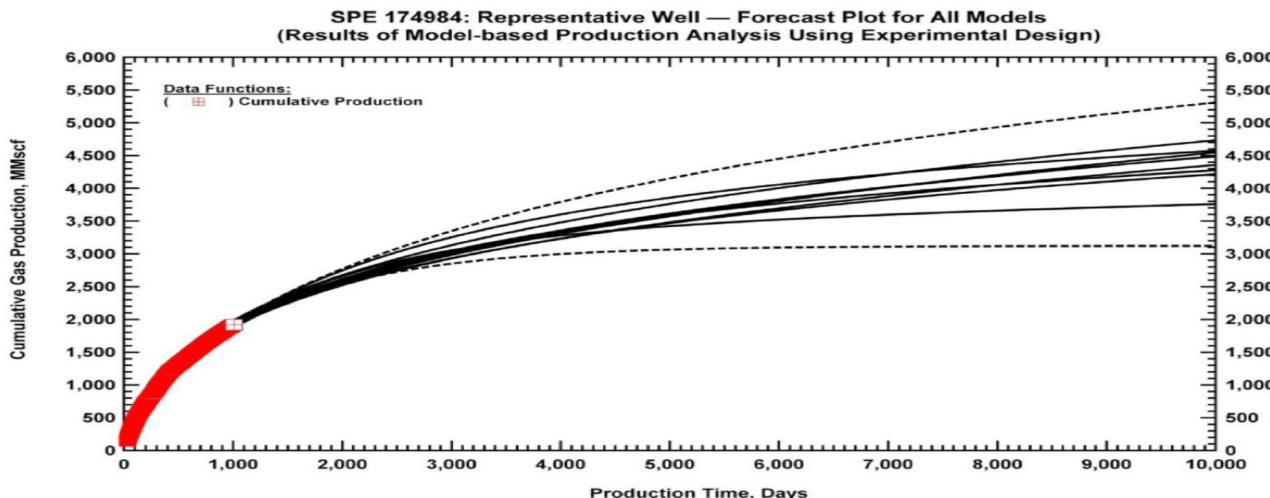


Fig.1 – An example showing the distribution of forecast results when multiple history-matches have been achieved.

thus constrains the answer by all of the relevant physics and thus has fewer degrees of freedom in aggregate. It is true that simulation requires many inputs and that some much have large uncertainties. On the other hand, though, sits Arps decline curve analysis which has very few constraints. The history-match and then sense-check of a simulation against actual history uses the same processes as Arps, and it honors a cabinet of other parameters about the nature of the rock and the fluid which are known. Rate-transient analysis has more constraints and thus more uniqueness than historical decline analysis and it may feel more comfortable, but even RTA is constructed from a model, and that model with more simplifications than inherent to full reservoir simulation.

Moreover, we can sometimes quantify the effects of the non-uniqueness. The power of new algorithms, software and hardware has enabled work processes to generate sometimes multiple history-matches, and Fig.1 is just one example showing the distribution of forecast results when multiple history-matches have been achieved. It is interesting to note that the distributions of results are narrower than for decline curve analysis.

Regardless of the inherent uncertainty, even with a single history-match or none at all, a prudent process of simulation can

truly matter to our plans for the reservoir. Modeling in general and reservoir simulation in particular should not be treated as a plug-and-chug, black-box technique. It is a tool for understanding not an algorithm for an answer. Almost regardless of the outcome of the simulation, the process of deconstructing and testing the reservoir leads to greater insights and thus better development decisions.

It should also not be treated as the world's most expensive curve-fitting tool. Excessive elaboration is, in the words of Dr. Box, “often the mark of mediocrity. Less pejoratively, excessive elaboration is a rookie mistake which violates established wisdom of model-building. The insight of William of Occam has endured since the 14th-century, namely answers should favor solutions which require fewer prerequisites to be true. To find and focus on the truly key parameters, to explain the dynamics simply and elegantly, those are the requisites to a successive development campaign.

In the ultimate step, simulation allows for a well or a field to be developed virtually in any number of ways before it is developed in real life. It is by far the most economical venue for experimentation and optimization in this industry without prototypes or do-overs. For sure, simulation is not the appropriate tool in every case but it probably should be used much more.



## Exploring new depths, in different lands.



ADES Group delivers full-scale petroleum services; from onshore and offshore drilling to full oil & gas projects and services. With emphasis on the HSE-culture while maintaining excellence in operation targets. ADES Group succeeded to establish its position as **#1 EGYPTIAN OFFSHORE DRILLER** in Egypt & the red sea region (Source: Rigzone).

Despite the serious challenges of the oil & gas industry, ADES succeeded in expanding its operations within MENA region by acquiring new onshore drilling rigs & offshore Jack-up rigs in Egypt, Algeria and Saudi Arabia in addition to introducing the first integrated MOPU & FSO (Mobile Offshore Production Unit & Floating Storage and Off-loading) solution in Egypt.

ADES Group has grown its family to +1400 highly qualified employees with focus on training and developing their capabilities to meet our future strategic expansion challenges and objectives.

### MEMBERSHIPS



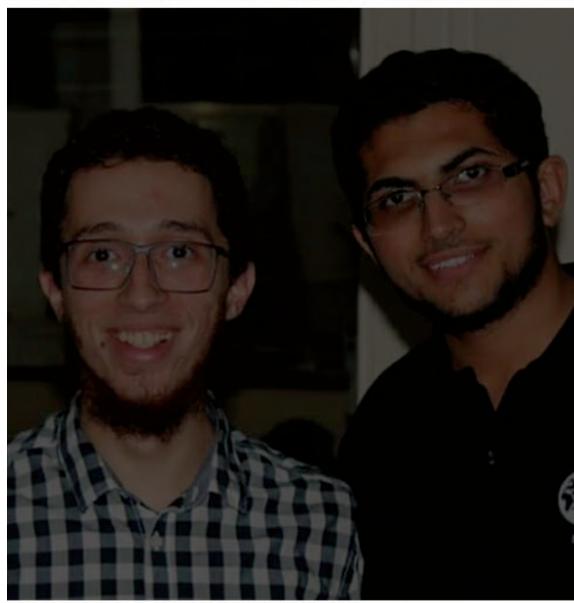
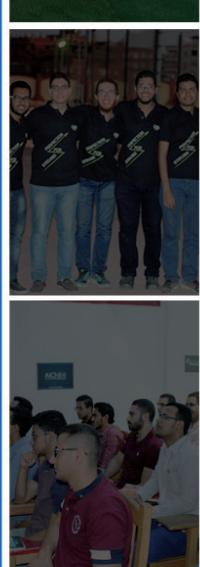
### CERTIFICATIONS

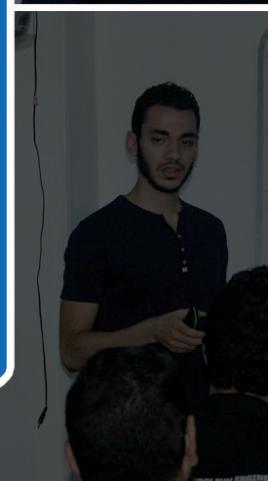
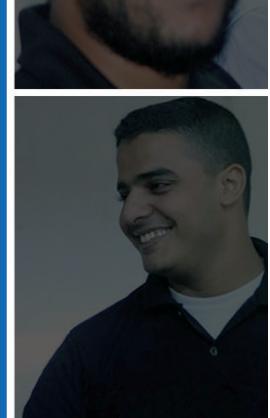
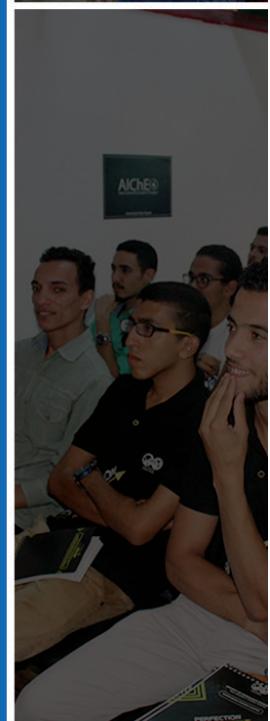
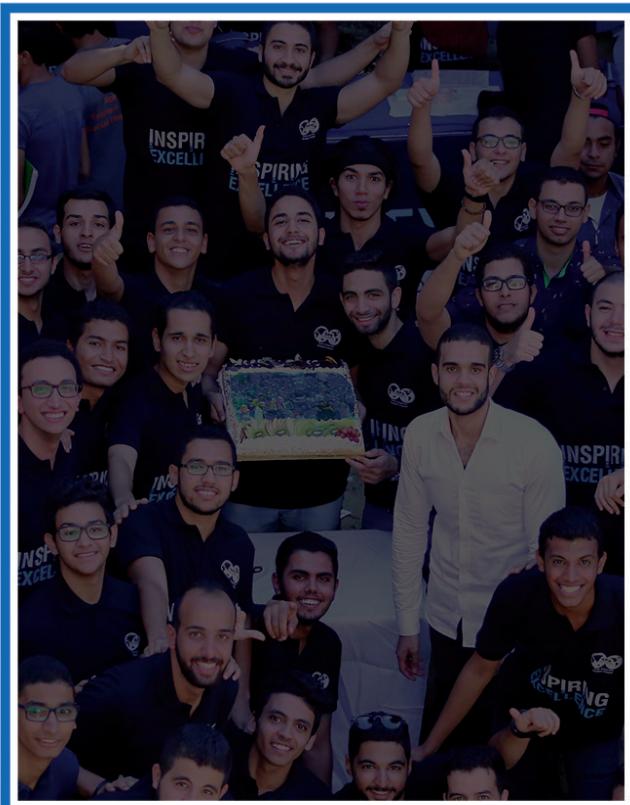


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## Why to Model an Oil Field

Mario Pereira de Carvalho - Senior Geologist Partner, General Geology Consultants Ltd.

3D Geological Modeling is the best issue to visualize, in three dimensions, an oil field in its integrity.

A well-constructed 3D Geological Model allows for the visualization of all rock layers and their different geometries, the faults and displacements, relay ramps, the complex distribution of porosity, permeability, fluids, and more.

The best 3D Geological Modeling software programs have well-elaborated geostatistical interpolation and extrapolation algorithms, derived from **Kriging**.

The South African Mining Engineer Daniel G. Krige, along with the French Mathematician Georges Matheron, developed the Kriging process in the 1960s. Although their intent was to apply it in mining, it began to be used in E&P activities of the Oil Industry in the 1980s. Today, it is widespread in this industry.

Kriging is a regression method used in geostatistics to **interpolate and extrapolate data**. It assumes that the correlation of a variable with its point of origin (real data) becomes weaker with distance, and may even disappear.

Simply put, what Kriging does is to estimate, **many times over**, unknown values **between and beyond** known values (real data), using the real values as calibrators, until the average of the errors (deviations between real values and estimated values) is null, at which point the solution has been reached.

Kriging is considered a **BLUE** (Best Linear Unbiased Estimator) type method: it is **Linear** because its estimates are linearly weighted combinations against the real data; it is **Unbiased** because it seeks that the average of the error to be **zero**; and it is the **Best Estimator** because the estimation errors have **minimum variance** (estimation variance).

The application of 3D Geological Modeling in the petroleum industry is more reliable than in the mining sector because of the greater volume of data generated during the E&P of petroleum, which, in this case, are seismic and electric logs from the drilled wells.

A conventional 3D seismic survey for reservoir development usually generates one seismic input every 20 meters along the surface of the reservoir layer, and the electric logs of the wells generate vertical information every 20 centimeters.

For example, in an oil field with thirty million cubic meters VOIP, 100 drilled wells, two different reservoirs layers distributed in an economic target section measuring 400 meters thick, 2,500 meters length, and 1,500 meters width, and which is integrally surveyed by 3D seismic, will contain 375,000 seismic data points at the surface of the two layers, and 600,000 electric log data points generated by gamma ray, density and resistivity electric logs, totaling **225 billion inputs!**

**Is there another way to work and take advantage of this volume of information?**

**2D models do not take advantage of all of this valuable information.**

The **best knowledge** about the structural geology of the oil field can be achieved applying the 3D Geological Modeling process, since seismic trace, for example, has a maximum resolution of around 30 meters that does not define faults with displacements smaller than this magnitude. Additionally, drilled wells, which depend on their horizontal spacing, that are almost always of the order of several tens of meters, **do not define small structures either**. Thus, faults with displacements smaller than 30 meters **usually go unidentified**, greatly reducing the satisfactory management of the flows—production and injection—and the results of infill drilling.

However, when this large amount of data is **correctly** manipulated in 3D Geological Modeling, all these geological structures can be visualized.

Additionally, the information provided by electric logs, cores, and other analyses from analogous oil fields allows the elaboration of **3D Geological Models of Petrophysical Attributes**, such as porosity, permeability, and oil saturation—thus taking advantage of another geostatistical function offered by the software (viz. **Co-Kriging**) when an attribute is modeled from the spatial distribution of a different attribute.

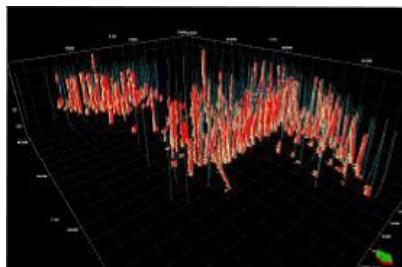
3D Geological Modeling also provides **much more accurate VOIP's calculation**, since it uses integral calculus to add the millions of cells, each of which contain data on geographic coordinates (x, y, and z), porosity and fluids saturation.

Last, but not least, is the application of the **Numerical Flow Simulation**, which incorporates new attributes to the 3D Geological Model, such as Qo, Qw, Qg, GOR, relative permeability curves, compressibility, etc. and dynamically activates the 3D Geological Model trough the time, making it possible to extrapolate the **future flows behavior** and optimizing the reservoir oil field management.

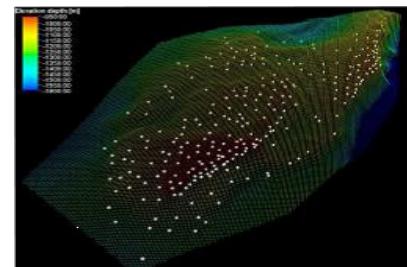
My experience with 3D Geological Modeling started at Petrobras S.A., in 2005, where I elaborated twenty-three 3D Geological Models of Oil and Gas Fields in the Campos and Reconcavo basins, with about two thousand wells drilled.

I won the National Petrobras' Prize PRI 2011 - Prize of Recognition and Incentive, for my contributions in the activities of the 3D Geological Modeling Process.

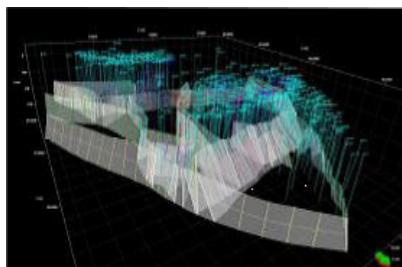
Step 1 – Wells and Electric Logs Download.



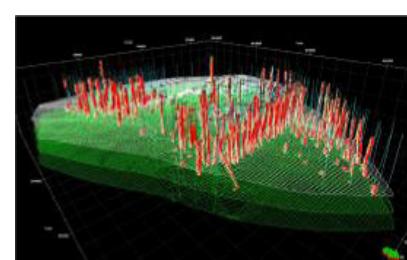
Step 2 – Well Tops and Seismic Data Download.



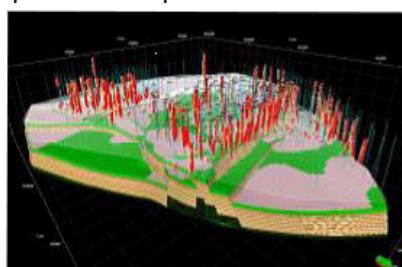
Step 3 – Fault Modeling.



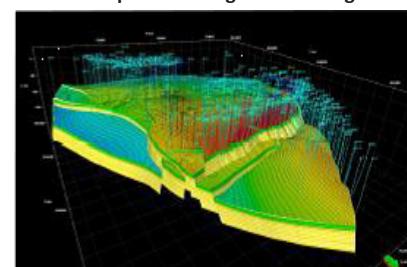
Step 4 – Cells Size Determination.



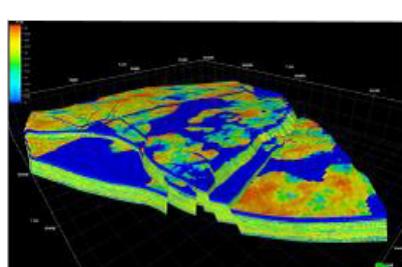
Step 5 – the Last Step of the 3D Grid Construction.



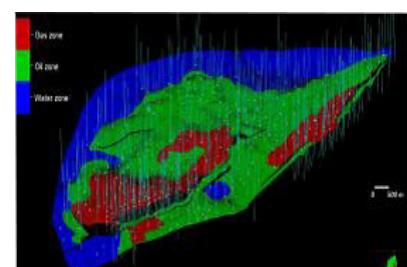
Step 6 – Lithological Modeling.



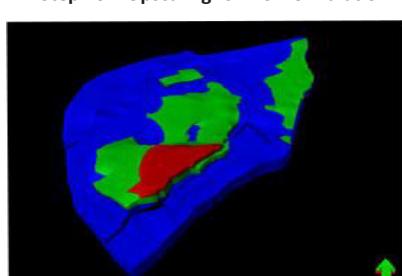
Step 7,8 – Petrophysical Modeling.



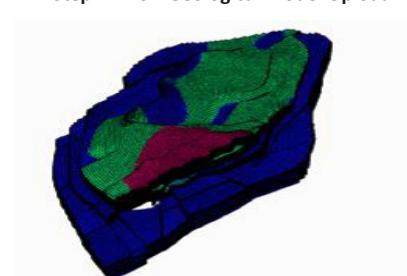
Step 9 – Fluids Modeling.



Step 10 – Upscaling for Flow Simulation.



Step 11 – 3D Geological Model Upload.

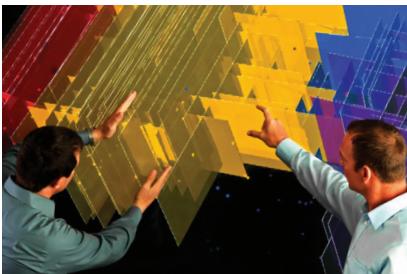




# Are You Getting the Results You Want?

## WE CAN ACHIEVE THEM, TOGETHER

Whether your focus is deep water, mature fields, or unconventional, Halliburton experts will work with you every step of the way to help maximize recovery, increase operational efficiency, and lower your cost per BOE. That's not an empty promise. That's our commitment to you.



## Halliburton Conquering Unconventionals through Collaboration and Technology

As the world's energy needs continue to rise and more countries pursue greater degrees of energy independence, the new frontier of unconventional resources will continue to expand. The success of unconventional resources across North America will find greater footing in the Middle East and North Africa.

The exploration, development and production of unconventional resources are highly variable and require a collaborative, holistic understanding of the subsurface and the reservoir. Enhanced recovery techniques, such as hydraulic fracturing, combined with innovative technologies can optimize well placement and well design, identify sweet spots and improve fracture treatment and spacing to get more production at the lowest cost.

Halliburton's expertise in unconventional resources spans decades as it collaborates with customers to engineer solutions that maximize asset value and lower the cost per barrel of oil equivalent. This objective is realized by accelerating reservoir understanding and reducing uncertainty through subsurface insight, developing fluids to increase drilling efficiency and well productivity through customized chemistry and delivering reliably and efficiently at the wellsite while reducing the environmental footprint.

FracInsight® analysis, a workflow that leverages the best available horizontal well data to select perforation clusters and stage locations, is one of the technologies that play a significant role in developing high performing wells. It is designed to create a more consistent fracturing operation by eliminating the fracturing of nonproductive rock and predicting how the reservoir will respond to stimulation.

The service is especially valuable in new and undeveloped unconventional assets that often require operators to prove reserves without the expense of drilling dozens of wells to establish a learning curve. Technologies like FracInsight that draw on basin specific data are critical to driving better producing wells at lower costs.

Accurate well placement is another challenge in unconventional reservoirs. Halliburton developed the Radian™ Azimuthal Gamma Ray and Inclination Service, a geosteering solution that provides real-time, high-quality borehole images and continuous inclination measurements, to help operators accurately place the wellbore in the sweet spot for increased production and lower costs per BOE.

Radian recently helped an operator identify previously unseen differences between formation layers to provide a much clearer understanding of the geological structure and position of the well. This resulted in cost savings by avoiding more expensive logging while drilling technology on the job.

Companies expanding their unconventional presence across the Middle East and North Africa must also overcome the unique challenges they face. Due to the need for long horizontal drilling in the region, and the challenges this presents, Halliburton designed the Geo-Pilot Duro Rotary Steerable System to increase drilling efficiency with a higher rate of penetration. New drilling motor technology has also enhanced reliability so operators can drill longer runs while reducing costly non-productive time resulting from motor failure.

As demonstrated in North America, unconventional resources hold great promise and technologies that help reduce uncertainty and increase production are critical to their success.

# HALLIBURTON

## SPE Research School'18 (Kuwait Energy)

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RESEARCH SCHOOL  
2018



This school provides a valuable opportunity which includes a mentorship program from highly professional engineers, also you will be able to make your own research paper in final of this project and finally, it is sponsored by Kuwait Energy Egypt. There were 9 opportunities, 3 opportunities in each discipline (Reservoir, Production, and Drilling). The program is designed to teach the students how to write a technical paper, and how to visualize an idea into a project. The candidates were selected according to tasks to ensure their commitment and eagerness to learn. The program goes through several milestones from learning research basics, mentors' guidance in Kuwait Energy Egypt, submitting the idea, evaluation, writing the paper, then the final presentation.

## EDC Winter Training



The Egyptian Drilling Company provided Suez University students with a highly effective University Program as a CSR initiative. The program is to visit EDC premises and introduce them to the drilling work environment in addition to giving students an overview on the operations and the other supporting departments through presentations. The 3 day – program includes well control sessions, visits, practice, and meetings.

## ADES SIP'17

ADES and SPE Suez gladly presented the most valuable internship program ever, SIP 2017 season. From office visits to the greatest practical experience on offshore rigs, MODUs and MOPUs, we have seen more through ADES window. We have learnt more important values; working safely while not compromising our ownership to our teams. Technical experience is now broadened: drilling operations, well completions and services. The industry always has more to show us. This internship is that sort that you should always seek, specially from a great provider as the no. 1 offshore driller in Egypt, ADES.



## PICS

Petroleum Industry and Career Summit (PICS) is a mega event organized by SPE Suez University Student Chapter in collaboration with The American University in Cairo SPE Student Chapter on 24, 25 November, 2017. HALLIBURTON and BGS Energy Services were the main sponsors of the event. This outstanding summit included many technical sessions about new challenges in oil and gas industry, in addition to motivational talks about idols in the industry. Moreover, industry pioneers talked about current crisis and the needed skills to get through it. HALLIBURTON Egypt offered a technical competition between students. Also, BGS ENERGY SERVICES provided us with three job shadowing opportunities based on CV filtration.

As it is important for us to develop ourselves, we recorded the feedback of the attendees. Many students and engineers admired how students could organize these huge events. They were glad to meet brilliant minds in PICS. Many engineers asked to participate in the upcoming events. Also, students from different universities liked the event and encouraged us to organize such big events.



Dr. Mohsen Abdel Fattah  
Senior Advisor at Halliburton



Eng. Moustafa Fouad  
Global Director at BGS Energy Services

## SPE Suez Science Fair: A New Approach

For the third year in a row, SPE Suez presents its Science Fair to Suez University's students. Every year, SPE Suez University team prepares several demos on the campus to illustrate the functions and theories of operation of different jobs and processes carried out in the field using scale models. Students from different academic years attend the fair to view the various working scale models and discuss their theories of operation with the chapter's team.

This year, the team gave several demonstrations of Sucker Rod pumps, Gas Injection, Gas Lift, and Marsh Funnel viscometer. Huge amounts of time and effort were invested to build exactly similar scale models which are needed during the demos to give students a clear idea of how these technologies work in real life.



## GUPCO Technical Forum

Gulf of Suez Petroleum Company provided the students with 5-day course about drilling and well logging. The drilling program lasted for 3 days and the well logging program for 2 days. The accepted candidates were selected through CV filtration by the chapter human resources team. On behalf of the team, we would like to acknowledge the exerted efforts by GUPCO team along the course period and even before the event through planning and offering support.



pter  
WS



## Orphans' Week

What can be crueler than being deprived of your parents and without someone caring about you? Our team wanted to make some young children happy, inspired, and educated. They went to a charity and played with them as well as teaching them some things. The children were so delighted, hopeful, and passionate. The activities were drawing, competitions, reading some stories, and playing soccer. Each day was a different story to tell about how the man can change someone's life easily. Simple things are enough to make someone happy.

## SPE Suez Developmental Project: Skills Club

Believing in the critical role that business skills play in today's professional world, SPE Suez University Chapter launches its first comprehensive developmental project "Skills Club". The goal of the project is to provide Suez University's students with the needed soft skills to perform better in their future professional careers.

The project consisted of several programs discussing various skills such as Successful Interviewing, CV Writing, Public Speaking, LinkedIn and Email Writing, Persuasion and Negotiating, Freelancing, and Professional Attitude. The project also included long-term programs for Professional English and Graphic Designing.

More than 60 students from Suez University were able to benefit from Skills Club project during the first semester alone. It's also worth mentioning that the sessions and workshops provided during the project were presented by a talented group of the chapter's current student leaders.



## CASE STUDY



# Potentiality and a Review on Puntland and Somalia Region

Dr. Mohamed Basyouni - Senior Geologist, Upstream & NBD team at Dana Gas

### Exploration History:

Petroleum exploration has extended over 60 years. The first exploratory well, the Sagaleh-1, was completed in 1956 and likewise Hobyo-1 was inscribed to have been finished in October 1956. As of the end of 2012, a total of 63 wells have been drilled. None of these wells has been commercially successful, although some have had hydrocarbon shows.

### Geological Review

The most clearly defined basins in Puntland are the Nogal and Darhoor basins. These large depressions are visible on satellite imagery.

The two basins are believed to be part of a failed rift system and are analogous to the prolific Yemen rift system found across the Gulf of Aden. It is thought that the oil reserves found in the Cretaceous and Jurassic sedimentary sequence in Yemen could also be present in similar formations in the northern portion of Somalia. These two areas were joined approximately 18 million years ago, before the movement of the Indian plate away from the African plate.

The basin fill is extremely thick, with more than 10,000 feet of sediments in some areas. The main target reservoir is the Jurassic-aged sandstones belonging to the Gabredarre Formation. These reservoir sandstones overlie the organic rich shales and marls of the Uarandab Formation, which is thought to be the source rock for the oil seeps observed along the boundary faults.

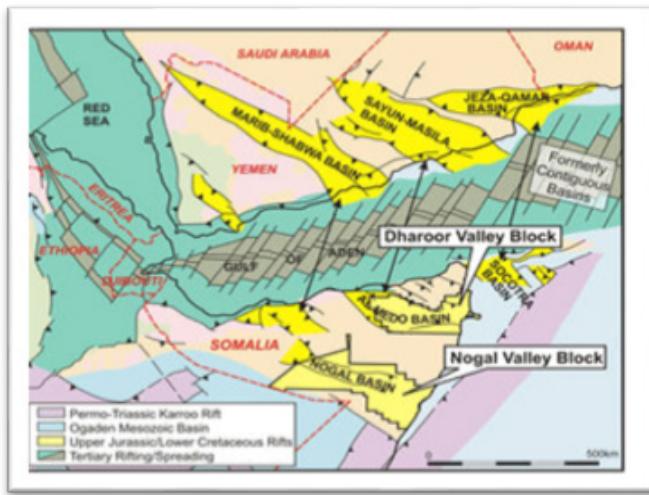


Fig. 1 - Structural Elements of Somalia and Gulf of Aden

### Petroleum System

#### Are there suitable reservoir rocks? Yes

A reservoir rock has porosity and permeability. Porous sandstone and fractured limestone are good reservoir rocks. Porous dolomitic-limestone are plenty in the sedimentary sequence of Somalia. There also basal clastics that terminated in early Jurassic.

#### Are there seals or cap rocks? Yes.

Oil and gas accumulate only where seals occur above and around reservoir rocks so as to stop the upward migration of oil and gas and form traps.

#### Are there suitable structures? Yes.

Structural traps: These traps hold oil and gas due to the earth has been bent or deformed. The trap may be simple. Also, there are stratigraphic traps.

#### Why didn't previous explorations reach a commercial discovery?

Early geologic models were incorrect - bad well location occurred in many wells.

Early data were of insufficient resolution - bad well location was a major problem. Many of the previous tests were drilled on old or inadequate seismic data. Better geophysical techniques and modern explorations concepts will provide improved opportunities for any exploration undertaken in the future.

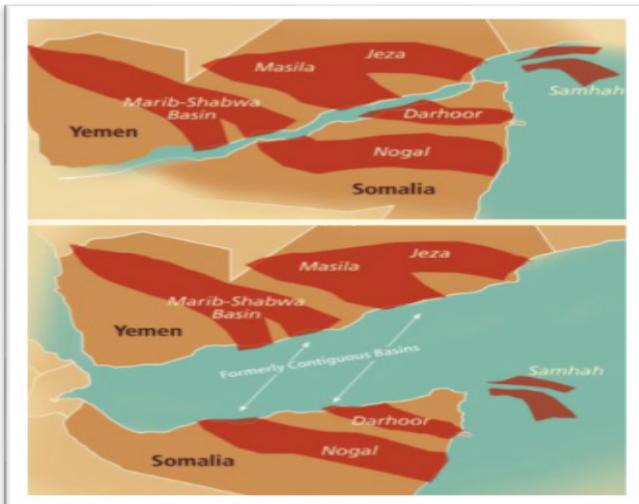


Fig. 2 - Sedimentary Basins (Pre and Post Rift) of Somalia and Yemen.

Technological development in seismic surveying and in other areas of exploration has occurred and now exploration is more promising. Favorable terms and a new petroleum law with a production sharing agreement were passed by the parliament in 2006 and Somalia is ready for exploration, development, production, and exporting. Stability is slowly coming back and the country is democratically transforming. Location and geographical: Not far away from the emerging markets of China and India and the production is easily exportable.

#### Why is Somalia under-explored and neglected for so long?

Somalia has been sparsely explored. The drilling density shows that wells are spaced far away from each other. However, Somalia contains several exploration plays with world-class potential

that remain to be tested. Just prior to the collapse of the "Somali State" in December of 1990, several concessions were held by major international petroleum companies and at least three key wells were scheduled to be drilled. Then the civil war broke out and companies have to flee.

## **Oil and Gas Potential**

Most of Somalia has a Jurassic to Miocene sedimentary section that ranges from 2 to 5 Km. thick and is divided into seven unconformities or transgression-bounded sequences. Thicknesses of these sequences vary significantly within eight depositional basins. There are at least eight petroleum basins in Somalia that hold potential prospects ready for exploration and development. Some of these sedimentary basins thicknesses are more than 5 Km. and contain good source rocks, reservoir rocks, seals and traps necessary for oil and gas to deposit.



Fig. 3 - Somalia Potential Basins

Onshore, the Jurassic to Tertiary section consists primarily of inter-bedded platform limestones and shales, locally with evaporites. This section is transitional eastward to deeper water shelf and basinal deposits along the coastal margin. Mesozoic rifts are present in northern Somalia. The early Cretaceous was a time of widespread emergence. Deltas related to major drainages developed in the Late Cretaceous and Tertiary; subsidence led to accumulation of a thick Tertiary section of deltaic and marginal marine deposits in southeastern Somalia. The main structural elements resulted from rifting of Gondwana land, during Carboniferous to Jurassic, separation of Madagascar-India in early Late Jurassic, and opening of the Gulf of Aden in mid-Tertiary. In central and southern Somalia, warping and down-to-the-coast faulting is Late Cretaceous to mid-Tertiary in age. In the north, most deformation is related to Gulf of Aden rifting in which Africa serrated from the Arabian Peninsula.

## **Petroleum Plays**

Somalia is a virtually unexplored territory, with only 60 wildcats in some 580,000Km<sup>2</sup> of sedimentary basins, and 11 oil and gas discoveries, matching the success of the best oil provinces in the world.

Mature, oil-prone source-rocks combined with potential reservoir rocks and structures occur in a variety of geological settings. Viable exploration plays include rift basins, regional arches, carbonate platform margins, deltaic complexes, and faulted basin margins.

The most promising region for oil and gas prospecting in Somalia is believed to be the Mesozoic shelf and reef area around the Somali Embayment and around the Nogal uplift.

The total sedimentary column in Somalia is in excess of 8,200 m,

with 1,400 m of Cretaceous in central Somalia, whilst Sinclair's Obbia-1 penetrates more than 2,700 m of marine Jurassic rocks in the Somalia Embayment without reaching basement.

Petroleum generation is indicated on surface by active oil seeps in former British Somaliland, and by the presence of many oil and gas shows in the wells drilled in Somalia and Ethiopia. In southern Ethiopia, the barely appraised Calub 1.5 TCF gas discovery awaits access to the sea to be developed. Secondary prospective oil and gas regions in Somalia are the coastal and offshore marine Tertiary sedimentary rocks.

Stratigraphic traps in clastic rocks caused by facies changes and onlaps against the uplift regions of Somalia, and pinch-outs in carbonate sedimentary rocks are other possibilities. There is no evidence of major compressive folding in Somalia, but NE-SW-trending gentle anticlines are mapped in Tertiary rocks in the north, and are also identified in the subsurface in central and southern Somalia by seismic. The structures are caused either by rejuvenation of Jurassic fault blocks or by retreat of thick underlying evaporites.

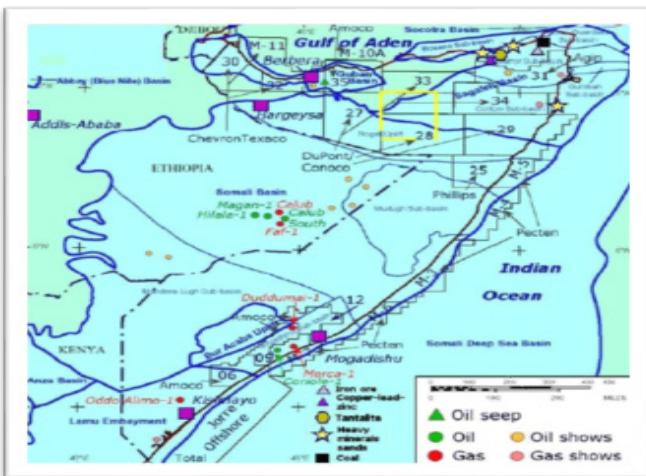


Fig. 4 - Somalia force majeure blocks

## **Conclusion**

Time has come for investors and international oil companies to aggressively consider exploring for oil and gas in Somalia. The country has a lot to offer such as eight sedimentary basins with columns of 5 to 6 Km in several areas and a range in age from Jurassic or Triassic to Tertiary.

Tectonic movements have been extensional, leading to thick and varied columns, facies changes, faults, arches, and folds associated that provides many possible combinations of trap, reservoir, seal and source rock.

Many of the previous tests were drilled on old or inadequate seismic data. Better geophysical techniques and modern exploration concepts will provide improved opportunities to present ventures.

The country is also located geographically in a strategic place in Africa having a long coastal line and it is easy to export to India, Japan and China and other emerging markets around the world.

It remains to be optimistic about Somalia's hydrocarbon potential whether it is onshore or offshore. But companies need to be socially responsible: transparent, free of corruption and bribery and to operate safely without causing environmental degradation like in Niger Delta or in the Gulf of Mexico. Likewise companies should contribute to the communities in which they operate by creating jobs, using local supplies and supporting community development. The aim is to make an ever-lasing difference to the quality of the communities' lives.



# Advanced Production Data Analysis in Oil Carbonate Reservoirs

Pedro M. Adrian - Reservoir Engineer at YPFB CHACO.

## Introduction

The world's conventional oil, stored in carbonate rocks, is commonly estimated at around 50 – 60 %. These reservoirs are complex systems characterized by the presence of different porous media and transmissibilities, generally resulting in wells with high productivity. The magnitude of this projects demands accuracy in the estimation of the Original Oil-in-Place (OOIP) and a correct dynamic reservoir characterization of the production parameters.

The OOIP in Carbonate reservoirs is usually determined by static methods (volumetric methods) or dynamic methods (material balance and history matching reservoir simulation), depending on the quantity and accuracy of the available information. The average reservoir pressure is an important input data for dynamic methods, which is estimated by Pressure Transient Analysis (PTA), along with other reservoir parameters. A common practice to obtain average reservoir pressure requires well shut-in, leading to production loss and drowning risk in some cases.

On the other hand Advanced Production Data Analysis (APDA), also known as Production Data Analysis (PDA), deals with material balance and PTA at once. These methods are founded in the same analytical principals of PTA; however it focuses in the analysis of the pseudosteady-state reservoir flow regime, when well production reaches the reservoirs limits. It is possible to evaluate variable daily production flow rate and bottomhole pressures, based on the material balance concept. Nowadays the best-known methods are NPI Type Curves, Blasingame Type Curves, Agarwal-Gardner Type Curves and Dynamic Material Balance. All of them are available in commercial softwares.

Additionally, the focus of APDA research line changed from homogeneous reservoirs to hydraulic fractured well, horizontal wells, coalbed methane reservoirs and unconventional gas wells. Nevertheless, the naturally fractured reservoirs, such as carbonate reservoirs, were overpassed and they have been analyzed as homogeneous reservoirs. The relevance in naturally fractured reservoirs has not been fully evaluated yet.

Carbonate reservoirs are characterized by the presence of distinct types of porous media: matrix, fractures and vugs. Different mathematical models were proposed to describe their complex interaction using production data such as: dual porosity model, dual porosity/dual permeability model, triple porosity model and multi-porosity model. Nevertheless, the dual porosity model has demonstrated to match a surprising number of field cases and is still successfully used in petroleum industry. For this reason, and by the fact that daily production data is poorer is usually poorer than well testing data, dual porosity model was chosen for this work.

## Methodology

Dual porosity model considers the presence of two porous media: matrix and fracture system. Vugs (or microfractures in siliciclastic rocks) are usually considered to be part of the fracture system. Conceptually, there are two main interporosity flow models that describe the fluid flow from the matrix to the fracture system: Pseudosteady-state (Warren and Root 1963) and transient. In the first interporosity flow model, the interaction between matrix and fracture systems is described by two well-known variables: storativity ratio and the interporosity flow coefficient .

The derivation of APDA techniques from dual porosity model has the following assumptions, similar to homogeneous reservoirs:

1. Single phase fluid laminar flow.
2. Constant skin and effective permeability.
3. Measured flow rates and pressures are representative of the flow in the reservoir.
4. Well productivity is not affected by external influence.
5. Pseudosteady-state radial flow (no-flow boundary).

The following steps provide a general outline of the study:

1. Determination of the long-time approximate solutions of diffusivity equation for dual porosity systems, in a closed reservoir with no-flow boundary and constant flow rate. Consider the Pseudosteady-state and transient interporosity flow model.
2. Derivation of the Dynamic Material (Type Curveless) Method for Dual porosity system.
3. Derivation of the Blasingame Method (Type Curve) for Dual porosity system.
4. Validation by the use of synthetic data generated with a commercial numerical simulator for constant flow rate and variable flow rate.

## Model Validation:

The model validation was made employing synthetic data generated by a commercial pseudosteady-state data simulator (CMG-IMEX). The parameters evaluated were OOIP and reservoir parameters ( $k$ ,  $s$ ,  $\lambda$  and  $\Omega$ ) for pseudosteady-state (Model 1) and transient interporosity flow (Model 2). Reservoir parameters were also confirmed using a transient data simulator (Kappa-Sapphir). Both numerical models were built using the following general considerations:

- Dual Porosity system.
- Interporosity flow: Warren and Root model (PSS-IFM) or Kazemi Slab model (T-IFM).
- A circular reservoir with a vertical well placed at the center of the grid.
- Radial Grid with 30 logarithmic radial divisions.
- Single Phase Liquid fluid flow ( $P > P_b$ ).

**Case 1:** Constant flow rate: 300 BOPD and PSS-IFM. Production time: 106 days. Data point sampling rate: 1 day.

**Case 2:** Variable flow rate and PSS-IFM. Production time: 365 days. Production Schedule: Data point sampling rate: 1 day. Production plot: Fig. 1.

**Case 3:** Constant flow rate: 300 BOPD and T-IFM. Production time: 106 days. Data point sampling rate: 1 day. Generated with transient data simulator.

Production data for Case 1 and Case 2 was generated using CMG simulator. The generated data was first evaluated using DMB method (Fig. 2 and Fig. 3) and then using Blasingame TC (Fig. 4 and Fig. 5).

## Discussion

As can be seen in Fig. 2 (Inverse productivity plot), single straight line relation between the material balance time and the rate-normalized pressure drop indicates a boundary dominated flow (pseudosteady-state) in the reservoir. The use of the second derivative of rate-normalized pressure can assist in the estimation of the beginning pseudosteady-state of total system volume in Case 1. A daily production data does not show a pseudosteady-state of the fracture system, which may occur at the first or second day, and last few hours. A similar behavior can be observed in Fig. 3 (Case 2). The single straight line behavior corresponds to the same OOIP, and any point outside the linear trend represents a transient flow regime in the reservoir due to the several flow rate variations (including shut-ins).

In Case 2 (Fig. 5), the well shut-in and flow rate changes do not affect the good match with a single type curve ( $reD = 10000$ ). The fracture permeability calculated with both methods, was  $\pm 10\%$  compared to the reference value. The wellbore skin calculated confirmed a damaged well ( $s = + 0.54$  and  $+ 0.27$ ), with little variation with respect to the simulated model ( $s = 2$ ). In contrast, the application of single porosity APDA methods, for homogeneous systems, lead to error in the estimation of these variables. The fracture permeability with Blasingame TC is almost twice higher than the correct value, and the estimated wellbore skin by Dynamic Material Balance method is negative.

In addition, in Case 3 the Fig. 6 presents a good match of production data with homogenous reservoir behavior. Fracture permeability and wellbore skin shows a very good approximation with the real values. These results confirm the applicability of single porosity APDA methods to carbonate reservoirs with transient interporosity flow.

The OOIP can be determined faster than conventional material balance and similar precision. Conventional Material Balance is considered very accurate after an average reservoir pressure decline of at least 10% of the original reservoir pressure (Cosen-tino 2001). According to the results it is possible to determine de OOIP with average reservoir pressure drop  $< 3\%$  with APDA techniques.

The principal limitation of this approach would be the presence of wellbore dynamics (large wellbore storage, strong phase segregation and others). This effect could mask the dual porosity behavior, especially for high values of interconnectivity coefficient.

## Conclusions

After deriving APDA methods based on the dual porosity model the main conclusions are:

- Current advanced production analysis techniques are relevant only for reservoirs with transient interporosity flow between matrix and fractures. In fractured reservoirs with pseudosteady-state interporosity flow this approach could lead to error in the estimation of fracture permeability and/or wellbore skin.
- The dynamic material balance can provide a quick and correct estimate of OOIP for heterogeneous reservoirs. Wellbore skin ( $s$ ), could be estimated if the storativity ratio and interconnectivity coefficient are available from previous pressure transient analysis.
- A type curve method, in this case is Blasingame TC, can assist in the estimation of additional parameters such as storativity ratio and the interconnectivity coefficient in dual porosity systems with pseudosteady-state interporosity flow. For transient interporosity flow type curves, production data matches preferentially to homogeneous type curve.

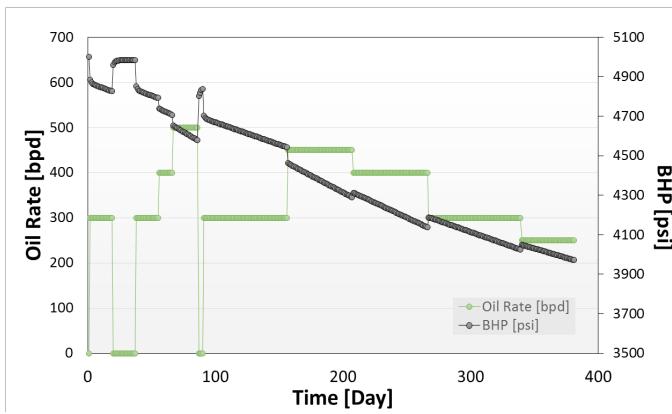


Fig. 1. Production History Plot. Case 2: Variable Flow Rate

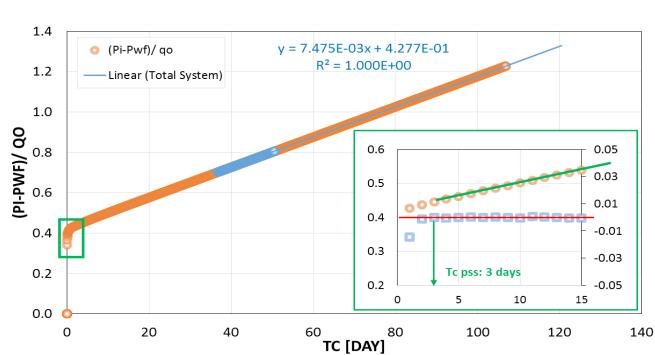


Fig. 2. Inverse Productivity Plot combined with its Second Derivative. Case 1: Constant Flow Rate.

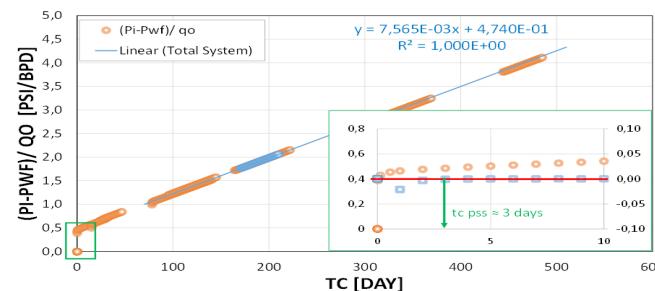


Fig. 3. Inverse Productivity Plot combined with its second derivative. Case 2: Variable Flow rate.



## Using Adversity to Drive Innovation in Reservoir Focused Technology

**John Ciccarelli** - Senior Reservoir Consultant, io oil & gas consulting

It is often said that ‘necessity is the mother of invention’ and there are plenty of examples of this, ranging from the eBook, which physicist Joe Jacobson created when he finished a book he was reading and realized he hadn’t brought another to Japan.

The oil and gas industry is no different. Philippe Charles, Senior Technical Advisor at Total, was quoted recently as saying “Bad economics can be a strong booster of technology”. However, this isn’t the first time that the oil and gas industry has seen hard times boost a technological revolution, for example, the late 1970s oil crisis brought about a huge increase in the number of patents created for development technologies. Today, the industry is going through another period of technological change. The result is both the emergence of new ideas and the better application of existing technology, bringing forth an integrated evolution. This is not about ‘cheap-and-cheerful solutions’ or bargaining a better deal on an FPSO; it is a re-think of convention coupled with a much better understanding of the subsurface, to bring about robust economic returns, even in deep water during a lower for longer, and potentially forever period of time for the oil and gas industry.

### Not Going for Every Barrel

Early in 2017, BP announced it would go ahead with plans for Mad Dog 2 in the Gulf of Mexico. The price tag on the project initially came in at \$22 billion in 2003 but has since been reduced by more than half to \$9 billion. Some savings are due to deflation in costs of services since the downturn, but this is only one part of the story. The real savings came about when BP went back to the drawing board and found an economic solution that differed from its original strategy to try and produce every barrel. Initially when BP revisited the development they planned to produce about 90% of the resource for 66% of the original development cost. Then, using a combination of technology and planning, they expect to recover 100% of the resource for 50% of the original development cost.

BP believed Mad Dog 2 would not have been economically viable without the use of four key technologies: “seismic imaging and processing along with an ocean bottom node survey for understanding the reservoir, immobile prop pants to maintain the sand pack in injection wells, low-salinity water injection to boost recovery rates, and lazy wave risers to decouple the motion of the risers from the vessel and improve the fatigue life of the risers.” Most striking is that all, except the last, of these innovations are reservoir focused technology. This utilization of innovative reservoir techniques will only continue to propagate as necessity demands better solutions. Once considered as exotic and expensive solutions, reservoir-centric technologies like low-salinity water injection, will only reduce in cost with time, as Wood Mackenzie notes.

### Profiting from “Downhole Jewelry”

On the face of it, smart wells appear to be the way forward. However, without conditioned objectives or adequate tools to digest the wealth of data, there is a risk of overwhelming day to day operational decisions. Modern wells are laden with more sensors and control than ever before. An example would be Tallow’s TEN (Tweneboa, Enyenra, and Ntomme) field in Ghana, West Africa, where its development plan was driven by operational requirements and the need to monitor and control. Tallow chose smart wells equipped with “downhole jewelry” which allows zone by zone monitoring and control. This enables close observation and optimization of operations by producing, injecting or isolating zones using sliding sleeves as frequently as desired and limited only by the turn-around time of the reservoir engineer. The future of these digital oil fields will be a truly integrated solution whereby all constraints from every discipline can be reduced to a complex objective function, which can be used to drive operational decisions in accordance with the defined value drivers. These operational decisions must therefore be made with a holistic view of the field. Short-term problems causing downtime, such as leaks and safety concerns could be managed alongside medium-term challenges such as effective zonal drainage and pressure depletion. Long-term applications will proactively use the information to maximize recovery and determine the best future well locations, completion workovers and further CAPEX investment. Taking a continuous approach to what-if analysis brings the next level strategic approach to reservoir management. We can only wait in anticipation that this will lead to an emphasis on effective multidisciplinary teams.

### Starting with the End in Mind

Reservoir focused technology enabled a bold set of ideas to create an economic field development plan for the Libra field, offshore Brazil. This is one of the largest of Brazil’s offshore pre-salt plays containing 7.9-15 billion barrels of oil. One major challenge to developing this field was the 45% CO<sub>2</sub> production gas. Flaring the gas was not an option, neither was piping the gas to shore, given the 200 km distance. The solution was to put the CO<sub>2</sub> back into the reservoir. Whilst it might seem an expensive solution at first glance, the reinjection will increase recovery and keep costs below \$35 per barrel.

Reservoir studies allow the injection of gas to take place in optimized cycles, and maximize benefits from the miscible zone of CO<sub>2</sub>, to increase reservoir sweep and recovery. Usually CO<sub>2</sub> Water Alternating Gas (WAG) is expensive and uncommon offshore; on Libra, costs were reduced by using the same injection line to push water and CO<sub>2</sub> into the reservoir and use reservoir pressure to reduce the load on facilities in the gas-oil separation process.



# Soft Skills

## From Our Oilfield Adventure to the Quixote Windmill



Cesar Patino

South America and Caribbean SPE  
Region Director.

Today, every challenge that our hydrocarbon industry brings us requires us to arm ourselves with the armor, the passion, the courage, the hope, and the optimism of being part of this industry, of our O & G sector.

Waking up every day, looking for the optimization of processes, analysis of current projects and future proposals to find the most of what could be generated from each corner of our knowledge, a requirement that we must make our knowledge know.

Several information libraries have passed through our minds and the selectivity of the need for each moment has allowed us to develop each of the skills that we impose on our daily work.

But our work not only requires a professional with skills, it requires a human being who ventures into the different experiences of personal growth, a personal growth that must carry with it a series of objectives, which must be positive, depending on our capacities and challenges, that stimulates us, and that is measurable of what we want.

But for each one of us, all of this must be based on a clear identification of our strengths and weaknesses, which carries with it a self-knowledge, because it will allow us to understand, what is provided, what empowers us and what skills require improve ourselves to develop. This constant improvement will drive us more and more to a capacity for self-motivation, contributing to personal growth and development of oneself.

To manage to maintain and develop an emotional intelligence will conceive opportunities of success, because the balance in the decisions under certain conditions of the emotions, will allow the transfer to the following levels that as human beings we want to take. We cannot allow the imbalance that a person, group of people, tool, process or project imprints on us, take and take out of our boxes, each of our guidelines or guidelines that are conceived in each of our spirit aligned with the values and principles.

And this is where I wanted to make a comparison with the remembered and read piece of world literature of Quixote de la Mancha, where we could extract a simile by reading the following quote from the book:

"In this, they discovered thirty or forty windmills in that field, and, just as Don Quixote saw them, he said to his squire:

-The venture is guiding our things better than we could to desire, because you see there, friend Sancho Panza, where thirty, or few more, unbridled giants are discovered, with whom I intend to do battle and take away all lives, with whose spoils we will begin to enrich; that this is a good war, and it is a great service of God to remove such a bad seed from on the face of the earth.

-What giants? Said Sancho Panza. "Those who see there," his master replied, "of the long arms, which are usually held by some two leagues. "Look, your worship," answered Sancho, "that those who resemble each other are not giants, but windmills, and what look like arms in them are the blades, which, turned by the wind, make the millstone walk."

"Well, it seems," replied Don Quixote, "that you are not in this business of adventures: they are giants; and if you are afraid, get out of there, and put yourself in prayer in the space that I am going to enter with them in fierce and unequal battle."

And, saying this, he gave spurs to his horse Rocinante, without paying attention to the voices that his squire Sancho gave him, warning him that, without a doubt, they were windmills, and not giants, those he was going to attack. But he was so set that they were giants, that he did not even hear the voices of his squire Sancho, nor did he see, although he was already very close, what they were; before, I was saying in loud voices:  
-Non fuyades, cowardly and vile creatures, that a single gentleman is the one who rushes you." Miguel de Cervantes

What a great piece that exposes us to different realities that we as human beings and professionals could have in our day to day, in our jobs, in large operations, big projects, with great personalities, with great new technological trends, with a desire to lead to change, to impose, to make us feel.

How important it is to carry the principle and value that each one as a human being can cope with, with the utmost care to always listen to the other, to respect the ways of thinking, to value the difference of the other, and to feel in progress an opportunity to continue building and inspiring the best. Go ahead, always ahead, with the goals that the environment and time can incorporate us, here we are ready to cope with our values the goals and challenges that these moments can give us.

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