

Leadership Insights

How the 4th Industrial Revolution Toolbox can Propel the Saudi Vision 2030?

- H.E. Dr. Khaled Bin Saleh Al-Sultan, President, KA-CARE
- Yousef Abdullah Al-Benyam, Vice Chairman & Chief Executive Officer, SABIC
- Darren Davis, Chief Executive Officer & President, Ma'aden
- Mohammad Abdullah Abunayyan, Chairman, Arabian Company for Water & Power International (ACWAPower)
- Adam Sieminski, President, KAPSARC

Moderator: Sean Evers, Managing Partner, Gulf Intelligence



Sean Evers (SE): Does industry in Saudi Arabia need to access the tools available under the 4IR umbrella and is it doing enough to stay ahead of the digital transformation curve?

H.E. Dr. Khaled Bin Saleh Al-Sultan: The 4IR can be harnessed effectively to improve the energy sector, and in particular the power sector.

We can manage the electricity sector better by predicting energy consumption and production through data accumulation. The electricity sector in the kingdom is already becoming more digitalized and decentralized and consumers are able to select from different sources, such as renewables and fossil fuels. They can use the 4IR to manage their demand and costs more

efficiently. Today, 18%-20% of total energy consumed in the world is for electricity. By 2030, this number is expected to reach 26%-30% and 50% by 2070.

SE: Aramco, SABIC's new partner, recently opened the first 4IR Center in the kingdom, announcing in doing so that it was not an option to be left behind. What are your thoughts?

Yousef Al-Benyan: There are a lot of people that don't have clear definitions of what exactly the 4IR is all about and we need to make sure we are speaking the same language when we judge whether we are moving fast enough. At the same time, we need to also be candid with ourselves and manage expectations. There are many countries that have still not even benefited from the previous three industrial revolutions – the light industry, heavy industry and technology, computers and the internet. There is no doubt traditional industries in Saudi Arabia are being disrupted and we need to be mentally prepared as to how we are going to manage our organizational research and development (R&D) and organizational competence. If we just look at the chemical industry, it has had 4% year-on-year growth, producing 100mn tons of chemicals. What is the energy source for this? It's national gas and we have a national mandate to increase our efficiency. Today, we are only using 30% of our asset data, so the challenge for chemicals in this space is that we don't have real time visibility of our assets liability nor a proven digital support system. This is where the 4IR is going to be very crucial. It can provide clear forecasted outcomes and will enable us to reveal the hidden relationship between our assets.

SE: Is SABIC actively pursuing this?

Yousef Al-Benyan: We are but we have not yet reached deployment. If you look at the research, we are talking about a minimum 8%-12% of improvement in EBITDA. For the last three years, we were able to generate more than \$7 billion revenue from investments in technology innovation. But as of today, we still don't have a connected, general information system for our assets. If we can achieve that, this is where the real improvement will be for our companies and for the market.

SE: ACWA Power seems to be doing everything very fast and making headlines in recent years with its innovative and pioneering pricing records on power generation, and solar to power. Would you say that speed is the defining factor for success in the 4IR digital transformation? What are your thoughts on the accelerator that the 4IR can be?

\$7bn

For the last three years, SABIC said more than \$7 billion in revenue has been generated from investments in technology innovation.

30%

Despite this significant economic value, SABIC is only using less than a third of its asset data. The challenge is creating more real time visibility and a proven digital support system.

#1

Saudi Aramco's Uthmaniyah Gas Plant (UGP) has been recognized by the World Economic Forum (WEF) as a "Lighthouse" manufacturing facility; a leader in technology applications of the 4IR. The company is the first energy company globally to be included in this select group of manufacturing sites.

2070

Up to 20% of the total energy consumed worldwide is for electricity. By 2030, it could reach 30% and 50% by 2070. Rolling out digital awareness and implementation as per the 4IR is pertinent to efficiently meeting this demand, as well as economic and environmental targets.

Mohammad Abunayyan: Our industry does not have an option. Organizations should have a dedicated department capable and knowledgeable to lead the impact. Who would have believed a few years ago how far we have come with solar and renewables. We have to be part of the 4IR because it is an enabler to competitiveness and value addition. We have two operation centers, one in Jeddah and one in Dubai. Why? Because we want to have all our 49 plants operating today, connected in real-time, with real data, to enable us to monitor information, to benchmark and share knowledge more efficiently. Thirteen of ACWAPower's plants are currently connected to these two centers. By the fourth quarter of this year, all 49 assets will be.

SE: What is the consequence of lagging behind?

Mohammad Abunayyan: Either you want to be proactive, engaged and invest in the future and really commit to change and ride this wave and advantage. Or not, and possibly be bankrupted. It's also about how to leverage it for your own business to improve competitiveness, reliability, and serving your customer in a timely manner. That is the key to keeping ahead. People have to be open-minded and accept change. There are industries that are going to retire and new ones that are going to be realized. If you look at the disruption happening in the private sector in Saudi Arabia today, we are sitting on a bullet train. If you don't take that risk, you will be left behind. What we do need to do is have the right positioning to be able to synchronize appropriately with all this change.

SE: KAPSARC is a major knowledge center here in Riyadh. Clearly, a lot of people are still struggling with the concept of industry 4.0 as part of the 4IR. Can you play a facilitating knowledge role?

Adam Sieminski: For a non-governmental organization like KAPSARC that is involved in doing research in the field of energy, we need continuous learning and to make sure that the skillset of researchers are updated. It's no longer about getting your degree and going to work; the toolbox keeps changing. This is what we're trying to promote. Training and development that will help enable the industry and others to fulfill the goals of the 4IR.

H.E. Dr. Khaled Bin Saleh Al-Sultan: Like many ideas in the Vision 2030, the human resource aspect is extremely important. We can always purchase technology, put in rules and regulations and encourage the industrial sector to use industry 4.0. But we will always be short of well-prepared people. The challenge is to prepare young people in the skill of lifelong learning. If there is one value

to industry 4.0, it is that it is very interdisciplinary. You won't find an electrical engineer or a physicist, or a biologist who can do all of this. We need to introduce more interdisciplinary courses and training to make sure people can fit because most likely you will find that it is teams implementing projects in the future, rather than individuals.

SE: The National Industrial Development and Logistics Program (NIDLP) has established capacity development centers specialized in industry 4.0 technologies to enable leading industrial players to use modern technologies that will assist them and increase competitiveness and productivity. Would it be useful to go one step further and introduce a rating system to measure and rank companies and institutions on their success in adopting the 4.0 toolbox? How would Ma'aden react if they were informed they would be rated on the use of 4.0 technologies today?

Darren Davis: Commercial pressures are the best way to implement industry 4.0 in companies. Government can certainly help enable, but it would be best focused by encouraging new industries. We already see initiatives to finance SMEs, for example. That is what is going to create the new jobs. That's where these people of the future, the young, will find jobs that don't yet exist. One concern in industry 4.0 at a national level is that there's a danger there could be fewer jobs as a result. That's the opposite of what's needed in the kingdom. We need more jobs here and that's why there should be a focus on encouraging new industries.

Mohammad Abunayyan: It's not just about the number of jobs we create – it's about quality and better value jobs. 4.0 is great news. We should create roles that can bring young talented Saudis to jobs that they can aspire to. Of course, we must always bear in mind 4.0 cannot be adopted in all industries. But Saudi Arabia's economy is changing and we need to have the latest technology so we can transition and become a player on the global market.

Yousef Al-Benyani: I would not be supportive of the idea that governments should be checking companies on innovation nor for increased regulations for 4.0 or any future technology transformation. It's the market, commercially, that has to pressure companies and they need to be judged based on the value they bring.

SE: But government could take away the inefficiencies that delay the implementation of 4.0.

Yousef Al-Benyani: That's a different angle. That could be part of an incentive program, like



“ We can always purchase technology, put in rules and regulations. But we will always be short of well-prepared talent.”

**H.E. DR. KHALED BIN SALEH AL-SULTAN,
PRESIDENT, KA-CARE**

49

ACWA Power wants to have all its 49 plants that are operating today connected in real-time with real data to monitor information, benchmark and share knowledge more efficiently. Thirteen of the plants are currently connected to two such operation centers - one in Jeddah, one in Dubai - with all connected by the end of this year.

x3

The main drivers of the thought process behind Vision 2030 are: a thriving economy, a vibrant society and an ambitious nation. Digital excellence is pivotal to the kingdom achieving these goals.

enabling efficiency and pushing companies to leverage technology and innovation. For example, in our case, we have excellent incentivizing energy efficiency programs. Everything that we do is basically about risk management but as we enter into the 4.0 race, we should also bear in mind that it is not necessarily the big fish who win, because they can be rather slow. This is where SMEs are going to be crucial for the future transformation of technology. At SABIC, we have an executive reporting to the CEO, taking into account digitization and innovation and assessing how this can influence not only our assets, but everything that we do. We need to look at the business – oil refineries, petrochemicals and chemicals – as an connected system and not just from one angle.

Adam Sieminski: What we really want to measure is how companies are performing financially and within the social context in the kingdom. We need to be careful on what we pick from the industrial 4.0 toolkit; not everything is appropriate for each company. The main drivers of the thought process behind Vision 2030 are a thriving economy, a vibrant society, and an ambitious nation. That includes creating space for non-governmental organizations like KAPSARC and others. Everyone in the kingdom – industry, academia and government – has to be jumping on this and making it work. I sense that there's a strong feeling, certainly among the young people, about making this a success.

**Edited transcript*