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SandRose

Magazine



Kingdom of Saudi Arabia Section



SPE KSA
Section

**REDEFINING
RESILIENCE**

CONTRIBUTORS

JUNE 2024 ISSUE

EDITOR-IN-CHIEF

Yazeed Aldughaither

Editorial Advisor

Reem Alsadoun

Managing Editor

Nouf Alsaad

Creative Advisor

Anas Ruhman

Graphic Designer

Sara Sami

behance.com/sarasami

Instagram @agirlfrombahrain

Cover Design Artist

Created by Norah Alsuairey

Instagram @NorahDesignCo



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Letter from

THE EDITOR-IN-CHIEF

Dear reader,

As we look past our first issue of the term on The Future of Mobility, we now cast our gaze forwards towards Redefining Resilience. Over the course of the past few months, our dedicated editors and diverse contributors tackled the notion of resilience from multiple dimensions: from personal to institutional, from one generation to another, and across a variety of industries and domains.

Much discussed and ingrained in the modern zeitgeist, the concept of resilience delves into what it takes not only to survive, but to recover and thrive in the face of adversity. In today's fast-paced world, individuals, businesses, and governments are confronted with an increasingly complex, interdependent, and often volatile landscape. In order to succeed in these trying conditions, we put resilience under the microscope and probed its anatomy.

In this edition, we are delighted to feature an interview with Saudi Aramco's President & CEO, Mr. Amin Nasser in collaboration with the company's Young Leaders Advisory Board (YLAB). In this conversation, Mr. Nasser candidly delves into his own perspectives and formative experiences that have garnered his own sense of resilience, shares some insights into Aramco's response to past setbacks, and offers advice for young professionals navigating their own careers.

The SandRose team was thrilled to interview Ms. Noor Shabib, currently serving as the Chief Transformation Officer (CTO) at King Faisal Specialist Hospital & Research Center. Ms. Shabib's distinguished career has

taken her from working in remote areas as the first Saudi female field engineer with SLB all the way to shaping the strategic approach of some of the Kingdom's most prominent institutions in her time with the Saudi Industrial Development Fund (SIDF) as Vice President of Strategy. She shares her own valued perspectives on growing through difficult situations, navigating the modern workplace, and leveraging gender differences for success.

Beyond that, we are also pleased to feature a multitude of technical articles and personal perspectives from our community and beyond, along with some highlights from the first year of the current SPE-KSA Executive Board. As the largest SPE section globally, our membership volume is only outmatched by our ambitions to go above and beyond in enriching our members' experiences, creating a lasting positive impact to our community, and broadening our horizons in the context of an ever-evolving energy landscape.

I would like to extend my deep and sincere gratitude to each and every one of our varied contributors, who span a vast range of backgrounds both professionally and in virtually every demographic facet. Our work would not be possible without you, and it is first and foremost for you. To our valued sponsors, editors, and readers: thank you for being part of our undeterred drive to develop our members' technical and business acumen, share knowledge and experiences, and connect our community. You are the engine of our progress and motivation.

I hope you thoroughly enjoy perusing our inaugural issue, and I encourage you to reach out to our team to offer your unique perspectives, feedback, and contributions. [SR](#)

Kindest regards,

YAZEED ALDUGHAITER, EDITOR-IN-CHIEF
SPE-KSA Executive Board (2023-2025)

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Chief Editorial Advisor



NOUF ALSAAD
Managing Editor



RAWAN ALDOSSARY
Editorial Advisor



DANNA KHATTAB
Editorial Advisor



RAHMA ABDULAL
Senior Editor



BASMAH ALOTAIBI
Senior Editor



MUSTAFA KIDWAI
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NORA HAMIDADDIN
Senior Editor



RAYNA ALBEEESH
Associate Editor



GHALIA ALSHANBARI
Associate Editor



MOHAMMED MAIDAN
Associate Editor



DEEMA ALBEEESH
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HATIM ALTARTEER
Associate Editor



MOHAMMED ALOTAIBI
Website Lead



YARA ALSINAN
Associate Editor



ELISA ALZAYER
Associate Editor



Letter from

SPE-KSA EXECUTIVE BOARD

Dear valued reader,

As we press on with our 65th anniversary, we forge a new path forward with a renewed drive to build upon SPE-KSA's illustrious legacy. We take on this journey as we welcome new members that have propelled us to yet another membership record, at over 12,000 professionals and students.

Our renewed focus is further honed by a refresh of SPE-KSA's strategy, marked by our mission to empower a community of connected energy professionals through comprehensive skill development, fostering their ability to lead and innovate, and driving the advancement of the industry.


Looking forward to our esteemed section's promising future, we envision SPE-KSA to be the leading organization in an evolving energy industry, by empowering, connecting, and advancing energy professionals while transcending our commitment towards our community in the Kingdom of Saudi Arabia.

In the energy industry, we have seen tremendous successes, ground-breaking discoveries, and revolutionary breakthroughs over the years. Within this shifting landscape, we prioritize our leadership in the energy sector, establishing a standard for sustainability, and spearheading the digital revolution at SPE-KSA. Through fostering a dynamic community that values information exchange, social responsibility, and

teamwork, we cultivate an atmosphere that fosters innovation and excellence.

We would like to express our sincere gratitude to everyone who has supported us throughout the years, both past and present, as we celebrate these decades of contribution to our industry and community. We express our gratitude to SPE-KSA's sponsors, supporters, members, and volunteers for their unwavering support, enthusiasm, and priceless contributions, all of which have helped us advance and leave a lasting impression on the energy sector. As a team, we endeavor to honor the tradition of excellence that characterizes the SPE-KSA section while also influencing the future and inspiring upcoming generations.

In this edition of SandRose, we are pleased to present diverse articles, highlighting key events and introducing new and revamped flagships that align with our mission, such as NMO, Growth Quest, Spectrum, and ROSHD. As our SPE-KSA family grows, we are delighted to shine a spotlight on our activities from our various committees.

I would like to extend a warm welcome to you on behalf of the Executive Board members for the exciting launch of SandRose Magazine's second edition for this term. I want to sincerely thank the SandRose team and all of the contributors for their diligent efforts in developing this issue. As we continue on our wonderful journey together, I look forward to sharing new ideas, stories, and achievements with our growing and resilient community. 

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Years of Excellence

Celebrating 65 Years of SPE-KSA

As we look back towards our rich legacy at SPE-KSA on our 65th anniversary, we take this as an opportunity to acknowledge and honor our past Chairpersons of the last 20 years. The heights of our achievements would not have been possible had we not stood on the shoulders of those who have paved the way before us. As we take stock of our current programs, we endeavor to hand over the greatest iteration of SPE-KSA to our successors, the product of decades of dedication, selfless service, and continuous refinement.

**MR. SYDNEY
D. BOWERS**
1968 - 1969

**MR. BERT H
GOLDING**
1969 - 1970

**MR. JOHN
H. HOKE**
1970 - 1971

**MR. RICHARD
E MARTIN**
1971 - 1972

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R MCINTOSH**
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1979 - 1980

**GRANT E ROB-
ERTSON PHD**
1980 - 1981

**MR. DONALD
G HATCH**
1981 - 1982

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H AL-AWAMI**
1983 - 1984

**MR. JERRY
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1984 - 1985

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1985 - 1986

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A KASNICK**
1986 - 1987

**MR NADEEM
PARVEZ**
1987 - 1988

**MR. KENDALL C
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1988 - 1989

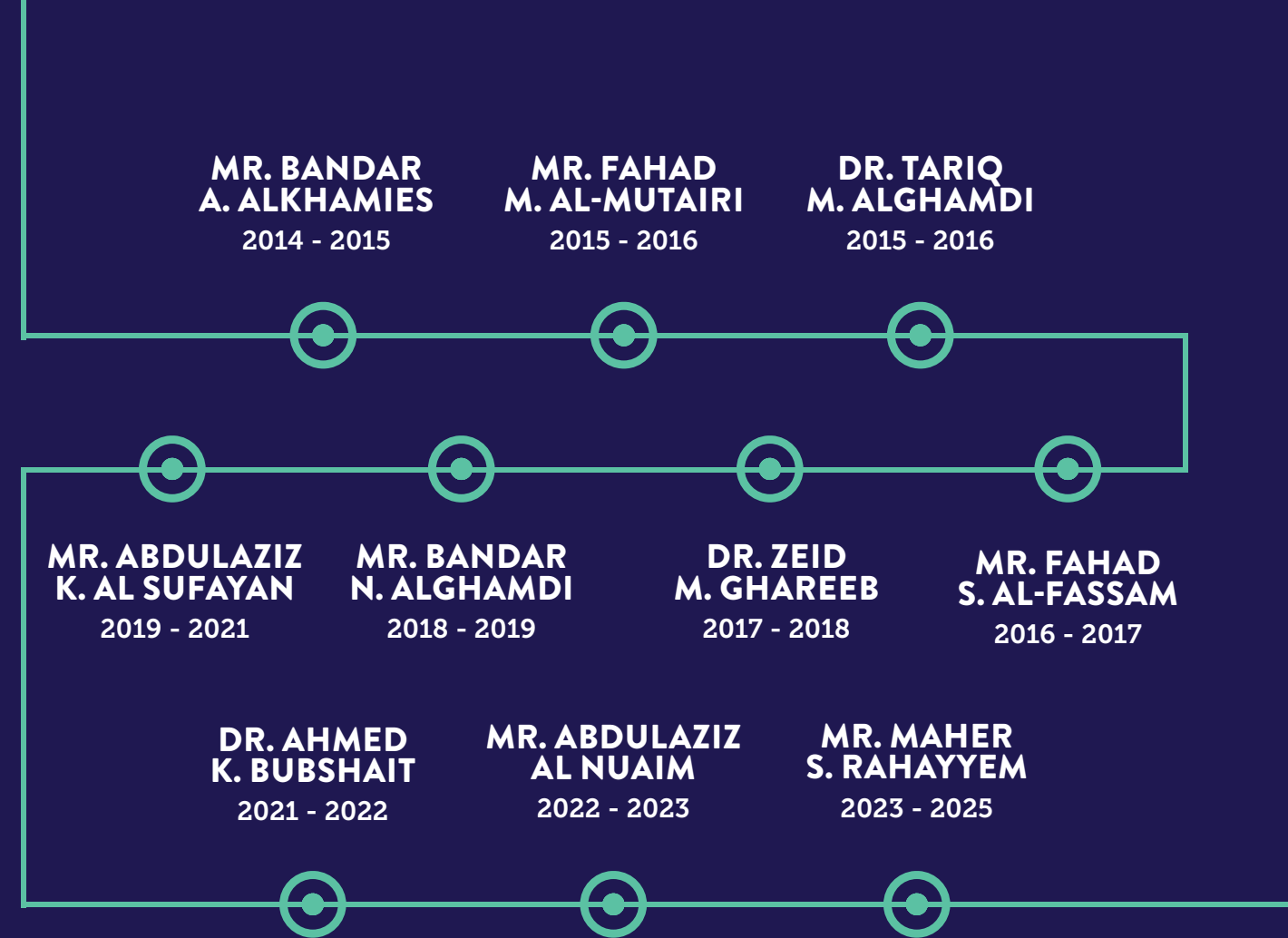
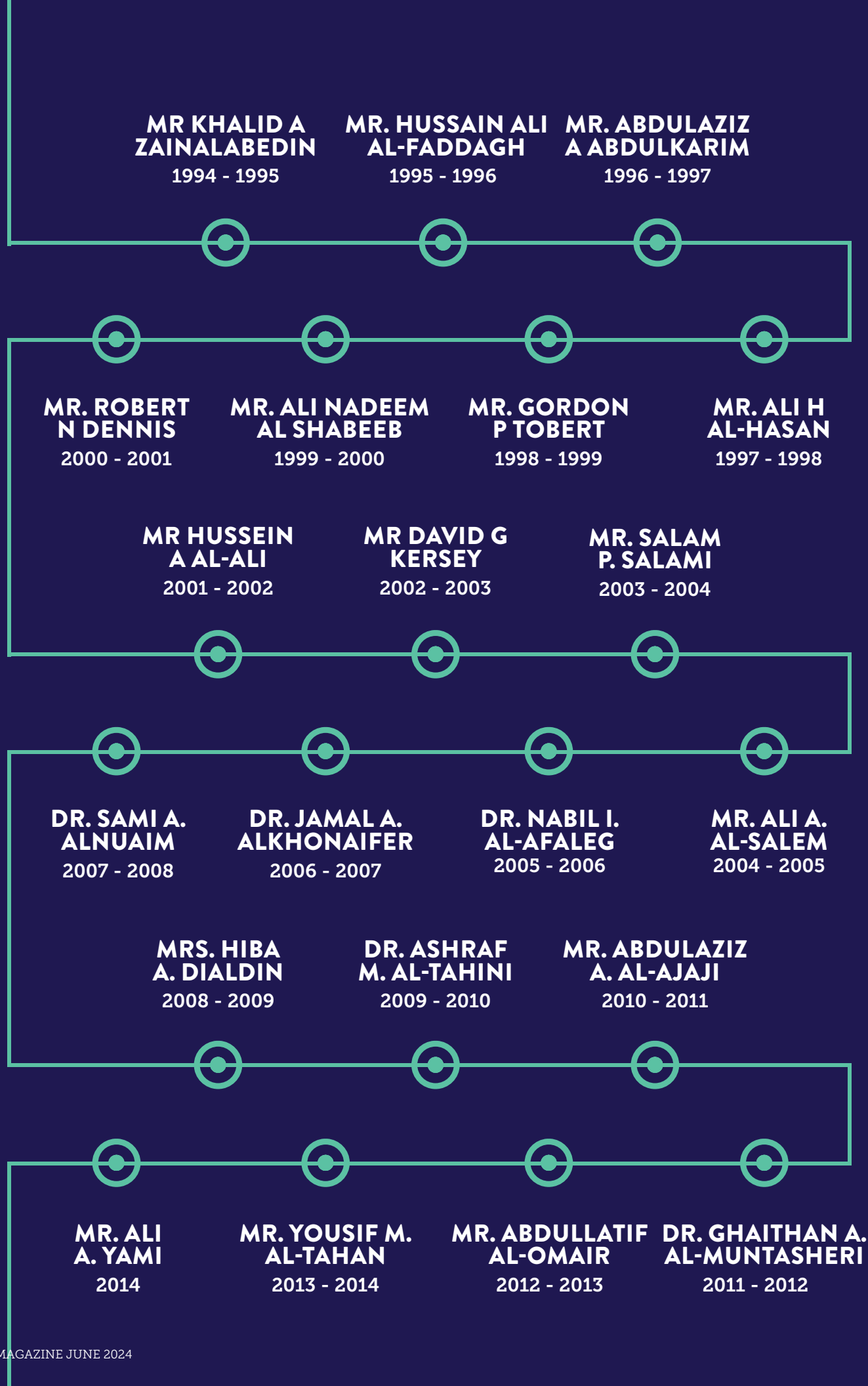
**MR CHRIS
NEALE**
1989 - 1990

**MR. JAMES
PHILIP SIZER**
1993 - 1994

**MR. ABDULLA
I AL-KUBAISY**
1992 - 1993

**MR SAAD
A TURAIKI**
1991 - 1992

**MR. MOHAMMED
HASHEM AL-KHATIB**
1990 - 1991



AMIN NASSER INTERVIEW

**Amin H. Nasser is the
President & CEO
of Saudi Aramco**

*This interview is a collaboration between SPE-KSA and
Aramco's Young Leaders Advisory Board (YLAB)*



How do you define personal resilience?

I see resilience as the ability to overcome setbacks quickly. A resilient person is not just a persistent individual, but also someone who learns from challenges and builds up a mindset to deal with setbacks. And I think resilience comes down to two basic qualities: flexibility and strength. Being adaptable and quick thinking on your feet and at the same time having a strong sense of purpose in order to guide you through difficult situations. And I believe if you want to be resilient whatever your work or profession, you have to learn how to manage stress and be decisive.

What are some of the career experiences that helped you develop your own sense of resilience, and what did you learn?

I have been fortunate that I have had quite a lot of opportunities and also the experiences to build personal resilience during my career. Part of this comes from my interest to always try to challenge myself. For example, during my early years at Aramco, I purposely chose an offshore assignment. I received good advice from more experienced colleagues who had told me that as a petroleum engineer I would learn more offshore than on any other remote assignment. I am glad I listened as they were right, proving experience is just as valuable as education. Anyway, it was not the most convenient or comfortable option and it was certainly not the easiest option. But facing difficulties and learning to manage challenges during various situations is a great way to build your resilience.

Looking at Aramco now, I see many young employees are also out in remote areas. It isn't the most glorious posting. It is tough work. They have to do some heavy lifting, literally. And often in very high temperatures. They are also disconnected from family and friends and away from the excitement and comforts of modern city or urban lifestyle. But each one of these individuals is taking on these challenges is also developing a more resilient mindset that will serve them well, both

professionally and personally. As a result, they will almost certainly excel beyond other individuals of their generation who lack resilience.

How do you view Aramco's resilience and what are the factors underlying this institutional resilience?

The attacks on Aramco facilities in Abqaiq and Khurais in September 2019 by far are the most compelling example of our resilience. And when I say 'our', I am referring to the resilience of our leaders at all levels as well as the resilience of our company and also the resilience of our assets. In terms of the attacks, once the world heard what had happened and saw the aftermath, if you recall when the oil markets opened for trading that week, prices jumped by double digits. Some out there predicted it would take us months and years to recover. What they underestimated and what the world didn't yet properly appreciate was the resilience of Aramco.

Thankfully, there were no serious injuries or casualties. And then production resumed at Khurais within 24 hours and Abqaiq shortly after. Additional people, equipment and resources were also brought in from other parts of the company which helped accelerate the recovery. As a result, in just 11 days we were back to pre-attack production level, and we ensured that not a single shipment to any of our international customers were missed or canceled.

Our rapid and full recovery was only possible because of the resilience of our leadership at all levels of the organization. People were empowered to make rapid decisions, were well-trained and knew exactly what to do in a split second and moment. Our organizational resilience was put to the test. Over the last few years we had built a localized supply chain that meant equipment and resources could be brought in quickly. I will also give credit to our asset resilience, and by this, I mean we had the right systems, the right emergency



response procedures in place and the right people who had been trained to put into practice what they had learned during such moments. Also, our equipment and facilities were well maintained, so everything worked as intended when it was needed the most. For example, the Abqaiq facility processes over half of our daily crude output and it is equipped with a safety system, which was used to divert most of the fuel away from the fire when the attacks happened.

“What they underestimated and what the world didn’t yet properly appreciate was the resilience of Aramco.”

The world was watching and we delivered. I should add that these attacks and our recovery also came at a time when our company was already under more global scrutiny than ever before given our initial public offering (IPO) was set to happen just a few months later. Again, some people underestimated Aramco’s resilience as the attacks did not derail our IPO as they had predicted.

Finally, do you believe that resilience is different between the generations?

I do think people’s resilience is influenced by the challenges their particular generation faces, so therefore it is natural for there to be some differences. But that said, the core of resilience remains the same: adapting to and overcoming disappointments and challenges, all of which are a normal part of life.

Now when it comes to developing leaders, I also believe resilience is critical to good leadership. Indeed, becoming more resilient does not only help shape your character but also potentially your career. This is particularly true today as many people, many professions, many companies, and many industries are facing significant and evolving challenges.

Consider the rapid rise of Artificial Intelligence. It has been estimated that AI could increase global GDP by 14% by 2030. And it has the potential to transform entire industries as well as the jobs of millions of individuals with more than half of all companies having

implemented generative AI in some areas of their business. I have also seen predictions that AI will create more jobs and new roles than it replaces. So clearly, AI is having and will continue to have a big impact and as a result it will also create opportunities for resilient people.

“AI is having and will continue to have a big impact and as a result it will also create opportunities for resilient people.”

Another challenge is climate change. In the energy industry, we are facing growing pressure to find more ways to reduce carbon emissions. At the same time, we are also expected to continue to do what we have done for decades, namely to supply reliable, safe, ample, and affordable energy for the daily benefit of billions of people around the world.

The simple reality is that there is no other industry in the world that contributes as much to human progress, to travel and to trade. The other reality is that oil and gas cannot be replaced quickly and will remain a key contributor in the global energy mix for decades to come. All of which means energy is the industry where people should go to work if they want to have the greatest impact on humanity and the greatest opportunity to help find solutions to address climate change. Of course, they will need to be resilient to succeed in this business.

“The simple reality is that there is no other industry in the world that contributes as much to human progress”

Young Leaders
Advisory Board



Examining the Resilience of the Oil & Gas Industry

By the SandRose Editorial Team

Ever since the commercialization of oil and gas through the drilling of the Drake well in Pennsylvania in 1859, hydrocarbons have become a cornerstone of the global economy. While most may only consider their applications as fuels and sources of power, our modern lifestyle is one that is fundamentally reliant on hydrocarbon products for the production of materials such as plastics, steel, and cement, not to mention their instrumental role in enabling other crucial endeavors such as agriculture and food production, pharmaceuticals, and all manner of consumer products.



"This expanding middle class is expected to generate a higher demand (on both a net and per capita basis) on consumer products, fuels, and power compared to the current figures."

As hydrocarbons have become deeply ingrained within the quality of life we have become accustomed to, the industry has also been heavily scrutinized as climate change has been catapulted into the forefront of global debates on policy and governance. While there is no denying the importance of tackling climate change head on, a sober perspective is required to appreciate the role that hydrocarbons play in a sustainable future for all. As an industry that is notorious for its cyclic downturns, and in the face of this mounting questioning, how will it showcase its resilience and relevance on the global stage in the decades to come?

The foundation of this debate is predicated on a few key pillars, the first of which is the basic economics of supply and demand. On the demand side, the current global market for hydrocarbons is estimated at slightly over 100 million barrels per day (bpd). While there is some contention in regards to which direction this figure is likely to move in the future, there are a few realities that can begin to elucidate the answer. The main drivers of any decrease in demand are mainly a function of (a) policy changes favoring alternative sources of power, fuel, and materials, (b) efficiency improvements in technologies relying on hydrocarbons (such as the internal combustion engine), and (c) disruptive technologies that may create a substantial difference in the levelized cost of energy from non-hydrocarbon sources.

Historically speaking, the net result of these factors has not yielded any substantial or long-lasting diminishment in global demand. On the other hand, there are several compelling drivers of increased hydrocarbon demand. The global population is poised to increase by approximately 2 billion people by 2050. The bulk of that increase will come from an expanding middle class primarily from Asian and African markets in countries with rapidly growing and industrializing

economies, often referred to as the global south. This expanding middle class is expected to generate a higher demand (on both a net and per capita basis) on consumer products, fuels, and power compared to the current figures.

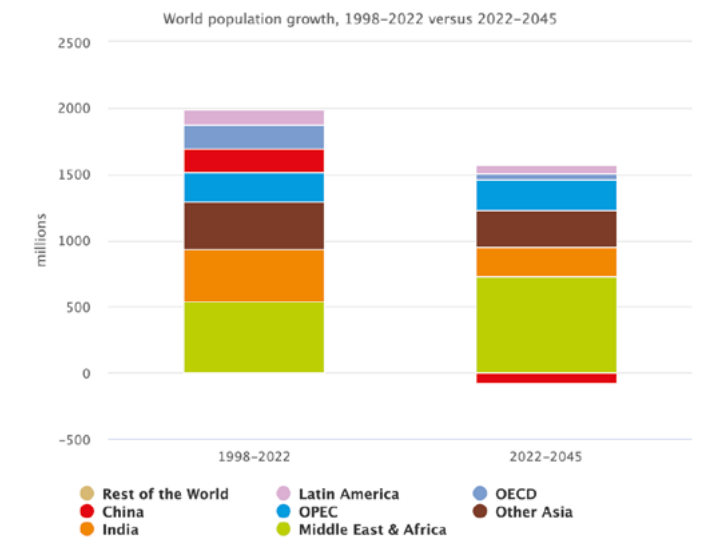


Figure 1: World population growth 1998-2022 vs 2022-2045 (source: OPEC/UN)

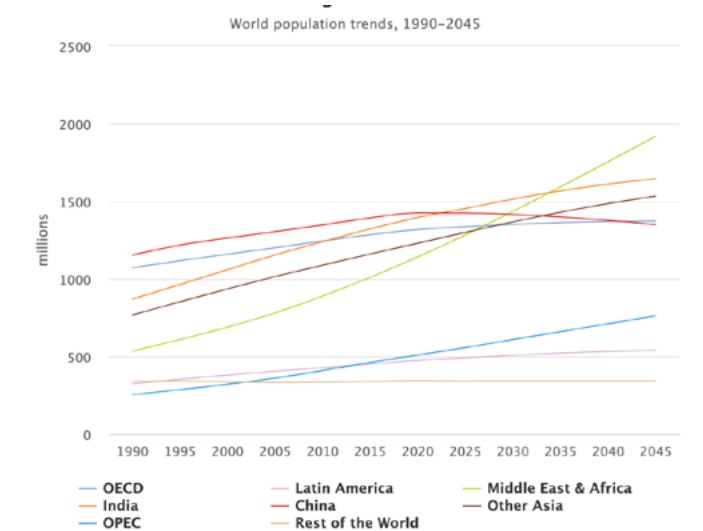


Figure 2: World population trends by region (source: OPEC/UN)

Examining the supply end of the equation, there have been a steady slew of new hydrocarbon discoveries across different geographies, especially in the Middle East with many of the world's highest volume producers. Not only does almost half of the world's supply come from this region, but the average production costs also tend to be lower compared to the global average. This trend is unlikely to change in the near future as technology supports ongoing exploration efforts, and by raising the proportion of economically recoverable resources from existing fields.

In most western (or global north) economies, as exemplified by the OECD block, there is a contrast in terms of policies that encourage or subsidize renewable energies over hydrocarbons. Despite forecasts of increasing energy demand, most western nations have observed declining investments in the upstream sector. Conferences such as the annual COP have become a hotly contested battle ground for the debate on what path should be taken towards a sustainable future. What has become clear is that there is no one-size-fits all approach for all countries looking to manage their emissions while still providing for their citizens in a manner that is sustainable, affordable, and accessible (hence the energy trilemma).

"There is no one-size-fits all approach for all countries looking to manage their emissions"

This also begs the question of how to equitably finance the energy transition for all countries. This is a particularly controversial point, considering the global north has historically benefited the most from hydrocarbons, and therefore arguably bears the burden of a higher proportion of cumulative emissions. While some analysts and policy makers see a rapid transition to renewables as the answer, other voices in the conversation see hydrocarbons as a long-term primary component of the transition. They see the transition as more of an energy expansion, welcoming other sources of energy including renewables, while offsetting or otherwise managing the emissions associated with hydrocarbon production and utilization.

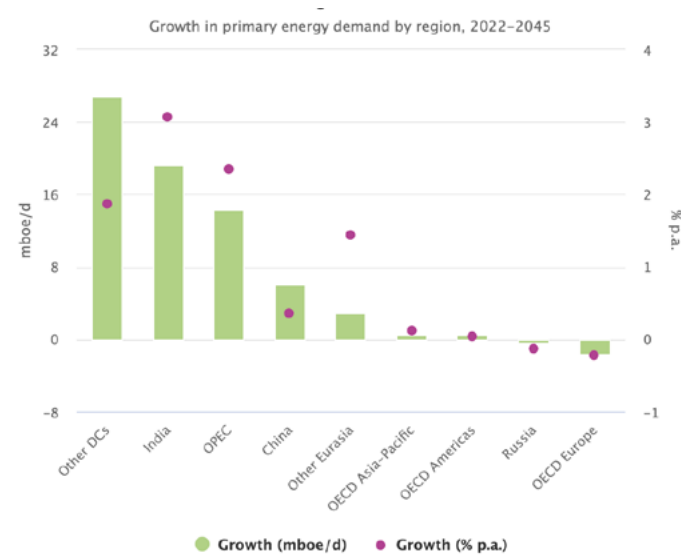


Figure 3: Growth in energy demand by region (source: OPEC)

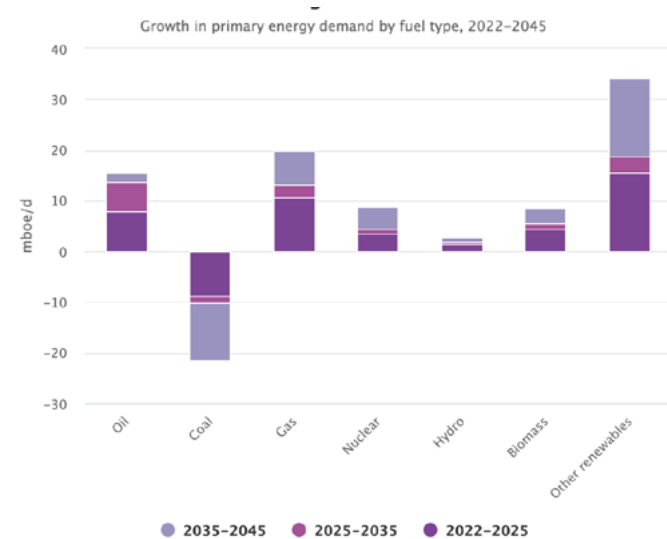


Figure 4: Growth in energy demand by fuel type (source: OPEC)

As mentioned previously, the oil and gas industry is no stranger to downturns and has experienced many different varieties of setbacks: from near-zero prices during the pandemic, intentional attacks on facilities such as pipelines and refineries, to wide-sweeping financial crashes such as in 2008. Each of these setbacks has taught those in the industry painful and valuable lessons. The common element across each of these varied challenges is that the industry has bounced back from each and every one of them. While individual

"The oil and gas industry is no stranger to downturns"

setbacks, especially black swan events such as the pandemic, are difficult if not impossible to predict, what is certain is that there will be more difficulties to come. While the industry may be susceptible to financial crashes and the volatility of the market, it has invariably pulled through these challenges because the alternative is a non-starter: if the world could move forward without hydrocarbons, it would have done so by now.

"If the world could move forward without hydrocarbons, it would have done so by now."

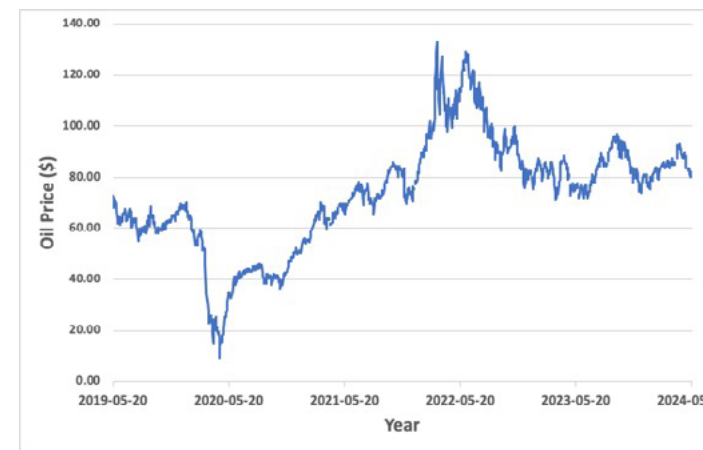


Figure 5: Oil prices 2022-2024 (source: Business Insider)

Beyond the irrevocable necessity of hydrocarbons for powering our world and providing us with the quality of life that has become normalized in the 21st century, the oil and gas industry's resilience has also been supported by its own intentional evolution. From an operational perspective, the industry utilizes some of the world's most complex and interconnected supply chains. This was heavily disrupted by the pandemic, and yet several key players such as Aramco adapted largely thanks to localization programs such as iktva. Elsewhere, some supermajors have opted to expand their portfolio to extensively feature renewables. Most supermajors have also pursued more robust integration across their value chain, starting with upstream, to refining, all the way to retail refueling stations that often feature electric

vehicle (EV) charging infrastructure. Industry stalwarts such as Aramco have also made immense investments towards diversification through their venture capital fund, Aramco Ventures, which features several ventures well beyond the scope of the industry itself

The oil and gas industry has a hefty task on its shoulders. It is expected to provide fuel, power, and materials to meet the growing needs of a global population that is simultaneously erupting in size all while placing heavier expectations on the industry's expedited action in response to climate change. Those with a broader perspective of not only the industry, but also the makings of the 21st century quality of life will have realized that (a) the world is not yet prepared to step away from hydrocarbons, and (b) the world does not have a hydrocarbons problem, but rather an emissions problem..

"The world does not have a hydrocarbons problem, but rather an emissions problem."

A more sustainable solution to the current energy trilemma and transition should therefore involve sufficient upstream investment on a global scale. For this to be successful, there should also be continued expansion in renewables, and in emissions management technologies such as direct air capture (DAC). The key to a successful transition lies in a multi-modal, multi-speed approach that allows for the necessary flexibility for each country to tailor its own solutions for itself. This can only happen in the context of global cooperation across investment, technology, and policy domains in a manner that recognizes the world's shared interests and prioritizes them over short-term gains.

"The key to a successful transition lies in a multi-modal, multi-speed approach that allows for the necessary flexibility for each country to tailor its own solutions for itself."

Noor Shabib Interview

Noor Shabib is the Chief Transformation Officer (CTO) at King Faisal Specialist Hospital & Research Center



Would you please give us an overview of the various roles and milestones in your professional career so far?

I earned a Bachelor's degree in Computer Engineering from the American University in Sharjah (AUS). Then I began working at Schlumberger (SLB) Drilling & Measurements (D&M) as their first Saudi female field engineer in 2003. That role involved work in varied locations and cultural settings such as Malaysia, UAE, India, and Australia. Work stints included weeks on off-shore rigs.

I later obtained an MBA from the University of Oxford in 2008 and joined Rawabi Trading & Contracting in Khobar as Deputy Services Manager. I later joined Saudi Aramco in 2011. In my 6-year tenure at Aramco, I took on various roles within Petroleum Engineering, the Young Leaders Advisory Board (YLAB), Strategic Planning Department, New Business Development, and the Strategic Partnerships Office.

In 2012 I co-founded the Qudwa non-profit group which aims to foster dialogue and raise awareness about gender differences in the workplace. Qudwa ran for six years and grew to over 5,000 members, 77% of whom were men. Qudwa conducted over 60 dialog events and workshops, established mentorship programs for young women, which were later adopted by Aramco's Diversity & Inclusion Division. I also obtained a second Master's degree in Oil & Gas Leadership from the Graduate Institute of Geneva in 2013, and then was inducted as an Eisenhower Fellow in 2015.

Later on, I joined the Center for Strategic Development in 2017, which is a semi-governmental think-tank whose mission is to provide decision makers with evidence-based research on socio-economic development issues under the Ministry of Economy & Planning. In 2018, I moved to the Saudi Industrial Development Fund (SIDF) as Vice President of Strategy & Business Development where I led the strategic transformation of the fund in alignment with KSA's Vision 2030. Last year, I assumed

my current role as the Chief Transformation Officer (CTO) of King Faisal Specialist Hospital & Research Center.

What is your personal definition of resilience?

I see resilience as the ability to be self-driven and self-motivated when things are very difficult, to go on despite what is happening around you, and to pick yourself up and keep going when the world seems to knock you down.

Could you provide an instance from your life where you demonstrated resilience?

I don't know if it's considered exceptional resilience, stubbornness, immaturity, or just not knowing any better at the time. When I was about 24 and working for Schlumberger D&M I was assigned to work in India. Living in India was a great experience, and it's a country I suggest everyone should visit at least once in their lives. Having said that, it was tough. The culture was very different to mine; the values and standards were very different from what I was used to. Those two years, I poured all my effort into my work. I had zero balance in my life, work was my whole life, and work was hard.

We used to work 3 weeks on and 5-10 days off on average. My longest stretch on a rig was in India, I did 7 weeks, most of which were night shifts. That was tough. It was tough physically and mentally. On the physical side, the quality of sleep you get during the day is not the same as that which you get during the night. Imagine doing that for 3 or 7 weeks straight; your body is exhausted. On the mental side, the oil field is the second most dangerous place to work, after a nuclear power plant. It is a very high stress environment due to safety risks and high costs.

Back in the early 2000's, the daily rate of a rig was around \$500,000, that means every minute wasted cost the client around \$350. Time is money. Decisions need to be made quickly, safely, cost effectively, and with little sleep. I guess resilience is that I survived to tell the tale. Reflecting on that experience, I'd say that staying on mission, preserving your core values, and adapting in an alien environment is one facet of resilience.

Throughout your career, you have demonstrated a capacity to thrive across a variety of roles, organizations, and market domains. To what do you attribute your success in such varied environments?

I think the desire to always be better than yesterday. When I was working for Schlumberger, I loved certain things about it: the excitement, the travel, the culture, the professionalism, the high standards, the focus on developing people and growth, to mention a few aspects. I am beyond grateful to them; they raised me professionally. They gave me the foundation on which I built everything else, however, drilling wells was not my calling.

My goal was to love my job, I wanted to wake up every morning excited to go to work. I didn't know where I wanted to go but I knew I wasn't where I wanted to be. I didn't. That was the start of my self-discovery. Many people told me this was not possible. That a job is a job, and I should just accept it.

"I wanted to wake up every morning excited to go to work."

11 years, 2 master's degrees, and 3 organizations later, including numerous successes and failures through trial and error, I can tell you I love my job because it is the intersection of my strength, what I love, and what is needed. Luckily, someone is willing to pay me for

it, and that is the definition of purpose. So, in a sense, staying open to learning from each work or cultural setting and setting eyes on what else can be gained in terms of knowledge and practical experience is key to adaptation, but also priming one's senses to what else is out there is important.

"I can tell you I love my job because it is the intersection of my strength, what I love, and what is needed."

How do you define strategic thinking, and how do you approach it?

Strategic thinking for me is setting an ambitious goal and methodically contemplating how to achieve that goal. It involves understanding my current situation, looking ahead, understanding the environment we will operate in, the capabilities, building on the strengths, and addressing the weaknesses i.e. gaps to achieve a clear set of goals that are measured by specific indicators. These would include leading indicators for measuring capacity building, and lagging indicators to measure how successful the desired outcomes are, all of which enables us to adjust.

If I take the analogy of bowling, I would ask: how many pins can I knock down if I aim really well and draw the perfect path? The pins are my objectives, the ball is my effort, and the path is my strategic plan. Leading indicators would be my performance during hours of practice sessions, and how I compare to other champions (or benchmarks).

What are the key characteristics of resilient institutions? How can resilience be developed and integrated into a business's operating model?

I believe the most important organizational trait is continuous improvement and alignment with both current and changing times i.e. you improve to manage for the future trajectory; a growth mindset if you will. This entails an organization being open to change, and

one that updates its policies and culture to align with the latest developments. I think the way to integrate resilience into institutions is to make continuous improvement and looking outwards, and inwards (or reflecting), a part of the culture. It is essential to have leaders be held accountable for this learning process and ensuring that the necessary investment in time and resources are secured, deployed and tracked against milestone achievement.

How do you view the ever-increasing prominence of Saudi women in terms of their participation in the national labor force and in building a resilient local economy? Who are the women that inspired and empowered you in your own journey?

We have made huge strides in Saudi Arabia when it comes to women's participation in the workforce. We have actually exceeded our 2030 target already (35% actual vs 30% target). I'm extremely proud of how far we have come. I hope the next step is to focus not just on participation but also on representation of women in leadership roles and decision making.

Personally, I've had many women who have inspired me. The first one would have to be my mother, who set an example of values to aspire to. Mom taught me many things. I will pick my two favorite, and those I think are two extremely important leadership traits: she taught me persistence and kindness.

"I hope the next step is to focus not just on participation but also on representation of women in leadership roles and decision making."

I remember when I was applying for a scholarship in 2005. My dad was busy and so I needed to go to the Ministry of Education in Riyadh by myself and apply, alone. This was a very different time. They wouldn't let me in. My mother told me to try again the next day.

They still didn't let me in. She said keep trying, ask the security guard to help. Call anyone from the gate and see if someone can help. I didn't end up getting it, but if it wasn't for her, I would have turned back from the first challenge. Nowadays, I'm usually the last one to give up. I just keep trying and persisting. 9/10 times, I succeed. 1/10 times, it doesn't work, so we change course and keep moving forward.

My mom always used to say do good and don't look back, as in don't ask if they deserve it. Don't ask if they appreciate it. The deed reflects you and your intention. This seems pretty simple but it's something I try to apply with people. There are many women who have honestly inspired me, some who came before me, some with me, and some after me.

"My mom always used to say do good and don't look back"

What are your hopes for the next generation of aspiring Saudi talent? What's one piece of advice you would offer to Saudi youth joining the national workforce?

I hope they can continue what we started and build on what we have achieved. I hope they are better than us and achieve more. In terms of advice, I would urge them to prioritize their personal and professional growth. Listen to feedback no matter how harsh it may feel or who it is coming from. Look inside yourself and ask yourself if it's something you can improve, and if so, put in the work to make it happen.

What legacy would you like to leave behind for Saudi women and men entering the workforce in the decades to come?

It's very simple actually, I hope I can leave a place better than the one I found, and people more developed than when I first met them. When I say better, I mean in every and any aspect. This could be culture, a change in policy, governance, business practice, or honestly



anything. It's important to say anything for the sake of improvement, and not just for the sake of change. In some cases, making a place better could mean reinforcing existing values and setting an example.

What are some of the learnings you've captured as a result of your role with Qudwa, especially within the "Celebrating Failure" series? What lessons would you like to impart to the next generation of Saudi young professionals entering an increasingly co-gendered marketplace?

The point of celebrating failures was to change perspectives. To stop looking at failures as negative, but rather as gained experience. You rarely learn when things go right. Conversely, you learn a lot when things go wrong. It's easier said than done, but my advice is not to be afraid to fail, as fear of failure often entails inaction which gets us nowhere.

Obviously, this is easier to do in an environment that affords employees the room for mistakes. With regards to entering a co-gendered workplace, I have learned one important lesson: diversity is strength. Diversity means more ideas, more perspectives, and more solutions. Men and women do things differently, and that is a strength not a weakness.

"You rarely learn when things go right."

As for a lesson I've learned: the times you feel least resilient, the times you feel the weakest, and you manage to go on one more day, those are, actually, your strongest moments. You just can't see them yet. I write this as a sleep-deprived but extremely grateful new mother who doesn't feel particularly resilient. So those words ring true for me from the beginning of

my journey up to the present moment, and I'm sure will hold true going forward. I believe it was Les Brown who said, "you can't see the full picture when you're in the frame".

Diversity means more ideas, more perspectives, and more solutions. Men and women do things differently, and that is a strength not a weakness.



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QEMSCAN Assisted Interpretation of Imbibition Capillary Pressure for Multi-porosity Carbonate Rocks

By Aymen Alramadhan and Dr. Yildiray Cinar
Reservoir Description & Simulation Department,
Southern Area Reservoir Management
Saudi Aramco
SPE Journal (SPE-200367-PA)



Introduction

The ability of an oil reservoir to hold oil and water within its pore structure is called capillary pressure (Pc) and it is a function of interfacial tension, capillary sizes (conduits created between the grains of the rock), wettability, rock texture, density difference, and formation saturation. The capillarity does not only control the initial distribution of fluids (oil/water/gas) within a given reservoir but it also drives hydrocarbon recovery processes through the interaction of the three forces: capillary imbibition, viscous and gravity forces. Therefore, accurate assessment of hydrocarbon in-place and recovery is directly linked to an accurate knowledge of capillary pressures for different rock types within a reservoir.

Due to the complex heterogeneity in carbonate reservoirs and its strong impact on Pc, there is always a need for reliable and accurate laboratory measurements to assess Pc at core scale. There are three standard laboratory tests for Pc assessment: multi-speed centrifuge tests, semi-permeable membrane (porous plate) tests, and mercury injection capillary pressure (MICP) tests.

To the best of our knowledge, there is no such study reported in the open literature that examines variation in derived imbibition capillary pressure (Pci) from a given multi-speed centrifuge test using different interpretation methods similar to the Society of Core Analysts (SCA) study. Part of this study looks at different models in transforming imbibition centrifuge data to

obtain a representative Pci to integrate with the MICP and Quantitative Evaluation of Minerals by Scanning Electron Microscopy (QEMSCAN) data.

Methodology

Experimental Data. A large number of data sets from a carbonate reservoir are examined in this study. Each data set contains end-trim petrographical data (thin section, scanning electron microscopy, QEMSCAN), conventional core data (porosity, permeability, and grain density), multispeed centrifuge data, and MICP data. The rock samples used in this study cover a wide range of porosity, permeability, and rock types.

Mineral and Textural Characterization Using QEMSCAN. QEMSCAN analysis was performed on end-trims for a detailed mineralogical imaging and textural and mineralogical characterization. For each sample, QEMSCAN outputs include:

- **Quantitative bulk mineralogical abundance data (expressed as both mass and area %)**
- **Mean mineral size data for each reported mineral**
- **Calculated grain and bulk density data**
- **Estimated macroporosity data**
- **Mineralogical images (i.e., mineral maps)**

Conventional Core Analysis. Reservoir plugs of 1 in. in diameter and approximately 1 in. in length were used for conventional core analysis, centrifuge, and MICP tests. Plugs were cleaned as per the approach proposed by Masalmeh and Jing (2007) and dried in an oven at 105C. Porosity, permeability, and apparent grain density were obtained according to API-RP40 (1998).

Multispeed Centrifuge Data. After conventional core analysis tests, core plugs were saturated under vacuum with a synthetic brine of 200 k ppm. Then, the plugs were put in centrifuge for draining brine against air at a Pc of 130 psi to establish an immobile (connate) water saturation. Air was replaced by dead crude oil taken from the field (0.89 g/cm³ and 7 cp at 60C), and several pore volumes of crude oil were flushed through the plugs. Then, to restore wettability, the plugs were immersed in crude oil for static aging at 60C for at least 4 weeks. Although no wettability tests were conducted on the aged plugs, a weak oil-wettability is expected in the plugs based on the previous wettability studies on the samples from this reservoir. Then, several pore volumes of crude oil were flushed through the plugs to establish the initial conditions before the centrifuge tests.

MICP Data. After centrifuge tests, the plugs were cleaned, dried, and then subjected to MICP tests up to 60,000 psi to determine the pore-throat size distribution (PTSD) and to classify samples based on modality and pore-throat radii. The number of peaks on PTSD determines the modality of the rock sample (one peak represents a monomodal pore system, two peaks a bimodal system, and three peaks a trimodal). These data sets make it possible to directly link Pci end-point to the pore systems.

Linking Centrifuge with MICP and QEMSCAN Data. To assess the effect of the microporosity, porosity modality, and mineral content on Pci, we attempt to link Pci end-point to MICP and QEMSCAN data. We do this in three stages: First, a representative Pci end-point from the solution space (six solutions for each centrifuge Pci test) is determined. Second, the impact of pore systems and micro-macro interaction on Pci end-point is explored. Third, the impact of variation in

mineralogy on Pci end-point is investigated. The first stage involves the assessment of numerical solutions transformed through history matching the smoothed and equilibration-corrected experimental data for representativeness. For analytical solutions, Pci end-point obtained from two formulations are compared using crossplots and deviations from the 45o line. Representative Pci end-point solutions are averaged at a reference negative Pci (–30 psi) to study its variation across different samples. To address how pore systems and micro-macro interaction control Pci end-point, diagnostic plots linking variation in properties and internal pore structure of the cores to variation in Pci end-point are constructed for investigation. To address how the variation in mineralogy influences Pci end-point, samples from the previous analysis are clustered based on the mineralogy data from QEMSCAN to determine outliers. Results are detailed in the next section.

Results and Discussion

The QEMSCAN data shows that calcite is the most abundant mineral within the examined reservoir with several samples of a large dolomite content. All other minerals occur in minor to trace quantities.

A qualitative assessment of the end-point saturation of Pci curve (Pci end-point) vs. MICP of bi-modal samples demonstrates that the degree of communication between micro- and macropores has some control on Pci end-point. **Figure 1** shows the pore-throat size distribution and Pci curves. The medium-permeability samples have a better communication between micro- and macropores (evident with samples' higher fraction of intermediate pores between micro- and macropore peaks) compared to the high-permeability samples that have a relatively lower amount of intermediate pores. The better micro-macro communication for the medium permeability samples is thought to be responsible for higher Pci end-point (which indicates a better recovery efficiency) in comparison to lower Pci end-point for the high-permeability samples.

Another observation from Figure 1 is that the peaks of micro- and macropores are closer for the medium permeability samples than those for the high-permeability samples. This might be another factor for a better imbibition recovery efficiency of the medium permeability samples.

A search for a relation between Pci end-point and many other parameters including porosity, permeability, initial water saturation, dolomite content, and the ratio of peak micro- to macropore radii (r_m/r_M) shows a weak correlation.

An in-depth investigation reveals that samples with high dolomite, high heavy mineral, and high microporous calcite form outliers on Pci end-point vs r_m/r_M plots. With outliers removed, a better correlation is achieved for bi-modal rock (Figure 2).

Conclusions

Acquiring Pci, QEMSCAN, and MICP data on the same rock sample adds value in assessing carbonate waterflood behavior. The study shows that, for multiporosity carbonate rock, the connectivity between micro- and macropores appears to affect the efficiency of oil recovery significantly. The connectivity depends on the amount of intermediate pores between micro- and macropores, and how close the peak radii of micro- and macropores.

The QEMSCAN data shows that bimodal carbonate samples without dolomite, heavy minerals (rutile/anatase) or microporous calcite exhibit a better correlation between Pci end-point and r_m/r_M . We recommend that this information should be considered in carbonate rock typing.

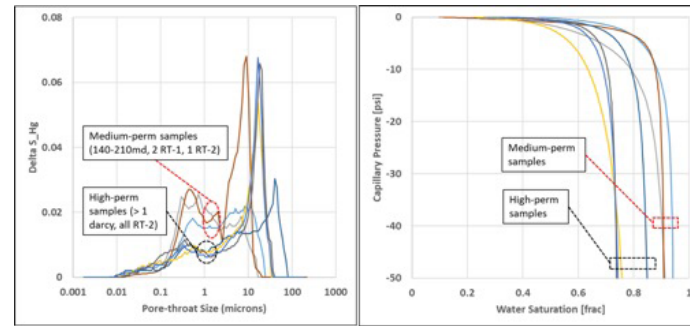


Figure 1: Significance of the communication between the micropore and macropore systems.

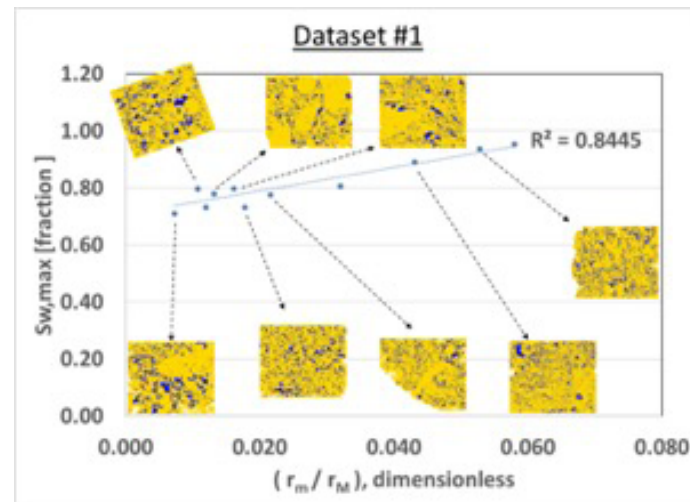


Figure 2: Correlation between Pci end-point and micro to macro pore throat ratio with the outliers removed.

Resilience Redefined: Lessons from an Award-Winning Digital Resilience Journey

Abdullah H. Aldhamin,
Lead Operating System Analyst,
Saudi Aramco



Thomas Edison's timeless wisdom, "Opportunity is missed by most people because it is dressed in overalls and looks like work," underscores the profound value of hard work and the often-overlooked potential in challenging endeavors. This ethos deeply resonates with the transformative resilience journey of Aramco's Upstream Digital Center (UDC). Facing the Y2K crisis, UDC not only navigated the immediate technological threats but also used this challenge to establish a foundation for sustained operational excellence. Seizing the Y2K disruption as a catalyst, UDC built a robust resilience framework that elevated it to a leading position in resilience and foresight. Achievements such as earning the Disaster Recovery Institute (DRI) Resilient Enterprise Award and multiple international accreditations solidified its status as an industry leader. This article delves into how UDC's strategic foresight, combined with a comprehensive, multifaceted approach, has redefined resilience, contributing to broader business objectives and industry leadership.

Visionary Leadership and Proactive Strategy

The resilience journey began under the looming cloud of the Y2K scare in the late 1990s, a period marked by global uncertainty about the potential impact of the millennium disruption. The Y2K issue, which stemmed from older computer systems' inability to distinguish the year 1900 from 2000, posed a potential global technological meltdown. Unlike many who

scrambled for short-term fixes, UDC's leadership seized the moment to rethink and implement long-term resilience measures. They inspired the team to conduct extensive and rigorous testing protocols that not only addressed the immediate issues but also prepared the organization for future technological challenges. This proactive approach extended beyond mere compliance, fostering a culture of continuous innovation and improvement that aligned closely with the company's broader business goals.

Lesson Learned: Strategic Leadership Sets the Tone for Resilience. This early challenge underscored the importance of looking beyond immediate solutions, demonstrating the value of strategic foresight in resilience planning.

Lesson Learned: Anticipate and Innovate. By leveraging the Y2K crisis as a springboard for broader improvements, UDC showcased the importance of using crises as opportunities for systemic enhancement.

Cultivating a Culture of Resilience and Continuous Improvement

Imagine a workplace where each employee is as prepared and vigilant as the captain of a ship. Following

the successful navigation of Y2K, UDC emphasized fostering a culture where continuous improvement and resilience were central. This involved nurturing an environment conducive to innovative thinking where every team member, from leadership to front-line staff, is encouraged to approach challenges with a mindset geared towards proactive problem-solving and continuous improvement. Regular training and awareness, along with scenario planning, were integral to this cultural shift.

Lesson Learned: Resilience is Rooted in Culture.

Building a resilient culture was pivotal, enabling UDC to adapt swiftly and effectively to new challenges. This adaptability became a key competitive advantage.

Lesson Learned: Empower People to Empower Systems. UDC's investment in its people facilitated a shift in workplace culture from reactive problem-solving to proactive risk management. This empowerment has been crucial in building a resilient organization where challenges are routinely transformed into opportunities for improvement and innovation.

Advanced Technological Integration

Embracing technology revolutions is engraved in UDC's DNA. With a solid foundation established, UDC embarked on strategic expansions, exploring new technological frontiers and enhancing its capabilities. Investments in robust IT infrastructure and emerging technologies not only bolstered internal operations but also supported the broader objectives of creating unique competitive advantages. Simultaneously, comprehensive risk management strategies were employed to ensure that these technologies were integrated securely and sustainably, safeguarding against potential downsides and maximizing their positive impact on business operations.

Lesson Learned: Innovate Continuously. Continuous innovation is crucial in maintaining industry leadership. By staying abreast of technological curves and refining

solutions and capabilities, UDC has fostered long-term sustainable organizational growth.

Lesson Learned: Risk Management is Integral to Technology Adoption. The proactive assessment and management of risks associated with new technologies is crucial. This not only enhances operational efficiency and resilience, but also positions UDC as a model for balancing innovation with an acute awareness of associated risks.

Fostering Collaboration: Partnering for Innovation and Resilience

UDC has actively sought to foster collaboration both within and outside the organization. Recognizing the value of diverse perspectives and shared expertise, UDC embarked on strategic partnerships that enhance their resilience capabilities and drive industry-wide advancements. A key highlight in their collaborative efforts was organizing the company's first-ever resilience hackathon event in partnership with the corporate business continuity owner. This event provided an opportunity to harness the collective creativity and expertise of employees from various departments to solve potential resilience challenges and propose innovative new solutions. This collaboration aimed to bridge the gap between digital resilience strategies and broader business continuity efforts, ensuring a unified approach to managing risks and disruptions across the company.

Lesson Learned: Collaboration Drives Innovation. Bringing together diverse teams fosters a deeper understanding and integration of different perspectives into resilience planning.

Lesson Learned: Shared Goals Foster Stronger Partnerships. Aligning goals across departments and with strategic partners ensures that all parties are working towards a common objective, enhancing the effectiveness of collaborative efforts.

Cyber Resilience: Securing the Digital Frontier

In today's increasingly growing digital landscape, cyber threats represent one of the most significant risks to business continuity. Recognizing this, UDC has developed an integrated and robust cyber resilience strategy to protect the organization's digital assets and ensure operational integrity. This comprehensive strategy encompasses several key components designed to strengthen their cybersecurity posture, including smart security monitoring and detection technologies, regular cybersecurity training, incident response planning, and continuous monitoring and assessment. By integrating these cybersecurity measures into their broader resilience planning, UDC exemplifies a holistic approach to managing digital risks, setting a high standard for cybersecurity practices within the oil and gas industry.

Lesson Learned: Proactive and Continuously Vigilant Cyber Defense is Essential. The dynamic nature of cyber threats requires ongoing vigilance and continuous adaptation of a proactive stance and implementing a layered security approach. UDC's commitment to regular updates, continuous monitoring, and employee training ensures that their cyber defenses remain robust and effective against evolving threats.

Strengthening Business Continuity Framework with ISO 22301:2019

Achieving the ISO 22301:2019 accreditation demonstrated UDC's commitment to maintaining and enhancing international standards for business continuity management (BCM). Attaining this accreditation not once, but three consecutive times, and notably achieving their first ISO accreditation during the unprecedented global disruption caused by the COVID-19 pandemic, underscores their dedication to resilience in extraordinarily challenging times.

The journey to the first ISO 22301:2019 accreditation began as the world grappled with the onset of the

COVID-19 pandemic, a period marked by significant uncertainty and rapid changes in work environments. UDC swiftly adapted to remote working conditions, reevaluated risk assessments, and updated their business continuity plans to address the new types of disruptions introduced by the pandemic. This adaptation was not merely reactive; it involved a proactive overhaul of their BCM practices to ensure robustness under all circumstances.

The success in achieving the ISO accreditation has motivated UDC to leverage the momentum and insights gained from the accreditation process to further refine and enhance their BCM strategies. The subsequent renewals of their ISO 22301:2019 accreditation were achieved through rigorous assessments, continuous process improvements, and by fostering a culture of resilience that permeates every level of the organization.

Lesson Learned: Adaptability in Crisis is Crucial. The ability to quickly adapt business continuity plans in response to sudden, global disruptions like the COVID-19 pandemic was instrumental in achieving UDC's first ISO BCM certification. This experience highlighted the importance of flexibility and the need to anticipate and prepare for a wide range of potential scenarios in BCM.

Lesson Learned: Complacency is the Enemy of Resilience. The organization's approach to continuous improvement in their BCM practices has not only ensured compliance with international standards but has also driven them to set higher internal benchmarks for resilience. This proactive stance on continuous improvement has enabled UDC and Upstream customers to stay ahead of potential disruptions, reinforcing their leadership in resilience within the oil and gas industry.

Celebrating Success & Excellence: Elevating Industry Standards

Winning the DRI International Resilient Enterprise Award marked a significant milestone in UDC's journey, and carries significant practical implications and

The Adopted Methodology

A comprehensive literature review and process engineering design were conducted to determine design compatibility with drilling rig’s system and parameters, such as flow rate, mud properties, formation temperatures, and thermal gradients. Simulation studies were performed to verify the model and optimize the system on various parameters, to characterize the relationship between flow rate, temperature and energy recovery. The simulation model can then be used as a tool in the planning phase of a well, to provide insight into utilizing the system on a given well.

The Results

Simulation results demonstrate promising outcomes, with Figure 2 depicting net power generated against flow line temperatures and flow rates. The model has shown the economical inlet flowline temperatures to range from 153 to 276 degrees Fahrenheit. Flow rate was directly proportional to the net power generated, however at higher temperatures, that effect is diminished due to the rate of energy transferred between the fluids. From the wide variety of working fluids available commercially, R123 emerged as the most efficient working fluid due to its low boiling point and high thermal conductivity. Given an optimal turbine and generator design, the net power of the proposed system can yield up to 225 kilo-Watts per well. Benchmarked against the industry standard diesel engines, our design holds the potential to save up to 206 Metric Tons of CO2 by eliminating the need of 20,662 gallons of diesel that would have been used during drilling operations. Moreover, the system would result in a considerable decrease in fluid loss due to evaporation, as the drilling fluid is cooled down in a closed-loop. Imperatively, the system shows greater promise for application in producing wells, offering prolonged energy production compared to drilling activities, since produced fluids will naturally be at a thermal steady-state within the geothermal profile.

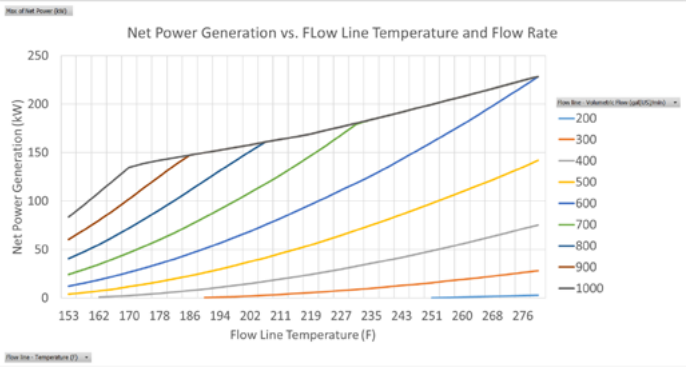


Figure 2: Simulation results showing net power generation (kW) corresponding to a range of flow line temperatures (°F) and flow rates (US Gallons/minute)

Conclusion

Harnessing geothermal energy from drilling operations presents a sustainable solution for reducing carbon emissions and operational costs. The proposed system demonstrates significant potential for power generation and environmental impact reduction, paving the way for greener and more efficient drilling practices. Further research and implementation efforts are warranted to fully realize the benefits of this approach. kilo-Watts per well. Benchmarked against the industry standard diesel engines, our design holds the potential to save up to 206 Metric Tons of CO2 by eliminating the need of 20,662 gallons of diesel that would have been used during drilling operations. Moreover, the system would result in a considerable decrease in fluid loss due to evaporation, as the drilling fluid is cooled down in a closed-loop. Imperatively, the system shows greater promise for application in producing wells, offering prolonged energy production compared to drilling activities, since produced fluids will naturally be at a thermal steady-state within the geothermal profile.



Three Pillars of Supply Chain Resiliency: Aramco’s Story

Author bio:

Faisal Rashid is a Senior Procurement Specialist at Aramco with over 20 years’ experience leading transformational supply chain management, financial, and operations strategies in the energy and tech sector.

Saudi Aramco, the world’s largest integrated energy and chemical company, has long made resilience a core tenet of its corporate strategy. By focusing on three core pillars—local manufacturing, multi-region sourcing, and strategic inventory management—it has been able to navigate turmoil and disruption to remain a reliable supplier of energy to the world.

By Faisal M. Rashid

Supply chain resilience used to denote effectively managing supply risks. But lately, the concept has come to mean much more than risk management. It now covers the ability to confront and overcome threats to one’s supply chains and then be in a stronger position afterward.

“It’s your ability to withstand adversity and bounce back and grow despite life’s downturns.”

The American Psychological Association defines resilience as “the process and outcome of successfully adapting to difficult or challenging life experiences, especially through mental, emotional, and behavioral flexibility and adjustment to external and internal demands.” Or as Amit Sood, executive director of the Global Center for Resiliency & Well-Being, and creator of the Resilient Option program, explains: “It’s your ability to withstand adversity and bounce back and grow despite life’s downturns.”

Similarly, resilience in the corporate world is the ability of a company to bounce back from a catastrophe or a disruption and return to normal operations levels. Dr. Yossi Sheffi, a professor at the Massachusetts Institute of Technology and author of *The Resilient Enterprise: Overcoming Vulnerability for Competitive Advantage*, highlights three main ways companies can develop resilience: increasing redundancy, building flexibility, and cultivating an empowering culture.

For many companies, resiliency is a recent area of focus. For Aramco, however, resiliency and persistence are long-standing parts of the culture and history. Aramco traces its beginnings to 1933, when Saudi Arabia signed a concession agreement with the Standard Oil Company of California (SOCAL) that allowed SOCAL to survey the Saudi desert for oil. Drilling began in 1935 but failed to produce any results. Instead of abandoning the drilling program, company executives followed the advice of their chief geologist Max Steineke to “keep on drilling.” That persistence paid dividends when in 1938, commercial oil production began with Damman well No. 7 or “Prosperity Well.” At that time, basic infrastructure, equipment manufacturing, and support services were not available in Saudi Arabia. As a result, Aramco’s drilling operations required extensive planning and coordination as all materials and services came from providers outside of Saudi Arabia. The supply chain had to be designed for resiliency out of necessity. Drilling for one well or hundreds; the operations required a supply chain designed around redundancy due to the long lead times for materials and services. As a result, a culture of resiliency took root, and it is now second nature.

As Aramco’s operations grew, a more strategic approach to redundancy and supply chain resiliency started to take shape. The foundation for Aramco’s redundancy strategy is based on three core pillars:

Local manufacturing base

Having local sources for key products shortens lead times and creates a more flexible supply chain. If a disruption occurs, suppliers can respond more quickly,

and materials can arrive sooner.

Multi-geography sourcing

Having suppliers located in more than one region creates redundancy and supplier diversity while enabling flexible production capacity. If suppliers in one region are affected by a risk event, Aramco can source from suppliers in a different region.

Strategic inventory management

By taking a strategic approach to setting and managing inventory levels, optimal safety stock levels are maintained to help respond to disruptions.

As a result of the company’s focus on these three pillars, Aramco’s supply chain has proven to be highly resilient, weathering multiple disruptions and proving to be capable of returning to normal operations.

These pillars were formalized in programs that enabled local investments, and in the building of strategic inventory. One example is the Aramco In-Kingdom Total Value Add (iktva) program that was launched at the end of 2015. The program was designed to drive supply chain efficiency and value across Aramco’s operations by developing a diverse, sustainable, and globally competitive oil and gas supply chain within the Kingdom of Saudi Arabia, as opposed to relying on imports.

Since the launch, iktva has added over \$130 million (SR 488 million) to Saudi Arabia’s gross domestic product (GDP). By the end of 2022, Aramco was sourcing 63% of its materials and services from local suppliers, an increase of 35% compared to 2015. The target is to reach 70% by 2025, as highlighted by Senior Vice President of Procurement & Supply Chain Management, Mohammad Al Shammmary. While the program has been good for Saudi Arabia and benefited the local economy, it has also enhanced the value of Aramco’s supply chains. As a result of having an established and rooted local supply chain, Aramco’s operations have become more reliable and efficient.

Withstanding disruption

The three pillars and the iktva program have enabled Aramco to weather several significant disruptions and risk events. In September 2019, for example, just before the COVID pandemic, the Abqaiq and Khurais producing plants were hit by drone attacks, cutting production by 5.7 million barrels. Following the attacks, Aramco restored production levels within 11 days, demonstrating its long-standing reputation for reliability. Figure 1 outlines some of the key actions that the Procurement & Supply Chain Management organization took to expedite recovery for both plants.¹ These actions were all based on the three core pillars and many of them were enabled by Aramco’s iktva program.

Local Manufacturing	Multi-Region Sourcing	Strategic Inventory
<ul style="list-style-type: none">● Obtained same-day nitrogen supply from local market● Engaged specialized local sources to secure relief valves and flanges	<ul style="list-style-type: none">● Coordinated with manufacturers from multiple regions to source long-lead and engineered materials● Leveraged technical resources to support emergency requirement assessments	<ul style="list-style-type: none">● 100% of firefighting foam used after the attack was obtained from company’s own strategic supply● Replenished damaged stock for over 600 materials from strategic inventory supply

Figure 1: How Aramco’s Three Core Resiliency Pillars Helped It Respond to the 2019 Drone Attacks

Shortly after Aramco recovered from the attacks, the company faced another incident when the COVID-19 pandemic started in early 2020. The pandemic disrupted many global supply chains due to not having available capacity, regional lockdowns, and suppliers facing financial distress. Aramco, however, experienced minimal impact from these global supply chain disruptions because of the strategic inventory it held for critical commodities and its reliance on local suppliers.

A study conducted by Boston Consulting Group (BCG) assessing Aramco’s supply chain resilience during the pandemic showed that the company was more effective than its peer group of national oil companies and oil and gas majors. The assessment focused on four key areas and 11 subgroups. The key areas included 1) demand assessment, 2) risk monitoring, 3) risk mitigation, and 4) opportunity capture. The outcome of the assessment is outlined in **Figure 2**, showing Aramco is best in class for seven of the 11 subgroups, with minor gaps in the remaining four areas. The study’s results indicate that Saudi Aramco’s Procurement & Supply Chain Management organization managed to overcome challenges brought on by the pandemic based on having redundancy and flexibility combined with a culture focused on being resilient.

For the four subgroups with gaps, the study identified the following key actions required to reach best-in-class performance in supply chain resilience:

- Conduct a comprehensive risk assessment and monitoring of suppliers’ financial, strategic, and technological risks
- Incentivize performance for service contracts to ensure alignment of contract goals, resulting in better quality of service and mutual trust with suppliers
- Conduct market research to identify and evaluate partnership opportunities to reduce risks
- Drive sustainability along the supply chain, including assessing suppliers to ensure alignment

- Maintaining strong networks locally and globally to increase transparency with the supply base;
- Developing long-term partnerships, including acquisitions that focus on innovation, operational efficiency, and extending strategic objectives across the supply chain network.

These are just some focus areas for continuous improvement in developing a more resilient supply chain that Aramco is focusing on for the future.

Resiliency is a choice

Supply chain resilience is a critical factor for businesses to succeed in today’s dynamic and unpredictable marketplace. Resilience is not an inherent trait of supply chains; it is a choice that companies must choose to make. Businesses need to invest in creating a resilient supply chain by developing strategies that focus on risk management, agility, and flexibility. They must proactively assess potential risks and threats and develop contingency plans to mitigate them. Furthermore, organizations must recognize that achieving resilience is an ongoing process and requires a long-term commitment. It involves continuous monitoring, assessing, and updating of plans and procedures to ensure that they remain relevant and effective.

For Aramco, building a resilient supply chain was a strategic imperative rather than a cost center. The benefits of a resilient supply chain are significant and have allowed Aramco to create a competitive advantage by enabling its operations to respond quickly and effectively to disruptions, minimize losses, and maintain a reliable supply of energy.

In conclusion, being resilient is a choice that businesses must make. Companies that prioritize building a resilient supply chain will be better equipped to navigate the challenges and uncertainties of today’s business environment, maintaining their competitiveness, and ensuring their long-term success.

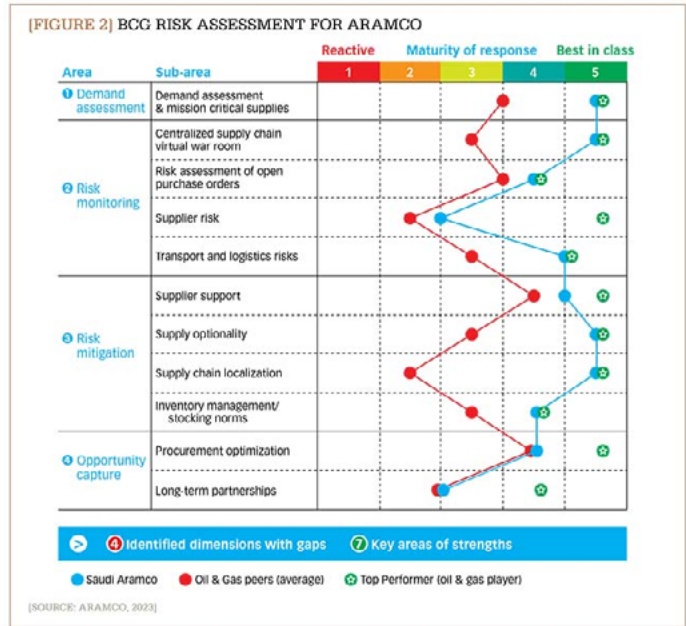


Figure 2: BCG Risk Assessment for Aramco

Going forward, other focus areas to strengthen the resiliency of the supply chain operations include:

- Leveraging technology to establish end-to-end visibility, driving further insights with tier 1 and tier 2 suppliers;



SPE-KSA Celebrates 65-year Milestone Anniversary

Established in 1959 as the first SPE section outside of the US, the SPE-KSA section proudly celebrates the milestone of its 65th anniversary this year. Following an illustrious legacy of achievements and service to its members and the industry at large, SPE-KSA currently stands as the single largest section globally.

Over the years and successive terms, experience was passed down from one team to the next with the common goal of disseminating industry knowledge, cultivating the skillsets and broad acumen of our members, as well as giving back to our community.

The current SPE-KSA Executive Board serves its members through a variety of platforms and media, including lectures, workshops, boot camps, competitions, conferences, community outreach programs, and social trips, as well as through its flagship publication: SandRose Magazine.

Looking ahead, the SPE-KSA Executive Board team and its community eager to continue building this distinguished heritage towards new heights of excellence, growing and adapting alongside a dynamic energy industry landscape.

SandRose Technical Paper Digest

Curated by Deema Albeesh and Yazeed Aldughaither

In this section, we curate a number of recommendations for technical papers from subject matter experts on topics relating to their respective disciplines.



Persistence & a Creative Facility Solution Enable Successful Development of Stranded Offshore Gas

AREAS OF INTEREST: SELF-INSTALLING PLATFORM, NORTH SEA, SMALL FIELD

Authors: G. Coghlan, D. Westera, K. Ritzema

Areas of interest: Self-installing platform, north sea, small field

Conference: SPE Productions & Operations 2014
Link: <https://doi.org/10.2118/166208-PA>

An offshore gas field in the North Sea was successfully developed after several decades of navigation through appraisal uncertainties and economic constraints. This paper relays the case of a Dutch field that employed a cost-effective development plan and adopted a reusable self-installing platform (SIP) with full processing and compression facilities in place, and a tie to the northern offshore-gas-transport pipeline system (NOGAT). Strong field performance capable of lasting for several years was achieved. The advancement of this field poses a step forward for the development of other fields in the North Sea that have been similarly historically stranded.

Utilization of Existing Hydrocarbon Wells for Geothermal System Development: A Review

AREAS OF INTEREST: GEOTHERMAL ENERGY, HYDROCARBON WELLS, REPURPOSING EXISTING ASSETS

Authors: Josiae Jello, Tugce Baser

Paper #: 121456

Conference: Applied Energy 2023
Link: <https://doi.org/10.1016/j.apenergy.2023.121456>

Repurposing abandoned hydrocarbon wells for geothermal applications can be an opportunity for increasing the deployment of this renewable energy. The primary appeal of this pursuit is the saved cost of drilling. This paper explores the current state of the development of this application and outlines the challenges of its implementation. It also highlights the importance of conducting a per-well basis assessment to determine the feasibility of transitioning each well. Important factors to consider during the assessment process are the timing of the decommissioning for costing purposes, and the properties of the targeted formation including geothermal gradients and permeability.

Resilience through Commodity Cycles: Techno-economic Optioneering to Enable Robust Development Planning

AREAS OF INTEREST: UNCONVENTIONAL GAS, ECONOMIC MODELING, FIELD DEVELOPMENT SCENARIOS,

Authors: Abeer Alsaleh, Maram Qallaf, Ammar Siddiqui, Raysan Alhamoud

Paper #: IPTC-23204-EA

Conference: International Petroleum Technology Conference (IPTC) 2024
Link: <https://doi.org/10.2523/IPTC-23204-EA>

A study was conducted to determine the best development plan for a complex, liquids-rich unconventional gas field. Three strategies were explored: lean gas, rich gas, and a hybrid approach, along with two condensate disposition options. The economic evaluation favored the rich gas and hybrid strategies due to their superior economics, low risk, and high returns. These strategies also managed subsurface risks better and optimized investments by maximizing financial returns from higher liquids production. The study underscores the importance of a robust economic evaluation workflow in supporting strategic decisions in capital-intensive resource development projects. This analysis aids in decision-making by offering clarity on value creation and comparing various development options.

Exploring Resilience in the Oil Industry: Theory vs Practice

AREAS OF INTEREST: ORGANIZATIONAL RESILIENCE, RESILIENCE PROFILE, MANAGING CATASTROPHE, TRAINING AND EDUCATION

Authors: Maria Angela Capello, Alessandra Passalacqua

Paper #: SPE-193735-MS

Conference: SPE International Heavy Oil Conference & Exhibition 2018
Link: <https://doi.org/10.2118/193735-MS>

This paper discusses the importance of resilience in leadership, especially in the oil and gas industry. It highlights how resilience, defined as the ability to recover and thrive after adversity, is a crucial skill for leaders. The paper compares theoretical and practical aspects of resilience, using examples like the BP Deep-Water Horizon Oil Spill to illustrate organizational resilience. It also discusses individual resilience, drawing from experiences in the oil industry. The paper analyzes how resilient leaders cope with neuroticism, mindfulness, self-efficacy, and coping, and how this impacts the workforce. It concludes that fostering resilience can lead to positive outcomes, including better performance and less turnover and burnout.

THE MAN IN THE ARENA

Yazeed Aldughaiter, Editor-in-Chief



The notion of resilience has become one of the buzzwords of the moment, and can be heard anywhere from the boardrooms of the world's largest companies, read in the pages of a self-help book, or uttered in fleeting conversations. While the concept may be one with which most of us are familiar, it may be worth exploring what that word really means in today's fast-paced world, and whether that meaning has shifted across generations. Despite the

still-growing frequency of its use, day-to-day conversations will demonstrate the fact that this concept is understood differently between different people and cultures. This is an especially pertinent issue for young professionals entering the workforce and facing a slew of novel challenges in an unfamiliar environment, and more specifically an environment which calls their own resilience into question.

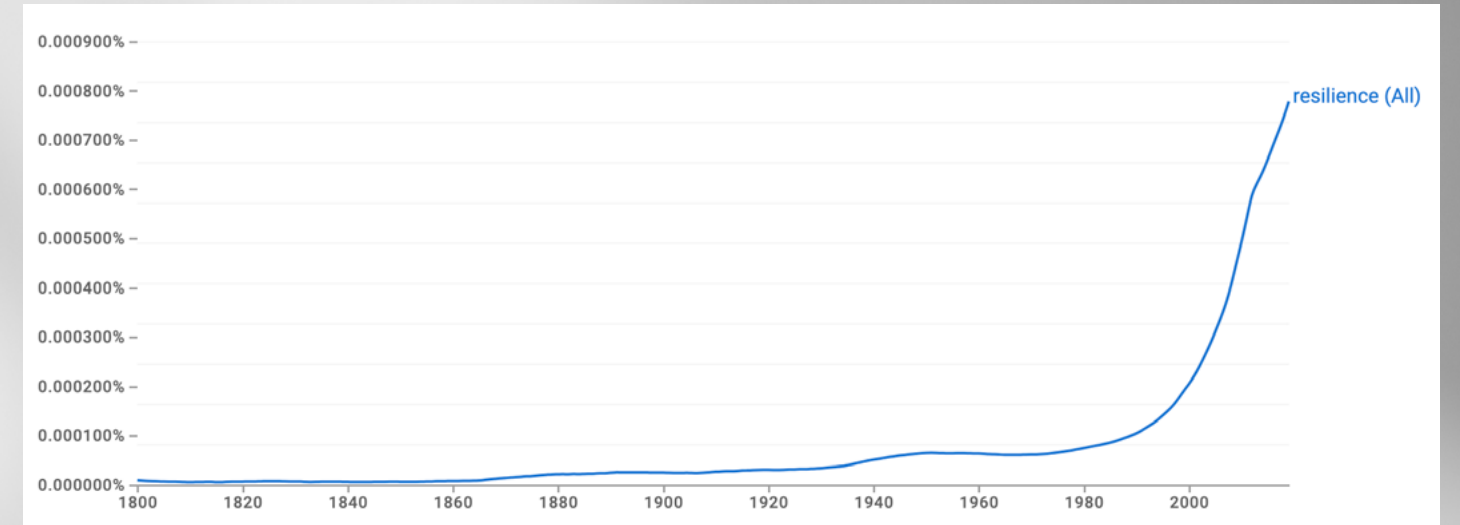


Figure 1: Google Ngram showing the exponential increase in frequency of use of the term 'resilience' in writing in the last 20 years

While there are diverse opinions around what personal resilience might look like in the modern era, there is a general consensus that it is the quality of recovering quickly from setbacks. Resilience is therefore distinct from simple strength or perseverance, since the concept inherently acknowledges that all of us will eventually encounter challenges that will throw us off our balance, if only momentarily. Although it is commonly associated with toughness or tenacity, there is an undeniable element of flexibility and adaptability which is required to bounce back from these difficulties. It is this unique juxtaposition of two seemingly opposing notions (strength and flexibility) that forms the concept of resilience.

Some modern behavioral experts have also taken the concept of resilience a step further, and have coined the term "anti-fragility", sometimes referred to as "resilience 2.0". This comparatively novel concept of anti-fragility builds upon the preexisting foundation of resilience, and adds to it the idea that one can not only recover from setbacks quickly, but also do so in a manner that generates additional strength and learning that further fortifies that individual from future threats.

In fact, there are several examples of anti-fragile systems in natural and business worlds. The muscular system is one such example from biology: when we exercise, this results in microscopic tears in our muscle fibers. As our body recovers, it not only repairs those microscopically damaged fibers, it also creates stronger and bigger ones

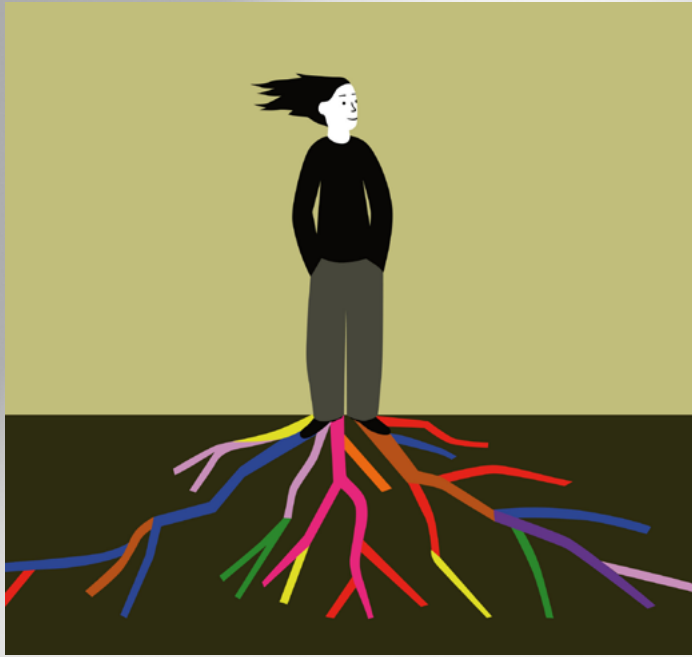
which are capable of withstanding loads greater than the ones that damaged them in the first place.

Another example is the global banking system, which tends to recover from near-catastrophic events (such as the 2008 crisis) in a manner that not only returns to baseline, but also results in a system that is less susceptible to the original risk factors that caused the crisis in the first place (e.g. subprime mortgages and ensuing securitization).

A final example comes from the world of psychology in the form of Post-traumatic Growth (PTG), a condition in which someone who faced a traumatic event later reports a greater appreciation of life, more meaningful relationships, and spiritual development.

With that being said, this raises several questions: can resilience be measured or actively cultivated? Or is it an intrinsic trait which can't be acquired? The truth, as often is the case, is a complicated and non-binary answer that lies somewhere between nature and nurture. Consensus among leading behavioral experts suggests that resilience and anti-fragility, much like happiness, are best attained through indirect pursuit.

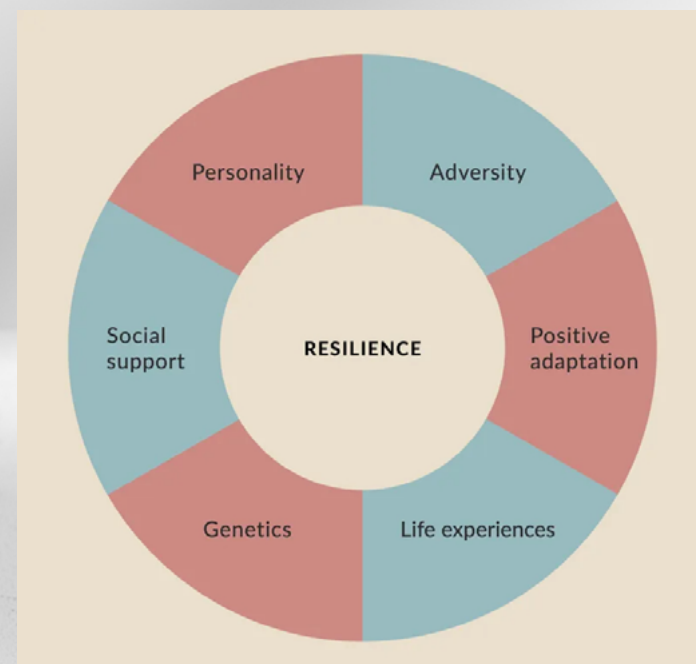
In other words, resilience is a byproduct and not an end result unto itself. A review of the literature reveals that this trait is a function of genetics, personal experiences (especially in childhood), and an individual's current environment and context.



With that being said, our lives are in many ways starkly contrasting with those of generations past such as our parents and grandparents. At this point, the vast majority of young adults and professionals have been confronted with the accusation from our elders of being entitled, undisciplined, selfish, and fragile. While it is undeniable that we enjoy a host of benefits across multiple domains including technology and social justice that prior generations worked hard to realize, it is also true that we are facing challenges that are novel not only to us, but to any generation currently alive.

Although the global economy has grown substantially in size, there is a notable transfer of wealth from younger generations to older generations in the last 20 years. Not only that, but inflation-adjusted purchasing power has also decreased for the current youth, where in many developed countries, the cost of purchasing an average home as a function of median average income has tripled over the course of a single generation.

Before even thinking of buying a house or getting a job, the current generation also faces increased competition when it comes to acquiring acceptances from institutions of higher education, where acceptance rates at top-tier universities in the US have plummeted sharply in the last two decades. While the younger workforce is comparatively higher-skilled compared to



While this shows that resilience may not always be actively developed, it is nonetheless, at least in part, a byproduct of the process of living a balanced life. Such a life would incorporate both challenges and ease, and would honor multiple facets of a well-adjusted existence, as often represented by the SPIRE model.

In this context, the term SPIRE is an acronym which stands for the following components: spiritual, physical, intellectual, relational, and emotional. In fact, studies have shown that the number one predictor of happiness is spending quality time with our loved ones, which extends to the observation that the quality of our relationships is actually one of the primary predictors of anti-fragility. In the words of Dr. Bessel van der Kolk, professor of psychology at the Boston University School of Medicine: "How loved you felt as a child is a great predictor of how you manage all kinds of difficult situations later in life."

Understanding that the relational aspect is only one component of the SPIRE model also indicates that the problem is often not an excess of stress, but rather a lack of recovery. Other components, such as the spiritual component, also provide individuals with a northstar, or a sense of purpose. It is this sense of direction and calling that motivates us to get back up once we are knocked down, which we inevitably will be throughout the course of our lives.

the outgoing generation, this also comes at the cost of increased expectations and workloads in many cases, with digital technology blurring the lines between work and homelife more than ever before.

These adversities coupled with some of the more insidious side effects of social media have led to a variety of mental health difficulties with anxiety and depression rates on the rise among the younger population. Even the most successful members of today's youth are not impervious to these pitfalls, or other less severe but nonetheless trying and prevalent issues such as imposter syndrome.

Considering these struggles, it is clear that the road to

resilience is not paved with a one-size-fits-all approach. While strength, perseverance, grit, and discipline are undeniable components of resilience, it is equally important to acknowledge that flexibility, pragmatism, critical thinking, and in some cases disruptive non-conformity are also part and parcel of resilience.

Dr. Steven M. Southwick, professor emeritus of psychology, PTSD, and resilience at Yale University offers a helpful observation: "Many, many resilient people learn to carefully accept what they can't change about a situation and then ask themselves what they can actually change". Bearing this in mind, I'd like to share some key takeaways for those of you intent on cultivating your own resilience:

Understand that resilience is not exclusively an internal trait, but is largely influenced by the quality of your personal relationships. Few people go far without a strong social support system.

Connect with your sense of purpose - in order to recover, it helps to understand your north star, which is connected to your goals, morals, and often your spirituality. Resilient people tend to be connected to something larger than themselves.

Discern between what you can and cannot change or influence, and focus your energy on the former.

Welcome challenges and adversity and accept that many of our limitations are self-imposed. This should be balanced with sufficient recovery time to prevent burnout or breakdowns.

Remember that there is strength in vulnerability, lessons in defeats, and growth in adversity.

While the current generation of youth may enjoy both benefits and struggles that our forebears have not experienced, creating a better life for incoming generations is arguably the most noble and important calling of our productive years. With that, I would like to leave you with an excerpt from President Theodore Roosevelt's now famous man in the arena speech (originally delivered at the Sorbonne in Paris in 1910) as some fruit for thought:

"It is not the critic who counts; not the man who points out how the strong man stumbles, or where the doer of

deeds could have done them better. The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood; who strives valiantly; who errs, who comes short again and again, because there is no effort without error and shortcoming; but who does actually strive to do the deeds; who knows great enthusiasms, the great devotions; who spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement, and who at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who neither know victory nor defeat."

The Enduring Beauty & Resilience of the Arabic Language

By Yara Alsinan

أودع لسانك واللغات فريما
غنر الأصيل بمنطق الأجداد
جعل الذير ملأ اللغات محاسنا
جعل الجمال وسره فري الغدار

To the unfamiliar ear, Arabic may seem like just a language, characterized by its distinctive sounds and complex script. Beneath the surface, however, lie treasures of profound depth and rich heritage. The Arabic Language surpasses mere communication. With roots delving deep into history, it is a beautiful ode to centuries of resilience and creativity, a vessel of generational knowledge, a bearer of stories and a carrier of cultural heritage. Holding within its letters the essence of grace and intellect, Arabic is the delicate yet powerful poetry, the vibrant and elegant prose, the countless

narratives and discoveries transcending eras and boundaries. In the dynamic realm of human communication, where languages transform and fade with the ever-changing needs of society, the Arabic language stands as a symbol of resilience and continuity, evolving through time while maintaining its distinct identity. As we navigate through the intricate beauty and eloquent history of the Language, we will unravel its exemplary influence and resilience as a thread connecting the past, present and future.

At the heart of Arabic identity lies its linguistic legacy – a legacy shaped by centuries of cultural interchange and potent art. Since its earliest indications in the 8th century BCE in the Arabian Peninsula, Arabic has served as a bridge between innumerable generations over history. In its nature, Arabic is a language so deep that it unravels emotions skillfully, a musical pattern so articulate with meaning. Such depth has allowed the language to evolve to a means that honors eloquence, as Arabs engaged in competitions of poetry, language aesthetics and expression. With those competitions, the nomadic lifestyle of the region's inhabitants, and most importantly, subsequent Muslim conquests, Arabic has propagated and evolved over time.

With that reach, the Arabic Language flourished on multiple fronts, forming a bonding link between scholars, traders, and scientists from different backgrounds. During the Islamic Golden Age, the breakthroughs of Arab scientists like Ibn Sina, Al Khawarizmi, and Al Kindi solidified Arabic's position as a leading language of intellect. With time, Arabic has developed, adapted and influenced numerous languages worldwide, including Spanish, Persian, and Turkish. Additionally, the

West has adopted numerous concepts and words from Arab culture and language, including algebra, guitar, carat, and many others, underscoring the language's far-reaching influence.

Most notably, the Arabic Language is renowned for its illustrious literature, specifically its indelible mark on poetry. A multifaceted tradition spanning various time periods, Arabic poetry is defined by its linguistic beauty and intelligent rhymes. Its sophisticated metaphors skillfully weave colorful scenes and convey emotions, captivating readers globally. Classical Arabic poetry flourished in the pre-Islamic era, where poems' tone and vernacular would imitate the difficult living conditions, reflect the harsh desert environment, and delve into themes of romance, praise, elegy and countless more. Aside from its aesthetic significance, pre-Islamic poetry serves as a crucial source in terms of language in grammar and vocabulary, while also providing a historical record of politics and culture. Other ages like The Abbasid Caliphate witnessed the blossoming of poetic expression, reflecting themes of the era's customs and social state. From the legendary Mu'allaqat of Antarah Ibn Shaddad to the timeless verses of Almutanabbi, the profound depth of Arabic poetry coupled

with its lyrical genius makes it truly unparalleled in vividly capturing human emotions and experiences. Despite the diverse styles, Arabic poetry continues to address contemporary issues while exemplifying the power of language and the beauty of expression. Its influence extends beyond linguistic and cultural boundaries, highlighting its universal appeal. Its lyrical genius makes it truly unparalleled in vividly capturing human emotions and experiences. Despite the diverse styles, Arabic poetry continues to address contemporary issues while exemplifying the power of language and the beauty of expression. Its influence extends beyond linguistic and cultural boundaries, highlighting its universal appeal.



Arabic calligraphy elevates writing to a sacred and captivating art, celebrating the language's written form.

Given its rich history and influence, it's important to recognize that the Arabic language is not monolithic. On the contrary, alongside the official Modern Standard Arabic (MSA), or Al Fus'ha, Arabic encompasses numerous colloquial dialects. These 30+ dialects vary considerably in vocabulary, pronunciation, and syntax not only between countries, but even within neighboring regions and cities. Each dialect is a reflection of its speakers, representing connections to their origins, history, geography and cultural experiences. Despite these differences, Arabic remains a powerful, enduring force unifying Arabs worldwide and creating an undeniable connection among them, painting a vivid portrait of diversity within unity.

And yet, in recent years, the rapid pace of globalization has posed a challenge to the preservation of Arabic and safeguarding its position in all the fronts at which it once led. This phenomenon is exacerbated by the ascendance of English as a globally dominant language, inciting a palpable inclination among the younger generation to prioritize proficiency in this lingua franca. This shift is not indicative of Arabic's demise; but the allure of the Western world, coupled with the pragmatic state of the global job market is slowly causing a drift away from Arabic. Many young Arab parents inadvertently contribute to this trend by placing greater emphasis on English in their children's upbringing, taking their native tongue for granted. Although cultivating bilingualism is practically essential nowadays and undeniably offers countless advantages, including exposure to diverse cultures and heightened cognitive skills, maintaining a sensible balance is crucial. While millions adeptly navigate bilingualism and maintain competence in both languages, a disconcerting number find themselves gradually relinquishing their grasp on Arabic, imperiling their connection to its culture and linguistic intricacies.

Despite these growing trials, the Arabic language remains secure in its status as an eternal and enduring force, far from the precipice of peril. Throughout history, Arabic has survived formidable threats, notably enduring colonization across numerous Arab nations. Today, it remains steadfast in the face of change and globalization. A cornerstone to its perseverance is its pivotal role as the official, unifying language of Islam, revered

and understood by millions as the foundation of their faith. With 456 million native speakers and serving as the liturgical language for 1.9 billion Muslims globally, Arabic commands a profound influence on both secular and spiritual fronts. Recognized as one of the official languages of the United Nations, Arabic ranks sixth among most spoken languages worldwide. Its presence in official documents, media, and everyday life underscores its unyielding significance. Indeed, Arabic remains a language of incomparable richness, however, its brilliance and versatility are vastly underutilized and underappreciated today, emphasizing the necessity to maintain it.

Arabic transcends the mundane confines of language. Rather, it is the profound embodiment of Arab identity – a culmination of centuries of cultural heritage that go beyond the boundaries of time. And here lies the imperative to preserve the Arabic tongue, to recognize its boundless influence, to ensure the upcoming generations not only uphold, but comprehend and appreciate the ethereal beauty of their language, and eventually their culture and identity. To realize that, despite the rise of global tongues, Arabic stands as an irreplaceable melody of history. To embrace Arabic and fathom a fraction of its brilliance is to embrace the very essence of Arabhood and have roots woven in rich culture and heritage. Arabic is not just a language. Through history's highs and lows, from its golden ages to facing adversity, it has prevailed as a strong, unwavering, yet adaptable force. It is a timeless symphony of resilience, a testament to our shared identity - and if we lose that, what would we have?



LEVERAGING HOBBIES *FOR PROFESSIONAL EXCELLENCE*

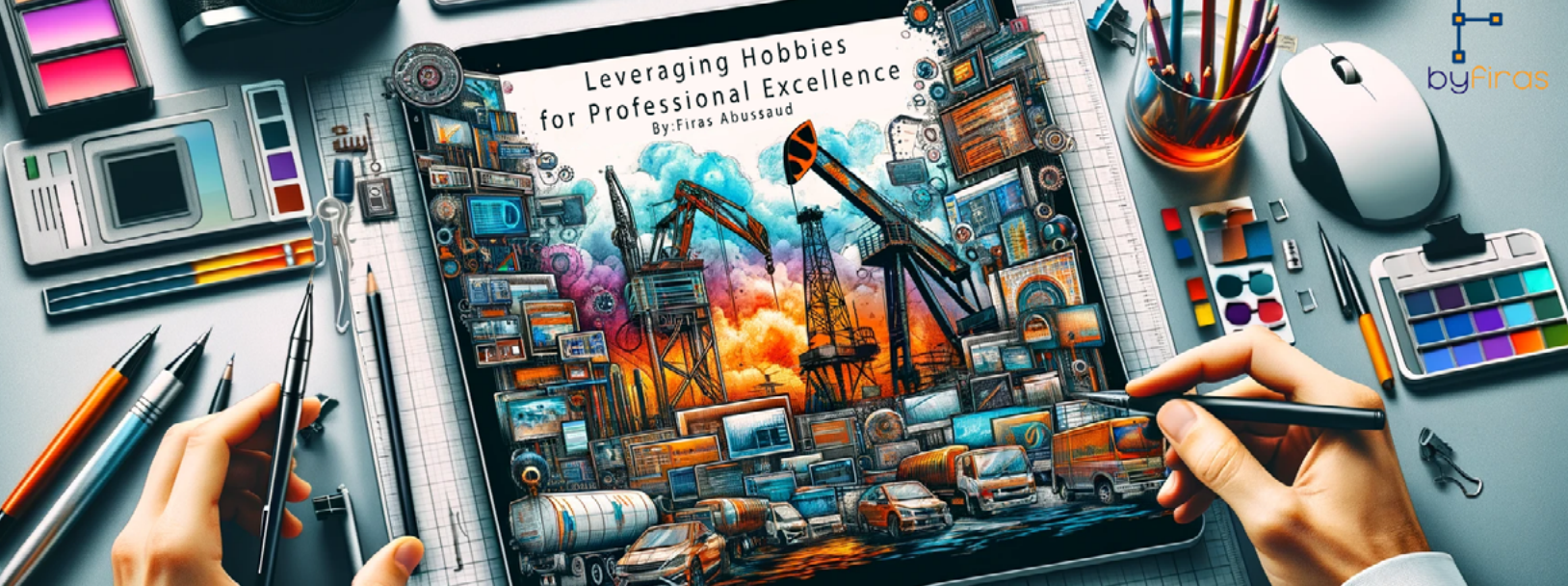
By Firas Abussaud

In the challenging field of the oil and gas industry, finding ways to stay sharp and inspired is crucial. As a petroleum systems analyst, I find that incorporating hobbies into my professional life not only adds enjoyment to my work but also enhances my productivity and success. Photography, graphic design, and theater are three hobbies which have proven particularly useful in my career.



Leveraging Hobbies
for Professional Excellence

By: Firas Abussaud



THE VISUAL IMPACT OF PHOTOGRAPHY AND GRAPHIC DESIGN

Photography, more than just a hobby, is an exercise in problem-solving and attention to detail. In the field, I'm constantly challenged to find the right angle, lighting, and composition. These skills translate directly to my work in petroleum systems analysis, where I need to identify and resolve issues efficiently. The creative thinking fostered by photography helps me approach problems from different perspectives, a key advantage in application development and maintenance.

Graphic design is a hobby which demands, and consequently sharpens precision and visual communication skills. Choosing the right elements, such as colors and fonts, as well as achieving visual appeal, are critical aspects of graphic design. These skills are directly beneficial to my work, particularly when I am involved in the visual side of petroleum systems analysis, such as enhancing presentation slides, or advising on user interface. This attention to details ensures excellence in our applications' visual and functional properties.

Strategically leveraging these hobbies allows me to sharpen my collaboration and communication skills, ultimately contributing to increased productivity and success within the dynamic team environment. The skill of visual expression simplifies the explanation of complex technical concepts.

THE TRANSFORMATIVE POWER OF THEATER

My journey with theater began with a childhood paradox. In kindergarten, I was known as the "naughty kid" – lively, outspoken, and often too energetic for my own good. This label, however endearing it might have seemed, had an unforeseen consequence. As I grew older, the fear of being perceived continually as "the naughty boy" led me to retreat into a shell of shyness. I became extremely aware of how others saw me, and this awareness transformed my once energetic nature into silence.

It was in the world of theater that I found my escape and, more importantly, my transformation. The stage became a territory where I could express myself without the fear of judgment or labels. Each role I played was a step away from my shy persona, gradually rebuilding the confidence that had been overshadowed by my early childhood label. Theater allowed me to redefine myself, not as the 'naughty kid' nor the shy boy, but as a confident individual with a voice. The initial fear of standing on stage in front of an audience gradually transformed into a thrilling excitement. It was in this world of scripts and roles that I discovered my voice and learned the power of self-expression. The journey from backstage to the spotlight mirrored my journey from silence to confidence.

Beyond self-expression, theater taught me the art of communication. I learned to articulate my thoughts clearly and to engage with others effectively – skills that have become invaluable in my professional life. This skill has been particularly beneficial in my professional life, aiding me in negotiations, presentations, and everyday interactions.

Theater also imparted a deep life lesson: in the grand play of life, people remember the characters that made an impact, be they heroes or villains. This realization shaped my approach to my professional life. I strive to be a character who leaves a positive mark, one who contributes constructively and is remembered for good. It's about playing a role that goes beyond old labels and becomes part of a larger, meaningful narrative. In addition, theater taught me the power of perception and

self-reinvention. Just as I had moved beyond the 'naughty kid' label to rediscover myself on stage, I learned that in our professional lives, we have the power to redefine ourselves and our roles. This lesson has been crucial in my career, allowing me to approach challenges with a mindset not confined by past labels or perceptions.

CONCLUSION

As a petroleum systems analyst, I have found that integrating my hobbies into my professional life has significantly boosted my work performance. They have not only provided creative channels but have also sharpened my skills in the tech-driven world of oil and gas. For instance, the lessons learned from photography and graphic design in attention to detail and visual communication, combined with the confidence and adaptability gained through theater, have all seamlessly translated into my professional environment. From confidently speaking in meetings to effectively collaborating on complex projects, these hobbies have enriched my professional toolkit. They weren't just hobbies but journeys of personal growth and professional development. They have taught me to communicate clearly, work with diverse teams, and adapt quickly to unforeseen situations, all thanks to the diverse experiences gained from my personal passions. For those seeking to enrich their professional skills, I cannot recommend enough the exploration of hobbies like Photography, Graphics design and theater. They are not just pastimes but pathways to unlocking greater potential in one's career.



SPE-KSA Section Participation at IPTC 2024:

Society of Petroleum Engineers, Kingdom of Saudi Arabia section (SPE-KSA), participated in IPTC 2024 which took place in Dhahran Expo on February 12th, 13th, and 14th. The booth attracted over 700 visitors from a diverse range of backgrounds including academia, oil & gas experts, and young professionals. The booth hosted a range of engaging activities throughout the duration of the event, including a puzzle hunt, podcasts, and trivia games. Participating at the IPTC presented a great opportunity for the SPE-KSA to engage and network with its current members as well as prospective members.

On February 12th, 13th, and 14th, SPE-KSA participated in the world-renowned International Petroleum Technology conference IPTC 2024 that was held in Dhahran Expo. The conference provided an ideal venue to network and engage with great minds that are interested in the Oil and Gas industry.

The SPE-KSA booth attracted 700+ visitors from diverse backgrounds ranging from academia to young professionals and oil and gas experts. The team from SPE-KSA were able to engage in discussions and exchange ideas with existing members and prospective members, with the aim of boosting the SPE-KSA section and unlocking its full potential.

Executive leaders from Saudi Aramco including Executive Vice President of EXPEC & Drilling Abdul Hameed Al Dughaiter, Senior Vice President of Exploration Samer Al Ashgar, Senior Vice President of PE&ED Waleed Al Mulhim, Senior Vice President of Northern Area Oil Operations Dawood Al Dawood, and Director of P&FD Hamad Al Marri, along with

SPE president Terry Palisch, and SPE CEO Simon Seaton visited the booth and celebrated the 65th anniversary of the SPE-KSA section along with the team. In their visit they praised the team for the great efforts that they have accomplished over the past years, and shared prospects of their vision for the society as a whole.

Throughout the duration of the conference, the SPE-KSA team arranged a number of activities to keep the participants engaged. The activities included trivia games and a puzzle hunt that were held at the booth, and tested the participants' knowledge in SPE-KSA section's three main focus areas: Digitalization, Sustainability, and Energy. In addition, SPE-KSA in collaboration with Flipping the Barrel, hosted captivating dialogues that were focused on the Oil and Energy industry within the Middle East.

February 12-14 | Dhahran Expo

2024

Kingdom of Saudi Arabia



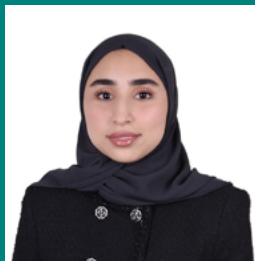






VOLUNTEERS SPOTLIGHT

The volunteers of SPE-KSA (Society of Petroleum Engineers - Kingdom of Saudi Arabia) play a vital role in the local community by organizing events, sharing knowledge, and supporting the professional development of members. This segment highlights the passion, dedication, and valuable contributions of the SPE-KSA volunteer base.



RAWAN TAHIFH

Petroleum Engineer
Technical & Professional Programs
Saudi Aramco, Safaniya Reservoir
Management Department

"Engaging with SPE-KSA has been a transformative experience, profoundly contributing to shaping my professional journey and fostering invaluable personal growth. Through its myriad opportunities and resources, SPE-KSA plays a pivotal role in enhancing technical aspects and refining essential soft skills crucial for success in the energy industry. SPE-KSA's emphasis on professional development is instrumental in refining organizational and communication skills, empowering young professionals to navigate complex industry landscapes with precision and confidence. By participating in organizing workshops, discussion sessions, and networking events, I have gained practical insights and invaluable knowledge from seasoned professionals, contributing significantly to my professional growth. Moreover, SPE-KSA provides a supportive platform for young professionals to cultivate a robust professional network. Through interactions with industry peers and leaders, I have established meaningful connections that have broadened my horizons and unveiled new avenues for growth. Beyond professional development, SPE-KSA strongly emphasizes giving back to the community and driving positive change. Through its various outreach programs and mentorship initiatives, SPE-KSA enables professionals to leverage their expertise and support others, thereby contributing positively to the industry and broader societal framework. As I reflect on the opportunities afforded to me, I am grateful for SPE-KSA's unwavering commitment to nurturing the growth and development of young professionals like myself, and I eagerly anticipate continuing my journey with SPE-KSA, contributing meaningfully to the industry while growing alongside this esteemed community in the future."



NAYEF ALMOGBEL

Petroleum Engineer
Technical & Professional Programs
Saudi Aramco, Southern Area
Reservoir Management Department

"My journey with SPE-KSA is an immensely enriching experience that allows me to develop professionally and personally by deepening my knowledge and skills. By volunteering with SPE-KSA, I had the opportunity to connect with experienced professionals from various backgrounds, all while learning from the diverse perspectives and experiences of my fellow team members. The sense of shared purpose within SPE-KSA is profound, fostering a collaborative environment where everyone's contributions are valued and celebrated. One of my unforgettable experiences with SPE-KSA was volunteering in the T&PP end-of-term dinner meeting of 2021-2023. Being part of the volunteering team during that event was an immensely fulfilling experience that allowed me to showcase my leadership skills while fostering community within the organization. Every aspect of the event presented unique challenges and opportunities for growth due to interacting with a diverse group of attendees and working with an amazing group of passionate people. SPE-KSA showed me that collaborating with fellow volunteers and industry experts strengthens our bonds and amplifies the impact of our collective efforts, giving me a sense of accomplishment and pride at the end of every event, which is truly unparalleled, reaffirming my passion for volunteering."



GHAIDA ALJUHANI

Petroleum Engineer
Logistics | Human Capital | Student
Outreach
Saudi Aramco, EXPEC Advanced
Research Center

"My involvement in volunteering with SPE-KSA has played a significant role in my leadership development, providing numerous opportunities to lead teams executing impactful initiatives and motivating fellow volunteers through diverse projects. Being entrusted by various SPE-KSA committees, such as Human Capital Management, Logistics, and Student Outreach, has been deeply fulfilling, allowing me to embody the organization's values across various events and activities. This experience has been invaluable, igniting my passion for empowerment, influence, leadership, and collaboration and shaping my career path profoundly. Through this engagement, I've navigated complex challenges and fostered a steadfast commitment to serving both the organization and the wider community. Volunteering with SPE-KSA has enhanced my skills and enabled me to contribute meaningfully to impactful initiatives. Additionally, it has expanded my professional network, connecting me with individuals dedicated to positive societal change. The combined experience of leadership and community service has profoundly influenced my personal growth, sparking a desire for continuous learning and contribution. It has motivated me to pursue excellence in both my professional and community endeavors, empowering me to drive positive change within and beyond the organization."



ASEEL ALNASER

Petroleum Engineer
Student Outreach
Saudi Aramco, Southern Area
Reservoir Management Department

"Being a volunteer with SPE-KSA has been an immensely rewarding and enriching experience. Over the past three years, I had the privilege of working with multiple committees, including Student Outreach, Young Professionals, and Technical & Professional Programs. Engaging in the Student Outreach Committee allowed me to inspire and guide aspiring young talents, fostering their passion and potential in the industry. My involvement with the Technical & Professional Programs Committee has provided invaluable learning experiences, enhancing my skills and keeping me updated on industry trends. Each part of my involvement with SPE-KSA has enhanced my professional growth, allowing me to make meaningful contributions to the organizations and the wider community while expanding my expertise. The fulfillment derived from these volunteering opportunities goes beyond personal achievement, reinforcing the importance of giving back and nurturing the next generation of talent, especially with the Student Outreach Committee. I express my heartfelt gratitude to SPE-KSA for these opportunities and encourage young professionals in the industry to join the organization, where they can grow, learn, and contribute to the advancement of the field."

DANAH
ALBAHUSAIN

*Data Scientist
Human Capital Management | Public Relations
Saudi Aramco, Petroleum Engineering Application
Services Department*

"I joined SPE-KSA as a passing volunteer in March of 2023, partaking in T&PP's last few technical dinner meetings for the past term. Although my involvement was brief, I quickly grew fond of the society's mission and accomplishments. Inspired by my initial experience, I joined two committees in the following term, Human Capital Management and Public Relations, to continue contributing meaningfully to the society's growth. Through these committees, I've had the opportunity to collaborate with passion in fostering knowledge-sharing and building meaningful relationships. This sense of solidarity and shared purpose has instilled a deeper appreciation for the critical role in shaping this industry's future. Coming from Aramco's Digital & Information Technology admin area, with an academic background in Computer Science & AI, I initially felt disconnected from the oil and gas industry. My path to SPE-KSA seemed off-road; however, the society helped bridge the gaps in my role as a data scientist in this industry by exposing me to key transformations and forging connections with the people at its core. It brought me closer to the business I serve, and for that, I am grateful. I want to express my heartfelt gratitude to Seba Almaghlouth, 2021-2023 Technical & Professional Programs Chairperson, whose guidance paved the way for my introduction to SPE-KSA and set me on this fulfilling journey."



MISHAL ALSANA

*Gas Reservoir Management Engineer
Young Professionals | Event
Management
Saudi Aramco, Southern Area Gas
Reservoir Management Department*

"During my exciting journey with SPE-KSA, in the last three years, I've been deeply engaged with three committees: Technical & Professional Programs, Young Professionals, and Event Management. My volunteering experience with SPE was eventful and enriching, providing substantial insights into handling large-scale events and managing the associated logistics. I honed my project management skills by planning and executing such events. My most recent role as a team lead of "Insights," the newest SPE-KSA Young Professionals committee flagship program, poised to be a vibrant platform for knowledge exchange and networking for young professionals, was definitely memorable. I am passionate about connecting industry leaders in panel sessions with young professionals by offering diverse topics and speakers to cater to a broad spectrum of interests, fostering an enriching environment that empowers young professionals. If I would recommend one thing to any young professional in our industry, it would be volunteering within the SPE-KSA community. It serves as a platform for self-development by allowing them to gain communication, collaboration, networking, and project management skills, boosting their careers."



ALIA ALZAYANI

*Associate Engineer
Public Relations
Saudi Aramco, EXPEC Advanced
Research Center*

"As a volunteer in public relations content and design for SPE-KSA, I had the honor of being part of an organization that has significantly influenced my personal and professional development. Within the Public Relations Committee, my main duty involved managing the organization's digital image, ensuring its accomplishments reached a broader audience of professionals. The most rewarding part of my experience was the continuous opportunity to improve my skills and seek new areas for personal improvement. SPE-KSA gave me the tools and support to illuminate my path toward a brighter future in this dynamic industry. Volunteering with SPE-KSA was a tremendously enlightening experience that gave me a chance to learn new skills, meet new individuals, and make a big difference in various worthwhile initiatives that resonated deeply with me. I broadened my social circle and established meaningful relationships with passionate individuals committed to making a positive social effect due to this experience. The opportunity to work with like-minded people, share information, and contribute significantly to the community was invaluable. Along with widening my horizons, it gave me a strong sense of contentment and purpose. Serving as a volunteer for SPE-KSA is an experience that promoted both professional and personal development while having a noticeable impact on the energy industry."



MUSTAFA KIDWAI

*Petroleum Engineer
SandRose Magazine
Saudi Aramco, Southern Area
Reservoir Management Department*

"Working in a company with deep roots in the local community, we are privileged with a bevy of opportunities to have a bearing on endeavors beyond the traditional scope of our work. Through my time in SPE-KSA over the past three years, I have had the chance to see firsthand the breadth of effort that goes into planning and organizing large-scale deliverables from scratch. My main avenue into this perspective has been SPE-KSA's official publication, SandRose Magazine. Each edition of SandRose feels like an industrial factory where every member-led station works in tandem to feed the production line and deliver a pristine product. One of my frequently handled stations is the technical papers' section, a veritable information goldmine. Through my exposure to technical papers, I continue to learn about the latest technologies in our industry and establish contact with subject matter experts who can help implement said technologies in my day-to-day work. In the previous SPE-KSA term, I was also allowed to work with the Diversity & Inclusion Committee, now known as the Human Capital Management Committee. This experience was just as enlightening as it featured a more event-based approach, thereby allowing the nurture of a different skill set. To this day, receiving printed versions of SandRose Magazine remains surreal because it serves as tangible proof of all the volunteers' hard work. I look forward to keeping this momentum through this term and beyond."



DALAL ALASKAR

**Petroleum Engineer
Admin Coordination
Saudi Aramco, Northern Area
Reservoir Management Department**

"As an active member and team leader within the SPE-KSA Admin Coordination Committee, I profoundly appreciate the opportunity to collaborate with a cohort of exceptionally talented professionals. Leading the Monthly Reports Team has been a significant responsibility and a privilege. Under my adept guidance, the team successfully delivered numerous comprehensive reports, each serving as a testament to our unwavering commitment to excellence and meticulous attention to detail. These reports stand as indispensable assets for the SPE Board and upper management, offering invaluable insights into SPE-KSA activities while encapsulating the collective dedication of our team. Overseeing all reporting efforts for SPE-KSA has been a delight, allowing me to document our section's progress and share our successes transparently with stakeholders. Collaborating with such a driven and motivated team has been profoundly enriching, and I am thankful for the opportunity to contribute to SPE-KSA's continued success. Together, we are effecting tangible change, and I eagerly anticipate continuing our collective journey towards further growth and achievement."



Years of

Growth Quest: McKinsey Project Management Essentials Workshop

By Farah Altarouti, SPE-KSA T&PP Team Member

SPE-KSA Technical & Professional Programs Committee (T&PP) successfully conducted a workshop in collaboration with McKinsey & Company, under the title of "Project Management Essentials". Held on January 29th and 30th, this event featured distinguished facilitators from McKinsey & Company, imparting profound insights on leadership and adept project management. The immaculate organization by the T&PP Growth Quest team signifies the commencement of their dedicated term for 2023-2025. With an attendance exceeding 100 mid-career professionals from diverse technical domains, the workshop aimed to provide participants with a comprehensive understanding of project dynamics and invaluable insights serving as a foundational framework. It placed a strategic emphasis on the systematic progression through distinct project phases, highlighting the significance of integration management and disciplined leadership in navigating change. This curated emphasis equips professionals with a sophisticated toolkit, specifically designed to steer the challenging contours of project dynamics, ultimately fostering success within the nuanced paths of their professional journeys.

The extensive workshop was conducted over two days, each focusing on a major, pertinent theme. The first day undertook the topic of leadership, diving into leadership challenges frequently faced by professionals, while tackling productive solutions, technical and adaptive leadership styles. The talk was followed by a discussion of organizational awareness, touching on the importance of empathy in leadership, in addition to the Four Levels of Listening and relationship management. Transitioning seamlessly into the second day, the workshops' participants were split into groups, each having a dedicated facilitator to foster hands-on coaching and guidance. The sessions were focused on project management, underlining the five stages

of planning, important success factors and project integration. Furthermore, the facilitators discussed case studies, highlighting through them the types of a project's lifecycle, key steps to manage changing activities, in addition to scope validation and quality control.





Throughout the two-day workshop, T&PP was honored to host distinguished speaker, Matt Trenchard, an internationally accredited Professional Certified Coach boasting a decade of expertise. Renowned for his profound impact, Trenchard collaborates with both multinational and Gulf-based organizations, guiding individuals to cultivate self-awareness and capitalize on their potential. Moreover, the workshop hosted three esteemed facilitators, namely, Rana Abunour, Ibrahim Alsultan, and Mohamed Essam, each lending their distinct expertise to enrich the professionals' collective knowledge in the different facets of project management. Rana Abunour, a distinguished Senior Consultant holding the prestigious PMP certification, brings a wealth of experience in executing expansive transformation programs across diverse industries such as manufacturing, supply chain, industrial gases, and banking. Ibrahim Alsultan is a seasoned Senior Capabilities & Insights Analyst, actively contributing to a myriad of topics, including digital advancements and public sector dynamics across the GCC and broader Middle East region. Concluding this impressive team is Mohamed Essam, a highly regarded consultant hailing from McKinsey & Company's Cairo Office. He possesses six years of extensive expertise in Real Estate development, construction, and facilities management. Together, these distinguished speakers have woven an intricate tapestry of insights, illuminating the workshop with their collective wisdom and experience.

Proven by the attendee's testimonies, the two-day delivered valuable lessons to professionals, while also fostering fruitful discussions and productive training opportunities. This workshop served as a poignant testament to SPE-KSA's unwavering commitment to nurturing effective leadership and refined project management skills.



SPE-KSA Technical & Professional Program NMO Roundtable

Discussion: AI for Net-Zero

By Safiyah Alghamdi and Sharefah Alsultan, T&PP Team Members

“Can we train machines?”—a question that is considered to be rhetorical now— was a perplexing dilemma in the 1950s, reflecting the profound advancements in machine learning and artificial intelligence today. These technologies are now crucial, possibly indispensable facilitators of the ongoing energy transition. This rhetorical query, proposed by Dr. Thamer Alsulaimani, a Lead Reservoir Engineer at Saudi Aramco, framed the opener of the second NMO session, successfully organized by the SPE-KSA Technical and Professional Programs committee. Held on April 29th, this thought-provoking session titled “AI for Net-Zero” brought together industry-leading experts who delved deep into the integration of AI within the energy sector.

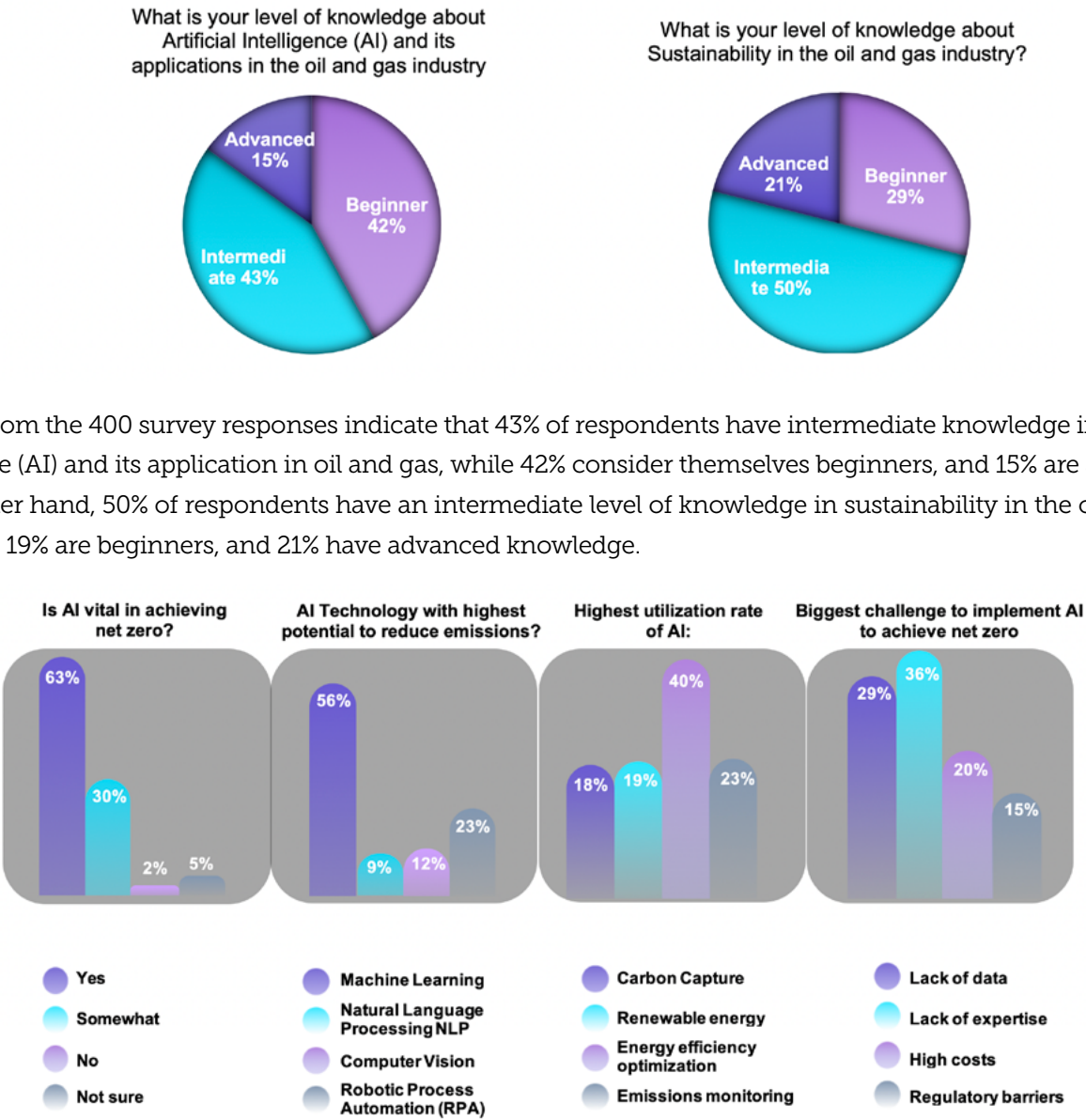
The session was moderated by Halah Alasmari, a Senior Geophysicist at Saudi Aramco, and enriched by esteemed speakers from diverse backgrounds including Ibrahim Albaloud, CEO of Fathom.io, Dr. Stephanie Lee, Digital Sustainability Champion at SLB and Dr. Thamer Alsulaimani, Lead Reservoir Engineer at Saudi Aramco. Shedding light on the results of a survey conducted by the NMO team, the session commenced with significant insights about the public perception of AI’s role in achieving net zero emissions. Key findings indicated that 63% of respondents view AI as vital for reaching these environmental goals, particularly in reducing emissions. A notable concern identified was the “lack of expertise,” highlighting a gap in the current digital transformation efforts within the industry. Mr. Albaloud acknowledged these challenges and emphasized the need for increased collaboration between the industry, research and development sectors, and digital service providers to enhance expertise. Dr. Lee discussed the recent efforts, including her company’s, in fostering partnerships and employing AI through Digital Sustainability Platforms, which provide detailed emissions data. This approach underscores a significant shift towards integrating digital tools internally and with clients to foster sustainability.

Dr. Alsulaimani discussed the boundless opportunities AI presents in transforming the industry—enhancing efficiency, minimizing downtime, improving well performance, and aiding in reservoir management decision-making. These benefits underscore AI’s significant market value within the energy sector. To fully harness this potential, Mr. Albaloud suggested that oil and gas companies should focus on developing a data-centric infrastructure. All panelists concurred that robust data infrastructure, coherent governance, and continual acquisition of digital assets are crucial for integrating AI effectively within the industry. Dr. Alsulaimani further highlighted the “Cost of No Action”—the expenses energy companies incur by not adopting AI technologies, which could otherwise propel sustainability goals and solidify energy security. Dr. Lee added that the industry’s extensive data collection could only be fully leveraged through AI, which offers deeper insights into such vast datasets.

Ultimately, the adoption of AI in the rapidly evolving oil and gas sector comes with several pressing concerns, including data security, privacy, and management. Mr. Albaloud reiterated the importance of governance to address these issues and projected that upcoming encryption technologies would likely mitigate many of these concerns. Dr. Lee pinpointed another critical aspect—the potential loss of the human element with mass AI deployment. She emphasized the importance of identifying areas where the human intuition and interaction are irreplaceable.

The discussion concluded with echoing ways to maximize AI’s potential in aiding the energy transition. The consensus was that training the workforce and establishing a solid foundation in data management—with effective data aggregation, consistent recording, and elimination of bias—are essential. The dialogue was sealed with an agreement that AI is at the forefront of driving the energy transition and is pivotal in achieving net zero goals, affirming its role as a key player in this transformative era.

Anticipating Impact: Insights from the Pre-Event Pulse Survey



When asked about the role of AI in achieving net zero emissions in the energy sector, 63% of respondents believe it to be a vital source, and 56% think machine learning is the AI technology with the highest potential in reducing emissions.

Of the 400 surveyed, 40% believe energy efficiency optimization to have the highest utilization rate of AI, while the rest of the respondents, in fifths, believe that each of carbon capture, renewable energy, and emissions monitoring will have the highest rate of applications in AI.

Lastly, respondents were asked what they think is the biggest challenge in implementing AI solutions to achieve net zero emissions in the oil and gas industry. 36% believe it to be due to lack of expertise, while 29% think it is linked to lack of data, and 15% assume that regulatory barriers are the cause, and a third believe it is due to high implementation cost.



SPE-KSA Student Outreach Activities

ENERGY4ME certification workshop educates youth about the energy industry in IPTC 2024

On Saturday, 3rd of February, 2024, Student Outreach Committee held the fifth Energy4me Program. The workshop introduced 30 industry professionals from different backgrounds to the Energy4me program pillars and provided them with the necessary training to become Energy4me ambassadors and educate the public about energy and the industry.

The agenda included an out-of-the-box ice-breaker activity followed by an overview of the Energy4me program and its importance to our local and global community. Five exciting hands-on science experiments were conducted; Exploring Oil Seeps, Core Sampling, Exploring Porosity, Perforated Well Casing, and Getting the Oil Out. After each experiment, an open discussion was held to further clarify the associated oil and gas concepts and ways to deliver these experiments in future workshops to students and teachers as Energy4me ambassadors.

After the workshop, the trainers and trainees expressed the added benefits from the workshop that played a significant role in their development as Energy4me ambassadors. Additionally, they shared their gratitude for this rewarding experience and showed their enthusiasm to perform these experiments in future school visits and conferences.

By the end of the program, all trainees qualified to receive the Energy4me Training certificate. With the addition of 30 new Energy4me ambassadors, the local team is now composed of 48 certified ambassadors ready to educate the public about energy and put a face on the industry.

In IPTC 2024, SO Committee led the Energy4Me Program: Train the Teacher". In the workshop, teachers

conducted several first-hand interactive experiments to learn more about oil and gas concepts and processes. The workshop's aim is to spread energy knowledge in an accessible manner, spark curiosity, and draw upcoming young talent to the sector. The program was well-attended, with over 50 teachers representing more than 5 international schools within the Kingdom. The knowledge gained by teachers is expected to be transferred to over 3000 students to attract bright young people to the exciting world of engineering.



SPE-KSA's T&SA Committee Delivers Eid Boxes to the Community

SPE-KSA Trips and Social Activities (T&SA) Team successfully organized and held the "Eid Boxes" initiative on March 29th, 2024. The initiative aims to emphasize on the role of SPE-KSA in adhering to social responsibility and endorsing solidarity among the community.

In a testament to the dedication of SPE-KSA members and families toward the community, SPE-KSA Trips and Social Activities (T&SA) delightfully held and organized "Eid Boxes" initiative. In the sacred month of blessed giving, SPE-KSA T&SA Team cultivates hands to collaborate and give to the community. Members and their families were pleased to organize and accomplish the Eid Boxes initiative to package and distribute Eid Boxes to beneficiary families. The initiative aims to share happiness and spread joy among the community in the wakening of Eid Al-Fitr.

SPE-KSA Trips and Social Activities Team would like to express heartfelt gratitude and extend thanks to everyone involved in the success of this event.

SPE-KSA Collaborates with Local Organizations to Distribute Ramadan Boxes

SPE-KSA Trips and Social Activities (T&SA) Team in collaboration with the Ministry of Human Resources and Social Development - Eastern Region Branch, Eastern Province Welfare Organization, Eithar Association, and Panda Retail Company (Hyper Panda) successfully organized and held the "Ramadan Boxes" campaign on March 8th & 9th, 2024. The campaign aims to emphasize on the role of SPE-KSA in adhering to social responsibility and contributing to the welfare of the community.

Since its inception, SPE-KSA has always been adhering to the social responsibility and to the welfare of the community. On an annual Ramadan occasion, SPE-KSA Trips and Social Activities (T&SA) Team has been actively involved in social welfare projects with outmost dedication to support the society fostering strong ties and solidarity throughout the community.

SPE-KSA T&SA in collaboration with the Ministry of Human Resources and Social Development - Eastern Region Branch, Eastern Province Welfare Organization, Eithar Association, and Panda Retail Company (Hyper Panda) delightfully held and organized "Ramadan Boxes" campaign.

The campaign and packaging activities were held over two days (March 8th & 9th), contributing to the social welfare by packaging around 1,000 aid boxes serving over than 500 beneficiary families.

The event had more than 100 volunteers contributing over than 1,000 volunteering hours. SPE-KSA Trips and Social Activities Team would like to extend its thanks to Ministry of Human Resources and Social Development - Eastern Region Branch, Eastern Province Welfare Organization, Eithar Association, Panda Retail Company (Hyper Panda) and everyone involved in the success of this event.



SPE-KSA Arranges Ramadan Breakfast (Iftar) for Elderlies at Social Welfare House

SPE-KSA Trips and Social Activities (T&SA) Team in collaboration with the Social Welfare House in Dammam delightfully organized and held "Ramadan Breakfast (Iftar) for Elderlies at Social Welfare House" on March 24th, 2024. This collaboration aims to emphasize on the role of SPE-KSA in adhering to social responsibility and advocating for inclusion and solidarity throughout the community.

In continuation to its collaborative role adhering to the social responsibility and the welfare of the community during the blessed month of Ramadan, SPE-KSA Trips and Social Activities (T&SA) Team in collaboration with the Social Welfare House in Dammam delightfully organized and held "Ramadan Breakfast (Iftar) for Elderlies at Social Welfare House" on March 24th, 2024. A group of 30 passionate volunteers shared joy and companionship partaking Iftar with residents at the Social Welfare House in both male and female sections. Following to the Iftar, the team has been admitted to a walkthrough to explore the Welfare House facility and residential sections. SPE-KSA Trips and Social Activities Team would like to express its deep gratitude and extend its thanks to the Social Welfare House in Dammam and everyone involved in the success of this event.



SPE-KSA Contributes to Saudi Green Initiative with Tree-planting Campaign

SPE-KSA Trips and Social Activities (T&SA) Team in collaboration with Saudi Aramco Trees and Green Parks Division and Eastern Province Municipality (Amana) successfully organized and held the "Saudi Green Initiative" Tree Planting event on March 2nd, 2024 at two locations: Aramco Environmental Park 3 and Al-Hazm Yard Public Park. The event aims to support the Saudi Green Initiative to spread awareness, combat climate change and preserve the environment for future generations.

In the wake of Vision 2030 launch in 2016, the Kingdom of Saudi Arabia has embarked on a journey toward a more sustainable future. The inauguration of the Saudi Green Initiative in 2021 marks a significant milestone, aligning environmental protection, energy transition, and sustainability programs to offset and reduce emissions, expand clean energy usage, and combat climate change. SPE-KSA Trips and Social Activities (T&SA) Team has been actively involved in the Saudi Green Initiative, dedicated to social responsibility fostering sustainable practices and environmental awareness throughout the community.

SPE-KSA T&SA in collaboration with Saudi Aramco Trees & Green Parks Division and Eastern Province Municipality (Amana) organized a tree planting event, contributing to the initiative's goals by planting over 500 seedlings of various local and native trees.

The event commenced at first location, Aramco Environmental Park 3, at 9:00 AM with participant registration and a warm welcome. The opening remarks by Mr. Maher Rahayyem, Chairman of SPE-KSA, emphasized on the role of SPE-KSA in supporting Saudi Vision 2030 followed by an event briefing by Mr. Abdurrahman Almubayedh, Senior Agriculturist, showcasing an overview of the Saudi Green Initiative and the prominence of planting and greening in shaping a sustainable future for the generations to come. After the briefing, participants actively engaged in both tree planting and area cleanup, underscoring their commitment to sustainable development. After the completion of the planting activities at Aramco Park 3, participants headed to the second location, Al-Hazm Yard Public Park. Upon arrival, the location briefing by Mr. Nashmi Alshatri, Eastern Province Municipality (Amana) Engineer, emphasized on the significance of planting and shade trees in preserving green spaces. Afterward, participants enthusiastically resumed the planting activities implanting shade trees and flowers throughout the park.

The event had over 125 participants and 9 volunteers. SPE-KSA Trips and Social Activities Team would like to extend its thanks to Saudi Aramco Trees and Green Parks Division, Eastern Province Municipality (Amana) and everyone involved in the success of this event.





Student Chapter

Mohammed Alyousef, King Fahad University of Petroleum & Minerals

*Petroleum Engineer, College of Petroleum Engineering & Geosciences
President, SPE KFUPM Student Chapter*

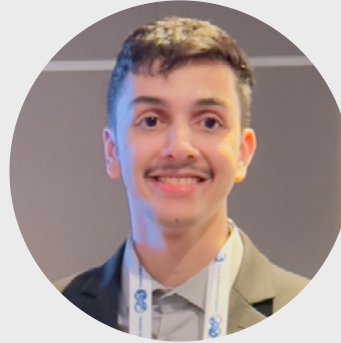
WHAT DOES SPE MEAN TO YOU?

Being the president of the SPE (Society of Petroleum Engineers) student chapter at KFUPM (King Fahad University of Petroleum & Minerals) for the term 2023-2024 has been a truly transformative experience. It has brought me closer to the SPE and its mission. Through our chapter, I have learned that volunteering is not just about helping others; it is about creating a positive impact that can change perspectives and lives.

During my presidency, I have witnessed the profound impact we can make on people's lives through the society. It has been a school of leadership, teaching me invaluable lessons in listening, execution, and effective leadership. It has provided me a platform to lead, listen to others, and execute plans while positively influencing students' professional development and social skills.

SPE KFUPM Student Chapter has not only allowed me to make a positive impact on students and faculty members, but it has also been a catalyst for my professional development. In addition, it allowed me to broaden my network, connect with industry leaders, experts, and students from around the world. These connections have been pivotal in my ongoing learning journey, affording me the chance to meet and learn from exceptional individuals.

I consider SPE a significant part of my personal and professional growth, enhancing my leadership skills and industry knowledge. I highly recommend that every student join this remarkable society, which is not just about the oil and gas industry but offers much more personal and professional development.



WHAT ARE YOU LOOKING FORWARD TO IN THE FUTURE?

My involvement with the SPE KFUPM Student Chapter has been transformative, shaping both my academic path and personal growth. I have gained invaluable insights into the oil and gas industry, honed my leadership skills, and cultivated a robust professional network. This experience has deepened my understanding of the industry and empowered me to apply theoretical knowledge to real-world scenarios.

Moreover, my engagement with the chapter has allowed me to impact the broader university community meaningfully. As the president of the SPE student chapter at KFUPM, I have led initiatives that have



benefited our members and enriched the university. The chapter has fostered a culture of learning, collaboration, and innovation on campus by organizing technical workshops and conferences and promoting social and professional development activities.

Furthermore, SPE has provided me with unique personal and professional growth opportunities. For instance, participating in the regional student paper contest in Oman was a significant milestone, and I was honored to secure first place in the BSc division. This achievement led to me being selected to represent the Middle East and North Africa region in the international student paper contest at the SPE Annual Technical Conference and Exhibition in Louisiana, USA. This experience was truly enriching, providing valuable guidance and mentorship that shaped my research endeavors and career aspirations.

WHAT ARE YOU LOOKING FORWARD TO IN THE FUTURE?

In the future, I am excited about transitioning from student to young professional and continuing my journey with SPE as a member of Saudi Aramco. As a Saudi Aramco-sponsored student, I am eager to apply the knowledge and skills I have gained through the university chapter to contribute to the company's mission and projects. I look forward to engaging with SPE in a new capacity, collaborating with industry experts, and furthering my professional development. Additionally, I eagerly anticipate the international student paper contest in the US, where I will have the opportunity to represent not only my country but also the Middle East and North Africa region. I am committed to representing the region in the best possible way, showcasing the talent and innovation present in our industry.

Overall, I am optimistic about the future and the opportunities it holds for growth, learning, and making a positive impact in the field of petroleum engineering, both within Saudi Aramco and on an international platform through SPE.

Student Chapter

Raghad Hanbazazah, Prince Mohammad bin Fahd University

Mechanical Engineering, Engineering Department
President, SPE PMU Student Chapter

WHAT DOES SPE MEAN TO YOU?

Technologies and methodologies that drive progress in the energy industry. As the president of the SPE (Society of Petroleum Engineers) student chapter at PMU (Prince Mohammad bin Fahd University), I believe that SPE holds significant importance to me and our entire chapter. SPE represents a community of professionals, scholars, and enthusiasts dedicated to advancing the field of petroleum engineering and its related disciplines. It serves as a platform for networking, knowledge exchange, and professional development.

For us at PMU, SPE embodies our commitment to excellence in petroleum engineering education and practice. It's not just an organization; it's a gateway to opportunities, resources, and connections that empower our members to thrive in their academic and professional pursuits.

SPE fosters a culture of innovation and collaboration, encouraging members to explore new ideas. Through SPE, we access a wealth of technical publications, conferences, workshops, and training programs that keep us abreast of the latest developments in our field.

As the president of our chapter, I take it as my personal mission to inspire, guide, and support our members in realizing their full potential. I believe that by fostering a culture of leadership and service, we can make a significant impact in our community and contribute to the greater good.



For us, SPE is not just an acronym; it's a symbol of our collective passion, dedication, and aspirations in the field of petroleum engineering. It's a privilege to be part of this esteemed organization, and I'm honored to lead our chapter in upholding its values and advancing its mission.

HOW HAS SPE INFLUENCED YOUR JOURNEY AS A STUDENT AND IMPACTED THE BROADER UNIVERSITY COMMUNITY?

As a student at PMU, SPE has profoundly influenced my journey and made a significant impact on the broader university community. Being with the SPE student chapter for three years in a row, I've experienced



firsthand the invaluable opportunities for personal and professional growth it provides. Through its various events, workshops, and networking opportunities, I've enhanced my knowledge of petroleum engineering and related fields, developed essential skills, and connected with industry professionals. This exposure has enriched my academic experience and prepared me for future career endeavors.

Not only has SPE been instrumental in my personal growth, but its presence within the university community has also fostered a culture of collaboration and innovation. By organizing seminars, guest lectures, and technical competitions, SPE has created an environment where students can exchange ideas, engage in hands-on learning experiences, and stay updated on the latest industry developments. This benefits SPE members and inspires other students to pursue excellence in their respective fields, fostering a sense of pride in our university's academic achievements.

Overall, SPE has played a pivotal role in shaping my academic and professional journey at PMU while positively impacting the broader university community by promoting collaboration, innovation, and excellence in education and practice.

WHAT ARE YOU LOOKING FORWARD TO IN THE FUTURE?

As a student graduating this semester with a bachelor's degree in mechanical engineering and serving as the president of the SPE student chapter at PMU, I look forward to embarking on the next phase of my journey with excitement and determination. Professionally, I am eager to apply the knowledge and skills I have acquired throughout my degree program to real-world engineering challenges. I am enthusiastic about pursuing opportunities where I can contribute to innovative projects, collaborate with industry professionals, and make a positive impact in engineering.

Additionally, I am excited to continue my involvement with SPE beyond graduation. Serving as the chapter president has been a rewarding experience, and I am

eager to stay connected with the SPE community as an alumna. I look forward to supporting future generations of SPE members, sharing insights from my professional experiences, and contributing to advancing petroleum engineering education and practice.

On a personal level, I am excited about the prospect of lifelong learning and growth. I am committed to continuously expanding my knowledge, honing my skills, and pursuing opportunities for personal and professional development. I am optimistic about the future and motivated to seize every opportunity for

QUOTES FROM STUDENTS:

"As the president of the SPE PMU Student Chapter, I've witnessed firsthand the power of collaboration, innovation, and passion within our community. Together, we've turned challenges into opportunities and dreams into achievements, shaping a legacy of excellence that will inspire generations to come."

- MUSAB FADEL, SPE PMU STUDENT CHAPTER PRESIDENT

"Being part of the SPE PMU Student Chapter has been a transformative journey, where knowledge meets opportunity, and growth becomes inevitable."

- HATAN ALESSA, SPE PMU STUDENT CHAPTER VICE PRESIDENT

SandRose Reviews

By Basmah Alotaibi, Senior Editor SandRose Magazine

In this issue of SandRose Reviews, we delve into the dynamic theme of resilience. This force shapes extraordinary moments and journeys, from the high-speed world of Formula One to the strategic maneuvers of corporate acquisitions. Whether you prefer reading a book, watching a documentary, or listening to a podcast, we hope you gain a new perspective on the power of tenacity and perseverance. Check out our top picks below!

For future editions, we will be taking 'Recs from our Readers,' if you'd like to submit your reviews, send them to SandRose (sandrose@spe-ksa.org) for a chance to be featured.

Recs from our Readers

We're delighted to share an assortment of mixed-media submissions from our SandRose community; delve into the fantastic selections from our readers in this edition below!

Books



The Alchemist by Paulo Coelho

Is it a heartfelt odyssey that stirs the soul? It tells the story of Santiago, a shepherd who embarks on a quest for his dreams. Along his journey, he encounters love, loss, and self-discovery. Through the book's enchanting prose, we are reminded to seek our own destinies, trust our intuition, and embrace the beauty of the unknown. It is a timeless reminder that our hearts hold the key to unlocking the extraordinary within us.

- Muhannad Alawaz,
Petroleum Engineer

Film



Jiro Dreams of Sushi (2011)

This documentary captures the life of Jiro Ono, an 85-year-old sushi master and owner of Sukiyabashi Jiro, a Michelin three-star restaurant nestled in a Tokyo subway station. It vividly portrays Jiro's lifelong devotion to perfecting sushi craftsmanship, highlighting his meticulous attention to detail and relentless pursuit of excellence. The story resonates with me because it exemplifies the profound dedication and passion one can have for one's craft. Jiro's commitment to sushi goes beyond mere occupation; it's an art form and a continuous challenge to better oneself, reflecting a universal theme of striving for perfection in one's endeavors, no matter the field.

- Abdulrahman Alharbi,
Petroleum Engineer

Podcast

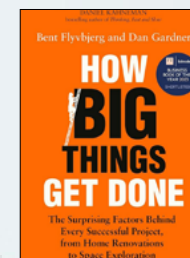


TEDx: تعلم متى ترحل

Discover the insightful talk by Anmar Motawa, a Co-Professor at KAU's Faculty of Communication and Media, on TEDx. Learn about handling small problems without letting them bother you, knowing when to address issues or let them go, and avoiding making small things seem bigger than they are. This talk is perfect for those who want to get better at negotiation, enhance decision-making abilities, master the art of persuasion, and cultivate inner tranquility.

- Abdulaziz Botwaibah,
Petroleum Engineer

Books



How Big Things Get Done: The Surprising Factors Behind Every Successful Project, from Home Renovations to Space Exploration

by Bent Flyvbjerg and Dan Gardner

"We're good at learning by tinkering—which is fortunate because we're terrible at getting things right the first time."

In How Big Things Get Done, Bent Flyvbjerg and Dan Gardner masterfully explore the extensive and often uncertain world of mega projects. From sprawling infrastructure initiatives to novel technological developments, the authors provide a critical analysis of why some projects achieve remarkable success while others face unexpected failures, emphasizing the critical need for realistic planning and transparent risk assessments.

Through a series of case studies, Flyvbjerg and Gardner bring to life the "iron law of megaproject management," a principle that warns against the common hazards of underestimation and excessive optimism. The detailed narratives stress the complexity of these large ventures and highlight the human factors influencing their outcomes. Recently shortlisted for the 2023 Financial Times Best Business Book Award, How Big Things Get Done serves as a valuable guide for anyone interested in bringing grand visions to fruition.

If you enjoyed How Big Things Get Done, you'll enjoy Leaders Eat Last by Simon Sinek.

Film



Senna (2010)

"There is no compromise. You give everything you have, everything, absolutely everything."

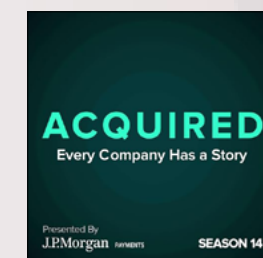
In the realm of Formula One, few names resonate as profoundly as Ayrton Senna's. The documentary Senna, directed by Asif Kapadia, artfully portrays the intensity and spirituality of one of motorsport's most legendary figures using a compilation of archival footage. The film allows Senna's own words and actions, such as his famous quote, 'I am not designed to come second or third. I am designed to win.' and his daring overtakes on the track to narrate his story, providing an authentic and emotionally nuanced view.

From his modest beginnings in kart racing to his tragic end at the 1994 San Marino Grand Prix, the film portrays not just a racer but a national icon and a relentless advocate for safety and integrity in the sport. The film explores Senna's fierce rivalries, notably with Alain Prost, and his bold confrontations with the sport's governance, illuminating his profound influence both on and off the racetrack.

Senna is more than a sports documentary; it is a testament to a legacy that continues to inspire courage and excellence.

If you enjoyed Senna, make sure not to miss out on Arnold.

Podcasts



Acquired (Ongoing)

"Losers make excuses. Winners make adjustments."

Acquired, hosted by seasoned venture capitalists Ben Gilbert and David Rosenthal, offers an insightful look into the histories and strategies of influential companies and their leaders. Each episode is a meticulously researched exploration of the business dynamics that drive success in the global market.

With their backgrounds as investors, Gilbert and Rosenthal provide a unique perspective on the podcast, dissecting complex business operations and high-stakes acquisitions with three hours of deep insight. Their expertise enriches the narratives, making complex concepts accessible and transforming company stories into tales of ambition and achievement.

This podcast stands out for its comprehensive analyses of major deals, providing listeners with rare insider perspectives. It is an indispensable asset for aspiring venture capitalists and anyone intrigued by high-level business strategies. With its blend of historical depth, analytical rigor, and engaging storytelling, Acquired is both a podcast and a masterclass in business.

If you enjoyed Acquired, be sure to listen to The Tim Ferriss Show.

DIAMOND



PLATINUM



GOLD

HALLIBURTON





Sandrose Readers' Lens



IN THIS SECTION, WE PROUDLY SHARE PHOTO SUBMISSIONS FROM OUR VIBRANT COMMUNITY, BEAUTIFULLY ENCAPSULATING THEIR REMARKABLE TALENT FOR CAPTURING MOMENTS THAT RESONATE WITH THEM

"High in the Annapurna Mountain range, where the air is thin and the winds are strong, stands a grove of pine trees. These trees are ancient and gnarled, their bark weathered by centuries of storms. But despite their age and adversity, they remain evergreen, a symbol of resilience and hope."

– Elias Alzayer, Photographer

Follow Elias on Instagram @eliasalzayer

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