



## Optimising the biggest natural resource - people

Investing in skills and expertise could help the Middle East's petrochemical firms grow, writes Ossama Tawfick

BY OSSAMA TAWFICK | [COMMENT](#) | PUBLISHED: 27TH DECEMBER 2015 AT 10:14



With increasing pressure on manufacturers to reduce energy costs, improve production performance and maximise margins, those industry leaders who invest in the skills matrix and empower the workforce with innovative technologies are transforming their fortunes.

An efficient business relies on organisational excellence. In order to extract maximum value from a manufacturing asset, one needs to adopt best practices and use innovative technology. However, it is the investment in skills and expertise that ultimately determines successful outcomes.

The Middle East has traditionally relied on expat engineers to fulfill key roles in the oil and gas, petrochemical and engineering and construction markets. With competition from Asia, finding the right skills is becoming more challenging. As the demand for specialist skills increases, many companies and governments are investing heavily in nurturing indigenous workers. While academia still plays a role in developing the next generation of engineers, local talent is being employed by Middle East companies to work and train on the job and build experience.

An effective skills matrix defines people's proficiency with specific knowledge and expertise required to fulfill roles within the organisation. This talent can be channelled into vital areas of the business, such as cost estimating, process engineering, planning and scheduling, process safety and data analytics and many other essential disciplines.

The Middle East has enormous scope to set industry standards for refining, petrochemicals and chemicals by achieving operational excellence from design through production. The combination of investment in human resource and technology helps drive commercial opportunities and overcome fluctuations in energy prices and feedstock availability.

For example, with the growth in emerging markets for basic chemicals and plastics, Middle East operators can maximise potential with advanced process optimisation software and empower local talent to drive efficiencies across the enterprise that will give the region's manufacturers a greater strategic advantage.

## Integrating the workforce

The traditional reliance on an expatriate workforce has led the region to further its efforts to develop indigenous engineering staff and empower them with cutting-edge software technology.

The Gulf Cooperation Council petrochemicals sector employs a large number of engineers. According to data released by the Gulf Petrochemicals and Chemicals Association, the industry – along with its supporting sectors in the Arabian Gulf region – employed over half a million people through direct and indirect jobs in 2013.

Strengthened by a rapidly expanding petrochemical sector and multi-billion dollar investments, Saudi Arabia's petrochemical industry directly employed 83,700 people, accounting for over half of the Gulf's petrochemical industry's workforce. The United Arab Emirates is the region's second largest market in terms of people, employing 38,100 professionals, just over 25 per cent of the region's chemical employees.

Saudi Aramco is a good example of a company with a vision for the future. It has a professional on-boarding programme (POP), designed to accelerate the development of new engineering graduates, with the aim of integrating them seamlessly into the workforce. The programme teaches young engineers both technical and non-technical skills, covering interpersonal effectiveness and an understanding of Saudi Aramco's business.

A company's effective organisation relies on planning and sharing expertise across the network to ensure the value of knowledge is retained and forms a sustainable programme of best practice and employee excellence.

For instance, the world's largest chemical complex ever built in a single phase, Sadara in Jubail Industrial City, Saudi Arabia, is a game changing venture developed by The Dow Chemical Company and Saudi Aramco. Its related investments are expected to generate thousands of direct and indirect employment opportunities and as of July 2014, Sadara had more than 3,200 employees, the majority being Saudi nationals.

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## Technology supports workforce development

Managing talent across a diverse workforce is challenging. The complexities of a multi-generational and multicultural staff mean that employers must embrace a range of measures to ensure that employees are regularly trained and fully equipped with the appropriate tools. This will create a productive working environment and bridge the gap between retiring veterans and the new generation of engineers entering the jobs market.

Software innovation brings enormous benefits to achieving operational excellence. In turn, integrated applications are also equipped with built-in training tools and online help facilities to enable both experienced and new engineers to seamlessly collaborate across the operation in areas, such as developing a conceptual design, flare systems analysis and capital project estimating.

Software tools today are intuitive, easy-to-use and packed with innovations that automate many menial tasks, allowing engineers to concentrate on areas that help meet operational and economic goals.

The big prize gained from enabling staff with appropriate tools is that integrated process engineering delivers tangible results, including improving process engineering workflow around 10 per cent; 30 per cent capital and operating cost savings due to inherently better designs; a 10 – 20 per cent improvement in engineering quality and a 10 – 20 per cent improvement in engineering efficiency.

Breakthrough innovations in the latest releases of integrated software allow users to become proficient faster, bringing the power of optimisation to more people in engineering, operations, planning and scheduling across the enterprise.

## Organisational excellence

To future-proof long-term business in the oil, gas and petrochemicals industry, the main focus needs to be on optimising a company's biggest asset – people.

An integrated holistic approach to human resource planning, organisational optimisation and operational efficiency enables companies to respond quickly to challenges in the plant and improve business margins.

We all understand the importance of making the most of the natural carbon resource in the energy industry. Ultimately, investment in the local human resource is widely understood to build crucial skills and create a sustainable legacy for future generations.

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