

Structural changes and disruptions

The chemical industry and global economy will be going through a difficult and uncharted path for the next decade. Companies must prepare for changes

Peter Young Young & Partners

Geopolitical, economic and industry structural changes and disruptions sometimes happen on a regular basis, but many are random and/or unexpected phenomena. The chemical industry and the world faces more such changes and disruptions today compared to any period other than the Great Depression and the World Wars.

The current rash of disruptions is both deep and broad in scope. Clearly many have been ongoing and predate the current flood of new changes, but many others are relatively new and may last for a long time.

The list is too long to allow for us to go into an in-depth explanation of each one in this article, but we hope this alerts you to what they are, and gives you the approach you can take to deal with them strategically.

What are these structural changes and disruptions and their impact? Which ones are long-term versus short-term? What effect will they have on the chemical industry? What should chemical companies do to deal with

these changes? Can you anticipate future disruptions and prepare for them? What are the current structural changes and disruptions?

Geopolitical

There are growing political/economic tensions between China, the US, Russia, Japan, the rest of Asia and much of the Middle East.

This is contributing to a movement away from globalisation that is driving up costs and slowing global economic growth, since manufacturing and materials may not be sourced necessarily where the costs are the lowest.

In addition, there has been increasing friction between the autocratic and democratic countries. The invasion of Ukraine by Russia and all of its consequences (shortages in energy, fertilizers and certain metals, the potential for a global economic recession, etc) is one part of that struggle.

Global health and structural

In terms of global health, the COVID-19 pandemic has been a major calamity that has harmed millions of people and many industrial sectors. There is still uncertainty on how long the pandemic will continue.

Disruptions in supply chains and logistics, both temporary and long term, have been challenging the supply source strategies such as just-in-time manufacturing and sourcing from the lowest cost countries. Costs have gone up due to rising shipping costs and delays.

Substantial inflation and increases in raw material costs are everywhere. Inflation is at its highest rate in 40 years. As rising costs are passed on to customers, it is only a question of time when demand will be affected. Inflation is also leading to a series of interest rate increases orchestrated by central banks.

There are serious shortages of semiconductors on a global basis and shortages of labour in many countries.

There are clear signs there could be a significant slowdown in the global economy. In

China, the slowing of the economy may worsen due to labour shortages **>>**



from a rapidly aging population, the real estate crisis, high levels of company and public debt, government changes in policy, and their recent COVID-19 surge.

The global shift in automotive production from internal combustion engines (ICE) to electric vehicles (EVs) will drive major changes in raw materials that are used to make cars, where cars are being produced, a reduction in the need for chemicals to support ICE cars (ex: lubricants) and a shift in the demand for gasoline.

Increases in demand and a shortage of supply have driven up the price of oil and gas, which is having a particularly severe impact on Europe. It has become worse as a result of Russia's invasion of Ukraine as sanctions have driven reductions in the availability of Russian oil and gas.

Even under the most optimistic forecasts about controlling climate change, there will be an impact from higher global temperatures (severe weather, rising ocean levels) that will have very negative implications.

The commitment to climate change initiatives and the pressure on oil companies to reduce their expansion of reserves is creating a tension between global energy needs and climate change requirements. We will be facing a serious energy transition gap as the supplies of oil and gas and nuclear energy fall faster than the increase in alternatives (solar, wind, fuel cells, and green nuclear).

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The dramatic increase in the importance of ESG practices, standards and investor pressures are having a huge impact across many elements of the chemical industry ranging from environmental standards, the amount of plastic waste and carbon emissions allowed, the methods of production used, the use of chemicals in end-use products, the composition of workforce/boards of directors/managerial ranks, the reporting requirements for both private and public companies, and access to and cost of capital.

These regulatory changes will require major industry changes and investments, and the ESG initiative across business, regulatory and equity markets will force changes in business practices and reporting.

There are a host of structural changes in the financial markets and underpinnings with cryptocurrency, fintech, and the possible disintermediation of financial institutions, a



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weakening of the US dollar standard, changes in equity market structures (index and passive versus managed), the rise of alternative stock exchanges, and changes in the relative valuation of major industry sectors.

How long will disruptions last?

Before we go into the question of their impact or what companies should do about these disruptions, it is useful to ask how long they will likely last. The following are the disruptions that will likely be short- to medium-term (1 to 3 years). The rest, which are the vast majority, have timeframes that are either long-term or uncertain.

- Short to medium term:
- Substantial inflation and increases in raw material costs
 - Increases in the price of oil and gas
 - Lower supplies of oil and gas and the timing of the transition to alternatives
 - Shortages of semiconductors on a global basis
 - Labour shortages in many countries
 - The invasion of Ukraine by Russia and all of its consequences
 - Rising interest rates by central banks to combat inflation
 - Supply chain disruptions and costs
 - A slowing Chinese economy that may decelerate even further (labour shortages, real estate crisis, debt, government changes in policy, COVID-19 breakout)
 - The COVID-19 pandemic since 2020 and uncertainty on future outbreaks

Impact on the chemical industry

A vast number of chemical companies will continue to be impacted by these disruptions. However, for each company, the impact de-

pends on many factors: the nature of the products they make, how they source raw materials, the markets and countries that they serve, the specific countries in which they operate, whether they are a public company or a private company, whether the products they produce go into products that require semiconductors or are used to make automobiles, and whether they make chemicals that are under the most regulatory or legislative scrutiny.

For example, a type of company that would be the most affected would be a global plastics company that makes single-use plastics and automotive plastics from oil, sells heavily into China and some into Russia, is a publicly traded company and therefore subject to ESG rules and stock market structural changes, and has supply chains that are global.

In this instance, a serious examination of the company's business, operational and financial/shareholder value strategies is critical in order to be successful and to avoid failure.

The business and financial strategies have to be carefully developed on an integrated basis with help from experts who can integrate both.

At the other end of the spectrum, a specialty chemical company that only manufactures in one country, uses local raw materials that are inorganic, serves regional niche markets, and is privately owned will avoid the negative impact of most of the disruptive elements, but will still be impacted by labour shortages, increases in raw material costs, ESG and environmental requirements, increases in interest rates, and any downturn in the local economy.

The majority of chemical companies fall in between those two examples and will be impacted by different combinations of the disruptive factors.

What are companies doing?

Companies are taking a variety of actions to evaluate and combat the negative impacts of disruptive factors. In some cases, companies are being forced to consider changing their business model or are making drastic changes to what businesses they are in.

Companies with a significant part of their business in petrochemicals and specifically in chemicals that are under regulatory attack (single-use plastics, chemicals that are not green, chemicals that have toxicity or work safety issues) are either trying to get out of those businesses by selling or spinning them off or trying to change their profile by moving into green chemistry solutions on their own or via collaborations or joint ventures.

These actions will allow them to favourably change their business profiles and their stock market valuations.

Many chemical companies have increased their raw material inventories, rearranged their supply chains to depend less on suppliers who are far away or become vertically integrated to gain more control of their overall supply chain.

All of the large companies are conducting reviews of their carbon footprint and their ex-

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posure to ESG issues and are making changes to their operations to meet the new required targets and to be able to report their ESG ratings and performance accurately.

How to deal with disruptions

The key to solving this problem is to take an objective look at your company, assess which disruptive factors are impacting or will impact your company, and develop a tailored operational and strategic plan to overcome each of the disruptions. The plan has to be an integration of business and shareholder value strategy. Here are some suggested steps to take:

- Constantly assess the structural changes that are happening or likely to happen at each level: geopolitical, macroeconomic, shifting demand for products currently being made using your chemicals, shifting technologies,

trade policies/practices, regulatory and other societal standards and practices.

- Forecast wisely with the benefit of objective outside perspectives and do not always believe conventional wisdom.
- Try not to invest in businesses where the risk of a destructive structural change is significant with no way to pivot.
- Formulate strategies that benefit from the structural changes and/or protect you from the negative impact of structural changes.
- Integrate your business and your shareholder value/financial strategies.
- Stay ahead of the structural changes and make your moves before changes happen – not when they are already happening.
- Pivot if you can, but if there is no way to protect a business against a structural change, exit early. ■



Peter Young is CEO of Young & Partners, an international investment banking and strategy consulting firm that focuses on the chemical and life science industries. Young & Partners has served a global client base of companies in Europe, North America, Latin America and Asia for the last 26 years. www.youngandpartners.com.

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