

A changing landscape

Future demographic trends will have a huge effect on chemical manufacturers and the way they produce goods

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The big transformations in the nature of consumer markets are creating great opportunities for future growth, if our economy can be adapted to serve their needs.

Chapter nine of our free *Boom, Gloom and the New Normal* e-book looks at the implications for chemical manufacturing of:

- the increasing size of the “New Old” 55+ age group in the West
- the number of young Westerners struggling with higher unemployment
- the increasing number of people moving out of poverty in the developing world.

The Western baby boomers (those born from 1946–70) are the largest and richest generation that the world has ever seen. As they moved into their peak wealth-creating period between the ages of 25 and 54, so the global economy boomed. The US suffered only 16 months of recession in the 25 years between 1982–2007. There was always pent-up demand, as more and more boomers were entering the age group.

But since 2001, the oldest boomers have been entering the “New Old” 55+ age group, when people typically spend less money because their children have left home. And the boomers have to spend less, and save more, because they also have the longest life expectancy in history. Today, we therefore need to focus on the megatrends that will drive future demand growth.

When it comes to water and food, we should focus on reducing the amount of waste and the output that is lost when product is moving to market. In developing new products and services for the over-55s, we should focus on core needs, such as food, water, health, shelter and mobility.

In turn, this will enable us to do more with less. We will reduce carbon footprint, and ensure that our output can be afforded by the maximum number of people.

These changes in market drivers will have a profound effect on how, and where, products are manufactured.

Manufacturing processes will need to change in many companies as we transition to the New Normal. Quality will matter more and more as we move away from the throwaway society of the past couple of decades. So will approaches such as Process Intensification. They involve reducing the size of chemical and plant equipment, and can often enable companies to lower capital and operating costs while reducing waste.

THE HISTORY OF QUALITY

The chemical industry has long been an enthusiastic champion of the importance of quality management. It was one of the first to appreciate the importance of the concept of the “learning organization”, which was originally brought to the West from Japan.

This discovery of the Quality Circle approach, which enabled major improvement in manufacturing processes, led to the flowering of the quality movement in the 1980s and 1990s.

The work of US management consultant W Edwards Deming was enthusiastically adopted by DuPont and ICI, while General Electric adopted the Six Sigma concept across its whole organization.

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This transformation was based on a realisation that quality was not something to be added on after the event via a process of inspection. Instead, it needed to be designed into the whole manufacturing process. Measurement thus became critical, on the principle that management cannot monitor what isn't measured.

Companies also learned how to detect the sources of problems rather than their symptoms. This enabled products to be made to very tight specifications on a consistent basis.



Companies learned how to detect the sources of problems

Equally, safety cultures were revolutionised as it was realized that accidents didn't just happen, and so could be prevented.

WHERE IT WENT WRONG

But in the early 2000s, the quality movement seemed to stall. Many of the people who had launched this revolution retired. More worryingly, some companies began to forget that quality was a process, and had to be reinforced by senior management at every possible opportunity.

China's admission to the World Trade Organization in December 2001 was a key moment in this loss of direction. Under Deng Xiaoping, it had decided to open up to Western markets. China's new leadership then saw an opportunity to short-cut this process by becoming the manufacturing capital of the world. Its advantages were based on the provision of a cheap and highly-disciplined workforce that was prepared to migrate from the rural areas to work in export-focused factories on the coast. But it had very little tradition of manufacturing itself, and certainly had no pretensions to being a manufacturing center of excellence.

China cannot therefore be blamed for what then went wrong.

Many Western companies did take the time, and spent the necessary money, to ensure that Western standards of quality and safety were adopted in the factories that they established in China.



But too many didn't. They instead simply seized on the opportunity to reduce costs. Their aim was to produce goods that were seen as being cheap and cheerful, which was by then becoming the motto of the West's throwaway society.

If a T-shirt only cost \$2, did it really matter if it ripped when it was worn? Many customers only ever intended it to be worn once and thrown away. The credit boom then underway made it easy to borrow more money to spend on new T-shirts.

Today, however, the throwaway society is on the way out. Instead, the key markets for the future are going to be those we detailed at the start of this article.

And in order to serve these markets, we need to relearn what has been forgotten or ignored over the past decade.

Fortunately, there is a good place to start, back in Japan, by studying The Toyota Way. This evolved out of the quality movement, and emphasises that having the right corporate philosophy is the critical starting point. It includes a focus on benefiting wider society, good leadership, and on rooting out inefficiencies through getting everybody involved in processes and problem solving.

The strength of The Toyota Way was highlighted when the company ordered the recall of 9m vehicles in the US in 2009–10, as a result of suspected uncontrolled acceleration and faulty brakes. Extensive official investiga-

tions later concluded that the problems were not the result of manufacturing issues.

But Toyota realized, in the spirit of continuous improvement, that this favorable verdict wasn't enough. Thus Akio Toyoda, Toyota's president, announced in December 2010 that he was establishing a special committee for global quality under his leadership, and was "taking the company back to basics."

The chapter looks in-depth at the 14 principles of The Toyota Way. Its case studies also illustrate how:

- shareholder value was a total waste of time and is at the root of many problems with manufacturing today
- you can be very successful by paying your staff well and by treating them well – for instance, the US wholesale retailer, Costco
- it is possible to completely change your strategic direction in three months if you treat your staff in the right way, which is what happened at Salesforce.com – the online customer-relationship management company
- you can make products very cheaply, that also serve the wider needs of society – for example, the One Laptop Per Child initiative.

Its aim is to help companies ensure that manufacturing delivers the competitive advantage that is required as we transition to the New Normal. ■

 ICIS and International eChem have launched a training course about the New Normal. Visit icis.com/newnormalseminars

To remind you about the key trends behind the shift to the New Normal, cut out this box and stick it on the wall of your control room or workstation.

FACTORS DRIVING THE NEW NORMAL

- The increasing size of the New Old 55+ age group in the West
- The number of young Westerners struggling with higher unemployment
- The increasing number of people moving out of poverty in the developing world

THE NEW NORMAL

Chapter nine of *Boom, Gloom and the New Normal – How Western Baby Boomers are Changing Global Chemical Demand Patterns, Again* is now available free to download at icis.com/NewNormalBook. It is co-authored by Paul Hodges, chairman of International eChem, and John Richardson, director, ICIS training Asia, who both blog for ICIS at icis.com/blog

