Summary of the Young & Partners 33rd Annual Senior Chemical Executive Conference
November 17, 2020
Virtual Conference from 1 pm EST to 4 pm EST

1:00 pm **Welcoming Comments**
Peter Young, CEO and President, *Young & Partners*

1:10 p.m. **Keynote Speakers: "Adapting to Change – The CEO and Board Perspective"**

Speeches
Jim Fitterling, Chairman and CEO, *Dow Chemical Company*
Rajiv L. Gupta, Chairman, *Aptiv PLC,* Former CEO, *Rohm & Haas Company*, Board Member, *DuPont*

Fireside Chat
Jim Fitterling, Chairman and CEO, *Dow Chemical Company*
Rajiv L. Gupta, Chairman, *Aptiv PLC,* Former CEO, *Rohm & Haas Company*, Board Member, *DuPont*

Moderator: Peter Young, CEO and President, *Young & Partners*

2:10 p.m. "**The Industry Outlook: A Journalist's Perspective"**
Joseph Chang, Global Editor, *ICIS Chemical Business*

2:40 p.m. "**M&A and Financial Developments – What is Happening and Why"**
Peter Young, CEO and President, *Young & Partners*

3:20 p.m. "**The Global Chemical Industry: Geopolitical, Market and Supply Insights"**
Dewey Johnson, Vice President, Base Chemicals and Plastics, *IHS Markit*

4:00 p.m. **Virtual Networking Hour**

<u>Adapting to Change – The CEO and Board Perspective</u>

JIM FITTERLING, CHARIMAN AND CHIEF EXECUTIVE OFFICER, DOW INC.

RAJ GUPTA, BOARD MEMBER, DUPONT DE NEMOURS, INC.

Fitterling:

Certainly, this has been a difficult and uncertain year for the entire industry and we have done a good job of adjusting very dynamically as the economy has gyrated through the quarters of this year. I think the industry is becoming leaner and more focused. The pandemic has forced a really fast retrenchment. We hit some really low operating rates and that fleshed out a number of competitive positions. A number of capital projects have been canceled or delayed. At Dow, our growth capital is going to be spent further downstream and on more discrete projects.

I think the industry is going to be more committed to digitalization and Environmental, Social, and Corporate Governance ("ESG"). At Dow, we created digital platforms to make it easier for customers to get access to us and our products. We have been moving more materials through ecommerce channels. We did 150+ innovation webinars with customers some of which included placing digital cameras inside pilot plants so customers could see the new products that we were manufacturing for them. Our ecommerce platform is one of the largest in any industry and we are trying to apply that digital interface to more of our businesses. We've created virtual 3D trade show booths which are immersive experiences for our customers.

Customer demands for innovations that are sustainable are higher now than they have ever been. There is a clear demand for products that help customers reduce their carbon footprint. At Dow, we've reduced our annual carbon emissions by 15% over the past decade. We are looking at new process technologies that will help us to achieve our future emission reduction goals. We joined a number of coalitions aimed at reducing plastic waste. Customers are shifting their purchases towards recycled materials. This is driving innovation and investment in recycling infrastructure. Embracing these trends will extend the growth of the chemicals industry for decades to come.

As a country, we really underinvested in our youth. The demand for Science, Technology, Engineering and Math graduates is increasing exponentially. If we really want to bring manufacturing back to the USA and be more self-sufficient as a nation, we will need the human resources to do so.

Gupta:

This pandemic was a Black Swan event. The number one priority across all the industries that I am exposed to as a board member is employee safety. The second highest priority is ensuring liquidity and the third was achieving breakeven profitability through cost reduction. In the second quarter, automotive production was down 60-70% and the aerospace industry was at a standstill. Meanwhile, the technology and healthcare industries experienced tailwinds. Chemicals serve all of those industries and the impact on company portfolios has been uneven as a result. Communication between stakeholders to respond to these uneven impacts necessarily has increased significantly.

Prompted by the social unrest this year, business leaders were pressured to examine their commitment to all components of ESG. For example, in direct response to climate change, the automotive industry has realized that the transition to electric vehicles is happening far more rapidly than previously thought. Additionally, executive compensation and talent retention is being increasingly scrutinized, particularly against the backdrop of the pandemic business environment.

Governments around the world responded very well by stimulating their economies. In the post-pandemic world demand is going to change, supply chains will need to adjust, workplaces need to be re-designed and technology will have to leveraged more effectively.

Fireside Chat

JIM FITTERLING, CHARIMAN AND CHIEF EXECUTIVE OFFICER, DOW INC.

RAJ GUPTA, BOARD MEMBER, DUPONT DE NEMOURS, INC.

PETER YOUNG, CEO & PRESIDENT, YOUNG & PARTNERS

Young: How did you prioritize where tofocus your time with regard to issues associated with the onset of the pandemic?

Fitterling: Dow had a pandemic plan in place. I personally was living in Asia during SARS. We effectively executed that plan within a matter of days. The tougher part was keeping up with customers and suppliers. There was a period of time when no orders were coming in. We were trying to get visibility on how long we could run at reduced operating rates. We had to put protocols in place around managing employee safety like contact tracing, etc. Our incidence rates have been much lower than in the general population. We learned a lot about what our organization was capable of. For example, our finance and accounting team was able to close the first quarter books on time without any major hiccups while working remotely.

Young: How did the pandemic effect the various industries you are exposed to as a board member?

Gupta: There were certain things that cut across every industry i.e. employee safety, work practices, communication etc. In healthcare, we were still growing 5-7%, expanding margins and generating cash. We had to explore how we might participate in the changes that were taking place i.e. testing, vaccines, supply chains, etc. In automotive, we had to supply our customers with millions of parts per day, from 350 facilities around the world, on time. As demand was down, we had concerns about our liquidity and raised $2 billion in debt and equity.

Young: How are you managing the increased pace of change that is occuring?

Fitterling: In a capital-intensive industry like chemicals, the ability to pivot and adapt is more difficult than in other industries. There are two big changes that I see on the horizon. There is a pull-back from a 30 year run of globalization and relaxed trade policies. We are seeing that all around the world. Climate change and regulatory policy is the other major change and it is not going to be cheap to make the required transitions. The electrical grid in the United States cannot handle the mass transfer to electric from fossil fuels fast enough. If the United States and EU sign the Paris agreement without China and India, it puts the West in danger of becoming uncompetitive without really solving the climate issue.

Young: Whats the impact of the current political climate on the chemical industry?

Gupta: In some ways, the outcome of the elections is good because there will be limited sweeping change. Certain policy changes, such withdrawal from the Paris accords, spearheaded are likely to be undone by the new administration. The industry has already been moving towards stricter regulatory compliance as it has been the norm in Western Europe for some time.

Young: Do you think the change in administration will temper the desire for national self-sufficiency?

Fitterling: I think you will see vaccine production move to the United States. We are trying to reverse 30 years of globalization and that is not going to happen over night. The simplistic view that manufacturing moved to China so jobs moved to China does not account for the automation that has actually replaced many of those industries. If you actually tour a Chinese factory, they have very advanced robotic technology involved in production. There are actually sustainability pressures to shorten supply chains as the carbon footprint associated with shipping dwarfs the footprint associated with manufacturing.

The Industry Outlook: A Journalist's Perspective

JOSEPH CHANG, GLOBAL EDITOR, ICIS CHEMICAL BUSINESS

We all know the devastating impact the coronavirus has had on all economies, all over the world. You can see this impact on the global manufacturing sector in the PMIs – the purchasing managers' indexes. Even before the coronavirus pandemic, global manufacturing was already weak. Then you saw plunges in all 3 regions because of the lockdowns – first in China and then everywhere.

And then you saw sharp V-shaped recoveries in all regions. Through September, all 3 regions are in expansion territory for the 3rd consecutive month. Things have rebounded much faster than in the financial crisis of 2008-2009. This is an encouraging sign for the near and medium-term, as the PMIs are a key leading indicator of industrial production.

We have seen V-shaped recoveries in US auto sales and housing. US auto sales are not quite back to pre-pandemic levels, but even before the pandemic, sales had already peaked and were trending lower. On the other hand, US housing starts were already trending higher before the pandemic, and are now back on that uptrend.
Overall, big improvements in these 2 important markets bode well for chemicals demand in the US going forward.

China has been exceptionally strong, and is now well above pre-pandemic levels after 6 consecutive months of year-on-year gains. China has been able to control the coronavirus outbreak better than many countries, and its economy is back on track. Europe has also climbed back from severe declines during the lockdowns, to show the first year-over-year gain in September. Again, these are encouraging data points for automotive – a very important end market for chemicals.

There have been big cuts in capital spending among oil and chemical companies. This actually started before the coronavirus pandemic, as crude oil prices collapsed, along with chemical prices. Oil companies are cutting 2020 capital budgets by up to 30%, which is also impacting their petrochemical expansion plans. Chemical companies are likewise pulling back. By the end of the year, capital expenditures will likely fall even lower tPetrochemical project timelines have been delayed as well as final investment decisions.

Starting in 2017, because of cheap shale gas feedstock, producers boosted US ethylene capacity by 10.9m tonnes/year through 2020. But from 2021 onwards to 2024, the 2nd wave will see far less capacity coming on – less than half. It's very difficult to justify spending billions of dollars on new US cracker projects because of low oil prices, which erodes the competitiveness of ethane crackers, as well as trade and economic uncertainties.
Just recently, Sasol agreed to sell a 50% stake in its brand new Louisiana cracker to LyondellBasell at a steep discount. It's unlikely we'll see final investment decisions or announcements of new US cracker projects anytime soon.

While US ethylene capacity additions will decline, China is set to bring on huge amounts of capacity. It is seeking to become more self-sufficient in PE, rather than relying on imports. China is still the world's largest importer of PE by far. From 2021-2024, China could bring on 16.4m tonnes/year of ethylene capacity, with plenty of downstream PE capacity as well. 2020 will be a pivotal year where China takes the lead. From 2020 onwards, at least through 2024, China will dramatically outpace the US in new capacity.

Lastly, there's another important trend – that of European oil companies making a massive pivot to green energy. That's solar, wind, batteries for electric vehicles, EV charging stations, biofuels and hydrogen. France's Total and the UK's BP are leading the charge, but others are also taking big steps. What's driving this? Well first it is the EU's European Green Deal which aims for zero net GHG emissions by 2050. This is forcing companies to cut their carbon footprint. But the most important driver is the rapid advancement of electric vehicles. Technology is making them cheaper, and the consumer mindset has shifted as well. Young people in particular want their next car to be an electric vehicle. This adoption of EVs will happen faster than many people expect. Changes in consumer behavior can happen fast. And once they move to EVs, it is unlikely they will ever change back. So oil companies are realizing that oil demand for transport fuel will decline. Some like Total and BP plan to aggressively invest in renewables and the EV mobility chain. If more oil companies prioritize investments in green energy, there will be less investment in petrochemicals.

Also we are already seeing refinery shutdowns and conversions to lower capacity bio-refineries in Europe and the US. That will reduce naphtha feedstock supply. More plastics recycling will also mean less demand for virgin plastics, and thus less oil demand for petrochemicals. So you can see why some oil companies are making these radical changes in strategy. Not all are shifting to green strategies. The major US oil companies have not shown enthusiasm for such a strategic green shift.

<u>M&A and Financial Developments – What is Happening and Why</u>

PETER YOUNG, CEO & PRESIDENT, YOUNG & PARTNERS

The impact of economic and the pandemic events on chemical companies have varied according to the markets served, supply chain configurations, nature of manufacturing and R&D in terms of social distancing, balance sheet conditions, etc. On a relative basis, the chemical industry is in the middle of the pack in terms of industries that have been affected.

During the first three quarters of 2020, the global equity markets saw a great deal of volatility, up and down, in response to the coronavirus pandemic and associated government efforts to stimulate national economies. As of September 30, the S&P 500 had increased 3.2% and the S&P Euro 350 had decreased by 15.2%. Chemicals stock market performance was mixed. The Young & Partners ("Y&P") U.S. Basic Chemicals index increased by 5.7%, our U.S. Diversified Chemicals index decreased by 9.7%, our U.S./Canada Fertilizers index decreased by 20.2% and our U.S. Specialties index increased by 13.8%. The Y&P European Basic Chemicals index increased by 11.3%, our European Diversifieds index decreased by 7.1% and our European Specialties index decreased by 7.1%. In terms of P/E valuations, three of the seven Young & Partners Western chemical indices were still trading at a premium to the overall market indices at the end of the first three quarters of 2020. On an EV/EBITDA basis, only two of the seven western Young & Partners chemical indices were trading at a premium to the market indices as of the end of the first three quarters of 2020. This is a sharp contrast to the situation not long ago when all of the chemical indices were trading at a premium to the overall market.

In the first three quarters of 2020, $28.3 billion worth of deals closed. This compares to $47.3 billion that closed in all of 2019. 43 deals were completed in the first three quarters of 2020, an annualized pace of 57, which compares to 81 deals closed in all of 2019. In summary, the chemical M&A market volume is healthy, but has slowed noticeably. In terms of the location of M&A targets, Asian and ROW accounted for 51.2%, the U.S. accounted for 27.9% and Europe accounted for 20.9% of deals completed worldwide. The number and share of commodities transactions in the first three quarters of 2020 accounted for 62.8% of the total, a clear continuation of the cyclical downturn in specialties and the cyclical increase in commodity deals. In the first three quarters of 2020, private equity represented only 7.0% of the number of acquisitions and 2.5% of the dollar volume. This is a dramatically lower level compared to private equity's long term market share of acquisitions, but a further drop from the subdued levels the last couple of years. Private equity has avoided Asia and commodity chemicals and has had to face high valuations in the western specialty chemical market in competition with strategic buyers. Looking forward, the value of deals announced but not closed as of September 30, 2020 was $9.3 billion (33 deals).

Global non-bank debt financing was $42.3 billion in the first three quarters of 2020 compared to $36.0 billion in 2019. Companies issued large amounts of debt so that they would be assured of ample liquidity during the pandemic in addition to their normal refinancings and financings in a low interest environment. Massive support by the central banks kept the debt markets healthy and liquid. Investment grade debt was $37.0 billion of the total in the first three quarters of 2020 compared to $26.1 billion in 2019, a dramatic increase on an annualized basis. $10.3 billion of high yield debt was issued in the first three quarters of 2020 compared to $9.8 billion issued in 2019.

There has been a significant pick-up of equity issuance activity, but off of a small base. $8.0 billion of equity was issued from 47 offerings in the first three quarters of 2020. This compares to just $5.6 billion of equity issued from 34 offerings for all of 2019. In terms of IPOs, 27 IPOs were completed worth $3.5 billion in the first three quarters of 2020. This compares to 18 IPOs completed in 2019 worth $3.2 billion. The IPO market was dominated by Asian and primarily Chinese companies.

What is the future outlook?

The current pandemic is seriously damaging the global economy across almost all of the countries around the world.

The move to remove the lock downs in certain parts of the world and in the U.S. has resulted in a second surge in infections and deaths. The current most likely scenario is a continuation of the coronavirus infections at high levels through the fall and winter with a severe economic downturn and some spill over into the financial ecosystem.
This may be coupled with a delayed effectiveness of one of the existing anti-viral drugs working in the fall and an effective vaccine becoming available in the spring of next year.

For much of 2020 the global equity markets will continue to be unpredictable, buffeted by a long list of economic, financial and geopolitical stresses and uncertainty. The chemical industry will not go to a major valuation discount, but it will trade at a modest discount to the market as it is doing currently.

We see a modest pick-up in M&A activity as important business portfolio restructurings and strategic deals are being explored and private equity firms sell businesses as they reach maturity in their investment horizon. A key determinant will be the severity and timing of the current pandemic and the direct economic impact. The M&A numbers for this year and early 2021 will be modestly healthy, but well off the peak years and higher than previous trough levels. Asia and ROW will continue to dominate through the end of this year as the location of businesses sold. Separately, valuations will stay high for both commodities and specialties.

There will be a continued healthy debt issuance unless there is a major spillover from a downward spiraling economy into the financial markets. Volume will be driven heavily by issuer needs rather than investor demand, with M&A related financing driving volume. Investment grade and high yield debt issuance will be driven by the M&A market and not by refinancing needs once chemical companies have reached the liquidity levels they have targeted.

Equity financing will continue to be subdued globally. The Asian IPO and secondary offerings will be solid but subdued. Western IPOs will continue to be dormant.

<u>The Global Chemical Industry: Geopolitical, Market and Supply Insights</u>

DEWEY JOHNSON, VICE PRESIDENT, MARKET RESEARCH, IHS MARKIT LTD.

A recovery in personal and business confidence will be the major factors impacting demand recovery for the industry during the next 18-24 months. The combination of a severe recession, low crude oil pricing, and heightened personal health concerns have created an unpredictable environment. An uneven recovery from the deep COVID-19 recession dampens chemical demand growth, while the industry supply-demand cycle is transitioning to over-supply.

IHS Market is projecting global real GDP to contract 4.4% in 2020. US GDP will decline 3.5%. Meaningful COVID-19 treatments will not be available until mid-2021 for many countries. We are projecting a W-recovery Scenario where world GDP returns to pre-pandemic levels by 2021.

2020 is a pivot point for the energy transition. Money is flowing away from oil and gas to renewables and related industries. This year's decline in fossil fuel demand, particularly for oil, is leading companies and investors to reevaluate medium- and long-term demand prospects – and the general sentiment is bearish. Several key jurisdictions – China, the EU, Japan, and California – have strengthened policy support or increased aspirations for the energy transition during COVID-19. Pressure from governments, investors, and other stakeholders is influencing corporate strategies and plans to meet long-term decarbonization targets for their operations and products. In our base-case scenario, oil prices remain below $50 a barrel through the first half of 2021.

The impact to chemicals demand growth in 2020 has been varied based on end-use sectors with some non-durables showing growth due to plastics. Many of the large chemical markets are in non-durable end-use segments with high annual growth rates. Chemicals are facing a sharp decline in profitability for 2-3 years with a recovery by 2023-2024. Low asset utilization will force high-cost units to shut down or temporarily idle. Strong headwinds and a surge in the build-cycle will soften outlook for ethylene and propylene, chlor-alkali will strengthen, and paraxylene faces significant over-supply. Global trade in base chemicals is projected to increase with a shift in products supplied locally.

Increased "plastics" policy-making and goal-setting by stakeholders (governments, NGO's, investors, consumers) are creating a push toward a circular economy. However, where and how to intervene to effect real change is not well understood. Stakeholders are urgently seeking to develop a comprehensive understanding of policy options and implications for plastics and decarbonization initiatives. A significant portion of plastics are in single use applications with only a small portion in the very short cycle time where current restrictions are focused. Packaging is the largest plastics demand end-use segment. Plastics is a small portion of waste volume with increased waste and plastics consumptions driven by fundamentals of population and GDP. Current infrastructure and scaled technology are not sufficient to meet targets for eliminating the incineration and landfill of plastics waste. Chemical Recycling will move from a high-cost position in 2030 to a low-cost position in 2050. The stakeholder ecosystem is looking to either attract capital or expend limited investment funds.