



ANDY GIBBINS:

# Innovation Isn't Optional

The downstream sector will not boom forever; eventually companies will have to innovate to survive

**I**wrote last month about the importance of operational excellence to the future success of refining and petrochemicals in the Middle East. Many companies have recognised this and are taking very positive steps to address all aspects of performance.

Another key challenge is innovation. We have a challenging scenario developing in terms of the future outlook.

Firstly, future demand drivers for refinery and petrochemical products are changing. For example, China, which has been driving demand growth for petrochemicals in recent years, is starting to come to terms with some of its structural issues. The one child policy has created a major demographic issue, with an aging population, which will require more financial support in terms of healthcare. This will result in less funding being available for the growth projects that have created demand for petrochemicals. Future growth will shift based on demographics. Intuitively, we can sense that societies with growing populations and increasing wealth will become the new demand motors.

Secondly, technology is changing the way we live. Taking one very clear example, the growth of the internet, smartphones and other connected devices has been phenomenal in recent years, changing the way we live, changing the way we work and changing the way we shop.

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We can't be sure of the exact impact on refining and petrochemicals but we can be sure that it will be profound.

Then there are other megatrends, such as sustainability, which will also shape the future of demand. Even closer to our industry, the impact of unconventional oil and gas has been profound. Refining and petrochemicals in the USA are being redefined by this new phenomenon.

So, we have to be mindful of the future when we shape our businesses. This means that we have to start redefining how we carry out our business activities and this means using innovation as a deliberate strategy.

A very good example is the recent start-up by ExxonMobil of its cracker in Singapore. This cracker essentially allows the company to bypass the refining process by processing crude directly into petrochemicals.

The unit can crack anything from light gases to heavy liquids, including crude oil. This reduces raw material costs, energy consumption and carbon emissions.

Another growing trend is 'reshoring'. World resources are diminishing and

environmental concerns are pushing everyone to do more with less. This has prompted a second industrial revolution as companies start looking at how to improve efficiency, enhance flexibility and move manufacturing assets closer to their customers.

Increasingly volatile end-markets are challenging the traditional business models that up until now have been focussed on economies of scale.

Of course, for commodity products, large, integrated facilities are essential to achieve economies of scale but as we move further down the value chain and as we go more into speciality products, the impact of reshoring will increase.

Long and complex global supply chains do not always work in today's volatile environment and increasingly, companies are considering re-shoring assets closer to their local markets and in doing so, do not wish to reinstall technology that is decades old. Manufacturers are increasingly looking to breakthrough technologies such as that of NiTech Solutions, whose innovative plug flow continuous reactors are reshaping the design of manufacturing plants.

Change has been dramatic in recent years and whilst we can't be sure of what the future will bring, one thing is sure - the companies that will be the most successful will strategically foster innovation to stay ahead of the game. [RPMIE](#)

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