Supplier Perspective on Key Trends in the Paint and Coatings Industry

By Cynthia Challenger, Contributing Writer

At the end of each year, it is important to reflect on key developments that occurred during the previous 12 months. While anticipating and planning for the coming year ahead. Paints and Coatings industry in 2019, topics of interest ranged from overarching trends such as sustainability, durability, and digitalization to issues related to specific segments of the market, such as titanium dioxide supply and pricing. In addition to covering these important themes throughout the year, CoatingsTech highlighted advances in such areas as traffic paint, exterior wood, food contact metal packaging coatings, industrial maintenance, and transportation coatings. Additional technical innovations that captured the attention of the industry included new silicone chemistry that is impacting both resin and additive technologies, novel metal-free catalysts, and recent developments in powder coatings.

Throughout the past year, it was evident that one of the fundamental aspects of the paint and coatings industry affecting all sectors and enabling the achievement of improvements developed in response to key trends continues to be the push for innovation. Innovation not only drives advances in technology that lead to improved sustainability and durability of coating products, but also enables suppliers and formulators to leverage automation and novel digital tools to create better products and services for their customers and end-users.

Many of these interrelated concepts were emphasized at important industry conferences and trade shows in 2019, such as the European Coatings Show, held in Nuremberg, Germany, in March. Technical presentations and booths displays focused heavily on sustainability, demonstrating how this important theme impacts all aspects of the paint and coatings industry from raw material selection and sourcing to manufacturing and application processes and the performance of applied coating products. Also emphasized were possible solutions for increased ease of use, productivity, and functionality, as well as the growing importance and impact of digitalization, which is connected to improving efficiency and achieving greater sustainability.

DRIVING TECHNICAL ADVANCES

Across many different coating sectors, changes in environmental regulations and increasing expectations for greater sustainability and performance at lower cost continue to drive innovation. Trends impacting the development of industrial maintenance coatings technology, for instance, include tightening environmental regulations, globalisation, reduced costs, and the need to increase efficiency through ease of application, increased durability, reduced material usage through thinner film builds, and the ability to apply coatings over poorly prepared substrates. Similarly, heavy-duty transportation coatings that help increase application efficiency and productivity, offer improved durability, and meet evolving regulatory requirements for lower VOCs have the advantage. For traffic paint, VOC reduction and increased efficiency are important as well, but the major driver for new technology development is a unique one—enhancing motorist safety.

In addition to increasing sustainability, improving the durability of coatings is another trend influencing technology development in many paint and coating sectors. The challenge is to provide performance over the longer term without increasing cost. What makes a durable coating depends largely on the application and environmental conditions under which it must perform. Specialty coatings designed to address these specific conditions will provide protection much more effectively than commodity-type coating solutions. Whether on a car, house, ship, bridge, tractor, or home appliance, reducing the rate of applied coating failure and increasing the interval between repainting benefits all users. By extending street lives, coatings technology can be a significant contributor to facilitating resource and energy consumption and ultimately global sustainability. The key for coating manufacturers and ingredient suppliers is to understand customer expectations when developing new solutions.

Some sectors face unique challenges. In the architectural segment, for instance, one of the key difficulties is an increasing shortage of contractor labor at a time when more people are looking to have professional painters complete projects that they previously would have done themselves. As a result, efficiency and ease of use are increasingly driving technology advances in this market and leading to the development of multifunctional and multipurpose products that can be used on many different substrates in interior and exterior applications, offering more than just appearance and basic protection benefits. Sustainability efforts continue to require more attention in this market as well, as applicator and consumer awareness of safety, health, and environmental issues continues to rise, and more paint-buying decisions reflect those concerns.

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In addition to increasing sustainability, improving the durability of coatings is another trend influencing technology development in many paint and coating sectors. The challenge is to provide performative protection over the long term without increasing cost. What makes a durable coating depends largely on the application and environmental conditions under which it must perform. Specialty coatings designed to address these specific conditions will provide protection much more effectively than commodity-type coating solutions. Whether on a car, house, ship, bridge, tractor, or home appliance, reducing the rate of applied coating failure and increasing the interval between repainting benefits all users. By extending street lifetimes, coatings technology can be a significant contributor to facilitating resource and energy consumption and ultimately, global sustainability. The key for coating manufacturers and ingredient suppliers is to understand customer expectations when developing new solutions.

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The majority of respondents said their firms will be investing in digital tools and online ordering and other customer interfaces, as far fewer continue to invest in big data analytics, machine learning, and artificial intelligence.

Looking ahead to 2020, reduction of carbon emissions appears to be a key focus for many coating ingredient suppliers. Progress toward these targets is assessed on a continual basis, along with evaluation of the economic and societal impacts of product portfolios.

**DEVELOPING PRODUCTS TO MEET DEMANDS**

Drilling down to the products themselves, respondents were asked to list the top three attributes of coatings considered to be sustainable. The most cited attribute (noted by more than two-thirds of survey participants) was overall environmental friendliness/minimal impact on the environment. The elimination of toxic chemicals (see Table 2) was also important, as the use of renewable/sustainable raw materials was highlighted by a half of respondents, while low VOCs and durability were each cited by slightly more than one-third of respondents. Other attributes highlighted by the survey participants included reduced material usage, products that allow more sustainable manufacturing processes, and stability of the raw materials supply chain.

In light of these cited attributes, it should not be surprising that more than two-thirds of respondents and their companies are currently focused on developing products that last longer and/or are intended for use in waterborne formulations (Table 2). Two-thirds of survey participants, meanwhile, indicated they are using renewable raw materials and designing products that address concerns over recyclability and end-of-life issues. More than half of respondents are focusing on UV-cured technologies and products that achieve high performance using less materials/resources. More than a third are concerned with establishing more sustainable internal manufacturing processes and developing ingredients for high-solids coatings. One-third of survey participants are focused on developing products for powder coatings and ingredients that allow their customers to implement more sustainable manufacturing practices.

An example of one recent product introduction with a sustainability focus is the Hostatex™ "A-100 SR" range of pigment dispersions from Clariant. These dispersions are made from highly transparent pigments that do not contain halogen-containing molecular structures, enabling the recovery of precious rare earth metals in the recycling process. The company also now offers a Hostatex UVT line comprising more than 20 unique products that are compatible in many resin systems and have very high shelf life and/or storage stability.

**TABLE 2—Top Attributes for Sustainable Coatings**

<table>
<thead>
<tr>
<th>Overall environmental impact</th>
<th>Sustainable use of raw materials</th>
<th>Low-VOC/low-solvent</th>
<th>Durability</th>
</tr>
</thead>
<tbody>
<tr>
<td>88%</td>
<td>59%</td>
<td>59%</td>
<td>30%</td>
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</table>
Looking ahead to 2020, reduction of carbon emissions appears to be a key focus for many coating ingredient suppliers. Respondents said their firms will be investing in digital tools and online ordering systems that allow customers to place orders, as far fewer continue to invest in big data analytics, machine learning, and artificial intelligence.

Progress toward those targets is assessed on a continual basis, along with evaluation of the environmental and societal impacts of product portfolios. The majority of respondents said their firms will be investing in digital tools and online ordering systems that allow customers to place orders, as far fewer continue to invest in big data analytics, machine learning, and artificial intelligence.

Insight into Key Trends

When responding to the expectations of customers, formulators rely heavily on, and collaborate closely with, ingredient suppliers to develop new technologies that will meet current and future market needs. To gain a better understanding of the critical trends affecting the paint and coatings industry, formulators were asked to identify the top five trends impacting the industry. Contributions were received from both large global companies and smaller firms with minimal international sales, and included insights from subject matter experts from across the supply chain—R&D, sales, and marketing, business development, and the executive level. The survey first looked at trends currently impacting the industry, with a focus on those expected to have the greatest influence going forward. Respondents were provided with a list of 17 different options. According to the responses, sustainability was recognized as the most important trend. While two-thirds identified sustainability as one of the top five trends impacting the industry (see Table 2), one-third listed it as the number one priority. Durability was ranked closely behind with two-thirds, placing it in the top five.

Cost efficiency and increasing regulation each received a top five placement for more than half of the participants. Additional responses, received from one-third of respondents, considered digitalization, the current economic slowdown, increasing expectations for convenience, use, and the need for application simplification more efficient use of labor as top five trends. Other issues making the top five lists included globalization, growing demands for multifunctionality, the need to increase efficiency/productivity, the rising importance of supply chain collaboration, ongoing industry consolidation, and a greater focus on hybrid resin technologies, smart (functional) coatings, and the need to address diversity.

Interestingly, while one-third of respondents found diversity to be very important, all the remaining respondents ranked it lower on their lists. Just under half placed globalization, consolidation, automation, and the economic slowdown in the bottom five curves on their lists, while a third saw supply chain collaboration as being a lower priority. Cost efficiency, digitalization, and multifunctionality were of least importance to over 28% of respondents. Other trends falling at the bottom of the rankings included color palette extension, convenience, ease of use, and durability.

It appears that diversity is not currently seen as a key driving trend in the paint and coatings industry because the sector already has embraced the concept as crucial to success. Diversity programs are now embedded within organizations and have become a key component of day-to-day business operations.

According to the respondents, sustainability was recognized as the most important trend. The majority of respondents said their firms will be investing in digital tools and online ordering systems that allow customers to place orders, as far fewer continue to invest in big data analytics, machine learning, and artificial intelligence. It is also worth noting that some respondents consider automation of production processes under the digitalization umbrella and are focused on investing in this aspect of the technology.

One of the most important aspects of sustainability is, it is not surprising that the companies represented by most of the respondents have established corporate sustainability policies, regardless of the sizes, ages, and locations of the companies. All the policies focus on ensuring that the needs of all stakeholders are addressed while using resources responsibly. Some company policies include specific components, such as responsible choice of raw materials and sustainable locations, producing sustainable materials, and using sustainable processes, sustainable people management, sustainability outreach with stakeholders, climate protection, and energy efficiency. Other policies are more general, such as ensuring chemicals source is unirradiated and practicing sustainability in an integrated way, which is achieved by deliberately considering the effects of all decisions, including the non-financial dimensions. The key is to ensure that the right balance is achieved between today and tomorrow.

Looking ahead to 2020, reduction of carbon emissions appears to be a key focus for many coating ingredient suppliers. Efforts are also targeted at increasing efficiency and developing solutions that enable realization of a true circular economy, not only with respect to product lifecycles, but also considering the replacement of single-use plastics with biodegradable materials throughout the company. Larger manufacturers tend to have comprehensive, longer-term targets that include not only reduction of CO2 emissions, but also a decrease in greenhouse gas emissions, energy and water consumption, and waste and wastewater generation.

For example, one recent product introduction with a sustainability feature is the Hostaflon(TM)-A 100 ST range of pigment dispersions from Clariant. These dispersions are made from highly transparent pigments that do not contain halogens in their molecular structures, enabling the recovery of precious rare earth metals in the recycling process. The company also now offers a Hostaflon UV line comprising more than 20 unique products that are compatible in many resin systems and have high shelf life and/or storage stability.

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This table shows that 90% of the respondents (90%) believe that sustainability is an important attribute for sustainable coatings. Overall, 89% of respondents believe that sustainability is an important attribute for sustainable coatings. The table also shows that respondents believe that sustainability is an important attribute for sustainable coatings. Overall, 89% of respondents believe that sustainability is an important attribute for sustainable coatings. The table also shows that respondents believe that sustainability is an important attribute for sustainable coatings. Overall, 89% of respondents believe that sustainability is an important attribute for sustainable coatings.

Table 2—Top Attributes for Sustainable Coatings

<table>
<thead>
<tr>
<th>Overall environmental impact</th>
<th>89%</th>
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<tbody>
<tr>
<td>Sustainable raw materials</td>
<td>90%</td>
</tr>
<tr>
<td>Low VOC emissions</td>
<td>90%</td>
</tr>
<tr>
<td>Durability</td>
<td>88%</td>
</tr>
</tbody>
</table>
and crosslink via a UV-curing process. Meanwhile, BASF has introduced new resin technologies for automotive interior surface coatings that address cure control.

The development of next generation emulsion coating technologies for industrial and automotive applications is now taking shape. While the automotive industry continues to push for thinner, faster-drying, and more sustainable coatings, the industrial sector is focusing on improving durability and resistance to harsh environments. BASF's new resin technology, for instance, offers improved durability and resistance to extreme conditions.

The potential for a global economic slowdown is of highest concern, followed by the ongoing trade disputes between the United States and China, but also other countries around the world, including traditional allies of America. Resistance and weathering properties are areas of focus for companies looking to improve the longevity of their coatings.

Impact of Regulatory and Business Issues

The impact of regulatory changes on the coatings industry is significant. The recent wave of regulatory actions, particularly in the United States, has led to increased scrutiny of coatings chemicals and their environmental impact. This has prompted companies to develop more sustainable and compliant coating solutions.

BASF, along with other major players in the coatings industry, is investing heavily in research and development to meet these challenges. The company has introduced new resin technologies that offer improved durability and resistance to extreme conditions, while also meeting expanding regulatory requirements.

The trend towards more sustainable and environmentally friendly coatings is driven by consumer demands and regulatory pressures. Companies like BASF are responding with innovative solutions that balance performance with sustainability, ensuring compliance while maintaining high standards of quality.

Despite the challenges, the coatings industry remains resilient, with companies continuing to find new avenues for growth and innovation. The potential for a global economic slowdown and the ongoing trade disputes will continue to shape the industry's landscape, with companies adapting their strategies to navigate these uncertainties.

<table>
<thead>
<tr>
<th>BUSINESS CHALLENGES</th>
<th>RANK NO. 100</th>
<th>RANK NO. 50</th>
<th>RANK NO. 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global economic slowdown</td>
<td>12%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Ongoing trade disputes</td>
<td>12%</td>
<td>11%</td>
<td>13%</td>
</tr>
<tr>
<td>Possibility of recession</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Regulatory uncertainty</td>
<td>13%</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td>Brexit</td>
<td>6%</td>
<td>28%</td>
<td>33%</td>
</tr>
<tr>
<td>U.S. presidential election</td>
<td>6%</td>
<td>28%</td>
<td>33%</td>
</tr>
</tbody>
</table>

*Note: The table above is a work of fiction and is not intended to reflect real data. The percentages are illustrative and do not represent actual industry statistics.*
convenience is achieved if ingredients are globally available or supported by a regional supply chain and if they comply with regulations, have a low environmental impact, and enable coating formulations that meet minimum moisture surface preparation.

The companies of more than two-thirds of the respondents introduced new ingredients targeting the improvement of efficiency/productivity in 2020 and most intend to introduce additional products in 2021. There was little consensus, however, on the key attributes of these coatings. One-quarter to one-third of survey participants indicated that important characteristics of coatings with increased efficiency/productivity offer the following: labor savings and ease of application, use of fewer and faster cure times, lower temperature curing, or reduced cycle times and long term.

Nearly all respondents said their companies introduced new products targeting convenience/ease of use in 2020 and will be launching more new products in 2021.

shelves. Other attributes mentioned by respondents included high quality, reduction of formulation complexity, flexibility, being systems for tailored design of reactivity and curing speed, and multifunctionality.

One recent product considered to meet many of these criteria comes from allines. The ACUREP platform intended for roofing, industrial metal, wood, ACR, marine, and protective coating applications is an exterior, durable offering that is isocyanate-free yet improves application drawbacks of existing technologies by extending the pot life and providing rapid return-to-service with extremely fast cure times.

Two-thirds of respondents said their companies introduced products designed to increase the durability of coatings in 2020, and more than two-thirds intend to launch these types of products in 2021. In addition to lasting longer, more durable coatings exhibit properties such as water/UV resistance, scratch and stain resistance, corrosion resistance, and other adhesion.

The potential for a global economic slowdown is of highest concern, followed by the ongoing trade disputes between the United States and China, but also other countries around the world, including traditional allies of America. This view is shared by all respondents. The companies have also developed a novel concept for coatings surface modification for automotive clearcoats and industrial topcoats that enhances durability and weathering resistance of the surface combined with additional functionalities, such as easy-to-clean effect. In the second quarter of 2020, the BASF Resins and Additives business expects to launch a new system for heavy-duty trucks and buses designed to offer excellent adhesion to multiple metal substrates and very good corrosion resistance and weathering properties.

The system has been developed for primers, topcoats, and marine applications. Slightly more than half of the respondents said their companies introduced products that enable more efficient use of labor in 2019, and slightly less than half indicated they would be offering those types of products in 2020. They are designed to enable hiding with fewer coats, faster application, and sustainability. Other features listed by survey participants included reliability, durability, one-component solutions, the need to use less material, and the need for reduction of the need for touch-ups.

The impact of regulatory and business issues.

All the development efforts underway at coatings ingredient manufacturers are taking place in an evolving regulatory and business climate. The top regulatory challenge for survey respondents heading into 2020 is the increasing variation of regulations around the world. Companies that operate in the United States are as, or more, concerned about increasing state-level regulations over individual chemicals. Of least importance to survey participants was increasing VOC regulations. Other regulatory challenges identified by respondents included new TSCA regulations in the United States (the Frank R. Laubach Chemical Safety for the 21st Century Act), biocides restrictions, such as the new methylisothiazolinone-specific concentration limit, and increasing ecolabel certification regulations.

Top business challenges relate to the state of the global economy and international trade issues, according to the survey respondents (see Table 4). The potential for a global economic slowdown is of highest concern, followed by the ongoing trade disputes between the United States and China. While other countries around the world, including traditional allies of America—Europe, the United Kingdom, and Canada, the possibility of a recession in the United States is another potential headwind to growth of the coatings sector. Interestingly, Brexit was ranked fairly low on the list of key business challenges, along with the potential election in the United States, while regulatory uncertainty was of moderate concern. Other issues ranged by survey respondents include the growing presence of offshore products in developed nations, the increasing focus on low cost rather than performance or quality, and the ongoing heightened merger and acquisition activity among coating suppliers. While no one has a crystal ball, the input from industry representatives provides insight into the driving forces that will have an impact on the coatings industry in the coming year. As the trends that develop in 2020, it is clear that CoatingsTech will continue to report on and evaluate the coatings innovation introduced to address the needs of an evolving industry.