Protecting against the down cycle and **Preparing for the upturn**

Opportunities for improvement and growth are found at the bottom of the cycle

The best companies think strategically and do more with less. They proactively define a case for change, and engage employees to implement the necessary changes to improve operational and business performance.
Down-cycles can be the best time to eliminate non-value activities, examine and optimize your cost structure, and streamline your work processes and organizational model to significantly improve your competitive performance.
— Chuck Deise, ARGO-EFESO Partner & Senior Vice President - Chemical & Process Industries

While not all chemical companies have stated earnings are lower or have missed estimates, on aggregate the industry is clearly in a down cycle extending across large and small companies from commodities to specialties. Even more telling, a scant 8% of companies are very satisfied with their current business performance according to a recent survey conducted by ChemicalWeek for Argo Efeso. Only another 31% are satisfied, while 36% are dissatisfied.*(Question 1. chart on page C4)*

Amid the heavy clouds, there are a few rays of sun. Many companies have learned from previous downturns that simply cutting costs – reducing spending and laying off workers – is not sufficient. That was especially true coming out of the pandemic and through the subsequent supply-chain disruptions.

The key, as executives told CW, is to think smarter, to build business cycles into strategic planning. That is the effective definition of operational excellence: to be both resilient and opportunistic during downturns. That sets the stage for acceleration when the business cycle turns again to recovery.

The survey results bore out those assertions: A third of companies, a plurality, said their quick-hit response to reduce spending was implementing and standardizing their operational best practices. The next largest response, 28%, was spending rationalization – not just cutting, but rationalization. Only about 17% said their quick response was general headcount reduction, and only about 6% said contractor reduction. *(Question 2)*

Two responses stood out in terms of opportunities to improve operations and supply chain. Almost 28% of companies the opportunities are in predictable, reliable production, and in integrated business planning. The other significant response was asset optimization and capacity release, at 22%. *(Questions 4)*

Most broadly, a resounding 58% of companies said that a robust operational excellence program was very important in their management agenda. A further 22% said it was important. *(Questions 5)*

Some companies have as an operational-excellence goal a robust state that enables them to resist downturns and stay steady on.

GUIDO SKUDLAREK: Head of Operations Excellence at Evonik Industries AG

Others have the goal of flexibility to wax and wane smoothly through cycles. "Both are important to us," said Guido Skudlarek, who is responsible for Operations Excellence at Evonik Industries AG. "The primary steering depends on the specific situation and business model. But in the end they go hand in hand. We have a long-established factor cost compensation process."

The company is the process of implementing a new Evonik Production System (EPS) that is "much broader than continuous-improvement and starts with the business strategy and deploys targets down to the shop floor," said Skudlarek. "Among other effects, this provides guidance on what to focus on and how to prioritize resources in the medium term."

Further, the new production system provides support and structure for "short-term impulses in our system to manage any immediate requirements," Skudlarek added. "As an example, Evonik currently very much focuses on cash. As a consequence, operations have quickly reduced third-party maintenance spending."

Logistical disruptions during and after the pandemic showed the weaknesses in just-in-time supply-chain management. Many companies stated they would shift to a just-in-case approach, including shorter and more robust supply chains, and holding more inventory. Those measures incur costs, and now that cost-control has come back to the fore, some sources acknowledge pressure to cut inventory and shift back to lowest-cost suppliers.

"Just-in-time supply-chain management was never the best solution for specialty chemicals," Skudlarek stated clearly. "If customers demand just-in-time from us, we rather work with storage concepts. During the crisis with increasing uncertainties, just-in-time proved to be a rather fragile concept."

Digitalization is an important aspect of making plants ready for the future, said Skudlarek. "For many of our plants we have analyzed the individual requirements and scope of digitalization. Typical benefits include an increased contribution margin, extended capacity, and lower costs."

Hidden weakness becomes visible

The revelation of a downturn, Skudlarek explained, is that "hidden weaknesses become more visible and are at the same time easier to address. Therefore, we see the downturn also as a chance to improve our processes further and increase our efficiency. Taking the production environment as an example, this goes hand in hand with our EPS philosophy where everyone in the production and technology community is enabled and engaged in working on improvements that are specifically relevant for the business they are part of."

Early in third quarter of 2022 the immediate focus was op-ex, said John Sampson, senior vice president of operations, manufacturing, and engineering at Dow. "As our cap-ex plan is still increasing in support of our strategy to de-carbonize and grow. We quickly re-activated our centralized Cost Program Management Office (PMO), leaning heavily on our previous experiences, to coordinate activities among businesses, sites, and regions."

The Cost PMO serves as the hub for communications, strategy, and short-interval control oversight for operations. "While our businesses lead the decisions on balancing discretionary spending with demand, the Cost PMO leads the topics which cut across the businesses," Sampson explained. "On a more local level, we set routine spending control meetings to ensure we are managing costs as well as staying true to our values and our license to operate."

Some specific actions that have been made public include a formal restructuring program and asset realignment. "We certainly do not take these decisions lightly," Sampson stressed, "and we appreciate the resilience of our people. The silver lining of these exercises is that our teams inevitably find ways to complete work more efficiently, which then become part of our long-term playbook."

JOHN SAMPSON: Senior vice president of operations, manufacturing, and engineering at Dow

In operations, Dow started with its highest-value and most-concentrated opportunities with turnarounds, where the company continues to generate year-over-year growth in value creation, typically in the range of 6-10% of total turnaround costs, according to Sampson.

"Our digital tools provide accurate and real-time data to turnaround teams to manage resources and optimize productivity while enabling intelligent decision-making," he added. "We are now expanding those tools and applying them globally. To ensure those are rapidly deployed and fully applied, we have implemented cross-functional, digital manufacturing strategy teams in each of our five major geographic regions. Each region sets its own priorities for its specific business and customer needs."

Digging into decarbonization

A recent example, Sampson noted, is a digital manufacturing-acceleration program. It provides a secure wireless network and intuitive tools with access to essential data for decision making in the field. "We have just started to roll out this program to many manufacturing sites, resulting in improvements in productivity, safety, and reliability of manufacturing assets," he said.

Despite the near-term macro-economic challenges, Dow remains focused on its long-term goals, Sampson said. "We are the top user of clean energy in the chemical industry and Top-25 among global corporations, having secured more than 850MW of renewable power for our sites around the world. Today, we have some of the most carbon-efficient assets in the industry and we have a plan that will enable us to decarbonize our manufacturing while growing."

"People seem to be so taken aback by downcycles," said Trevor Williams, executive vice president of nitrogen and phosphorus at Nutrien. "But to be effective over time you need to have cycles built in to your operational plans. It sounds basic, but it's difficult to do."

He explained that building cycles into the operational plan starts with safety, personal and process safety of course, but also reliability. The ebb and flow of business is an opportunity, Williams suggested, for advancing and revising investments and initiatives. "You do have to make adjustments, but you never want to sacrifice the long term for the short term."

Down cycles are the best time to look at operational opportunities, said Williams. "That is the time for debottlenecking, or adding flexibility to production. The downturn is when to find opportunities and have the ready for the recovery."

TREVOR WILLIAMS: Executive vice president of nitrogen and phosphorus at Nutrien

In a commodity business like fertilizers, the supply chain is more a matter of lead time for equipment than it is for raw materials. "Our feedstocks are resource based," said Williams. "It's more the specialty chemicals sector that has been affected by supply-chain disruptions. The biggest impact on us has been how to adjust our planning and readiness for the longer lead times for equipment."

Focus on diversification

Working capital has remained flat for Nutrien. "Our focus has been on diversification," said Williams. "It is not so much saving a few cents per pound or dollars per tonne but moving away from sole sources. We have been diversifying the number and geography of suppliers."

Williams also has an interesting perspective on technology. “For us it has been driven by attrition among staff. Across the industry there used to be two or three experts in the process, or rotating equipment, for example, at every site. Now you’re lucky to have two or three across the organization.

“As a result,” Williams continued, “we’ve had to move data on how to monitor, optimize, and troubleshoot to a remote operational center. That is also where we develop models. It has become a huge part of our strategy regardless of peaks or troughs in the cycle.”

Reliability is a principle that came to the fore during many discussions on operational excellence. “As buyers we are always

PAUL CAHILL: President of Sofix

attentive to price,” said Paul Cahill, president of Sofix, “and at the same time we are attentive to reliability. There can be a tension between the two, and we are respectful of that. The important thing is to maintain perspective, and not have a knee-jerk reaction to one or the other.”

Price pressure has increased across the specialty chemicals sector. Through the pandemic and the logistics disruptions there was much criticism of just-in-time delivery, minimal inventories, and long low-cost supply chains. “But people have short memories,” Cahill lamented. The downturn has brought back the pressure to reduce working capital, “which puts real pressure on small companies such as us.”

Sofix has always tried to have multiple suppliers, Cahill said. “Sometimes you can’t get stuff, but the only way you are going to get through year after year is having those options, constantly tweaking and fine tuning the supply chain. Once availability has become easier, you don’t chase price. Rather, you keep after multiple options.”

JONATHAN LOCK: Chief financial officer, Chemours

Despite regional and global headwinds, “we’re concentrated on delivering against efficiency initiatives across the business and working to ensure that our input costs are closely aligned with the near-term demand and economic trajectory,” said Jonathan Lock, chief financial officer of Chemours.

Lock said his team “responded well to the supply-chain challenges in recent years, managing what they could control and responding to customers’ needs. Our focus is using our assets to their full potential, minimizing waste, and focusing on margins. As part of that focus, over the past several years, we have implemented new planning processes and cloud-based planning tools that help us balance these trade-offs.”

MATTHEW ABBOTT: Chief enterprise transformation officer at Chemours

Less collecting, more analyzing

Matthew Abbott, chief enterprise transformation officer at Chemours added that the tools provided “near real-time visibility, scenario planning, and improved forecasting techniques. We have continued to improve asset utilization, and keep inventory levels within reasonable limits.”

Abbott explained further that “Industry 4.0 is one component of our operational excellence program to liberate capacity in our manufacturing plants, improve operational effectiveness and remain competitive, while also being a great place to work. We are piloting several Industry 4.0 applications across our global sites and using ‘citizen-developed’ applications that [make best use of the] know-how and motivation of our frontline teams.”

For example, automation of overall equipment-effectiveness data collection has turning what used to be hours of work into minutes, automatically collecting downtime periods, durations, and the classification of common downtime events, Abbott detailed.

“That allows the teams to spend less time collecting data and more time analyzing it. In addition, it captures minute-by-minute downtime with a level of accuracy not achievable before, enabling the teams to glean more insights into unplanned downtime events, the root cause, and actions to avoid a recurrence.”

“In addition to digital tools, we are looking at new ways of working at our sites to improve operational effectiveness,” said Abbott. “For instance, we have begun using drones at some sites to inspect equipment. In one example, an inspection that typically took five to seven days took only one day. Beyond the time savings, using a drone provided improved safety of employees who no longer needed to perform the inspection physically.”

Naser Aldousari, president and CEO of Equate Group, noted that his firm’s objective is to “manage our targets throughout the cycles with a continued focus on environment, health and safety; reliability; and cost discipline. That approach cascades into our functional areas and allows us to manage our targets at various operational levels.”

During a downturn, Aldousari explained, “we put increased emphasis on short and tactical plans. However, we remain committed to enhancing our internal strengths. We have been assessing our medium- and long-term objectives to maintain our market leadership and continue to develop growth-oriented plans to emerge stronger after the downturn.”

He added that “we balance between cap-ex and op-ex programs. That approach has been in place since before the pandemic. When the global downturn started, [we were able to adjust] without compromising our safe, reliable, and

NASER ALDOUSARI: President and CEO, Equate Group

competitive global operations."

Turning to logistics, Aldousari said that "our operational model [is to] ensure adequate inventory buffers to allow for agile global supply-chain options, [and to] maximize netback globally." Industry 4.0 technology and processes are part of that. "We continuously invest in improvement projects and best practices in collaboration with our partners," he added.

Focus on flexibility

"As an early-stage startup, we certainly focus on the flexibility side of the spectrum," said Dave Haase, president of ChemDirect. "Everything from our organization planning down to our execution in terms of project sprints is typically divided into weeks. We are remarkably short-term focused compared to larger organizations and this can be a large advantage."

In response to the downturn ChemDirect has activated quite a few op-ex measures. "Cap-ex is much more difficult for our business," Haase explained, "because our capital expenditures are smaller but required for operating an on-line business. In terms of op-ex measures, we've streamlined the team, tightened our margin requirements, and reduced financing costs."

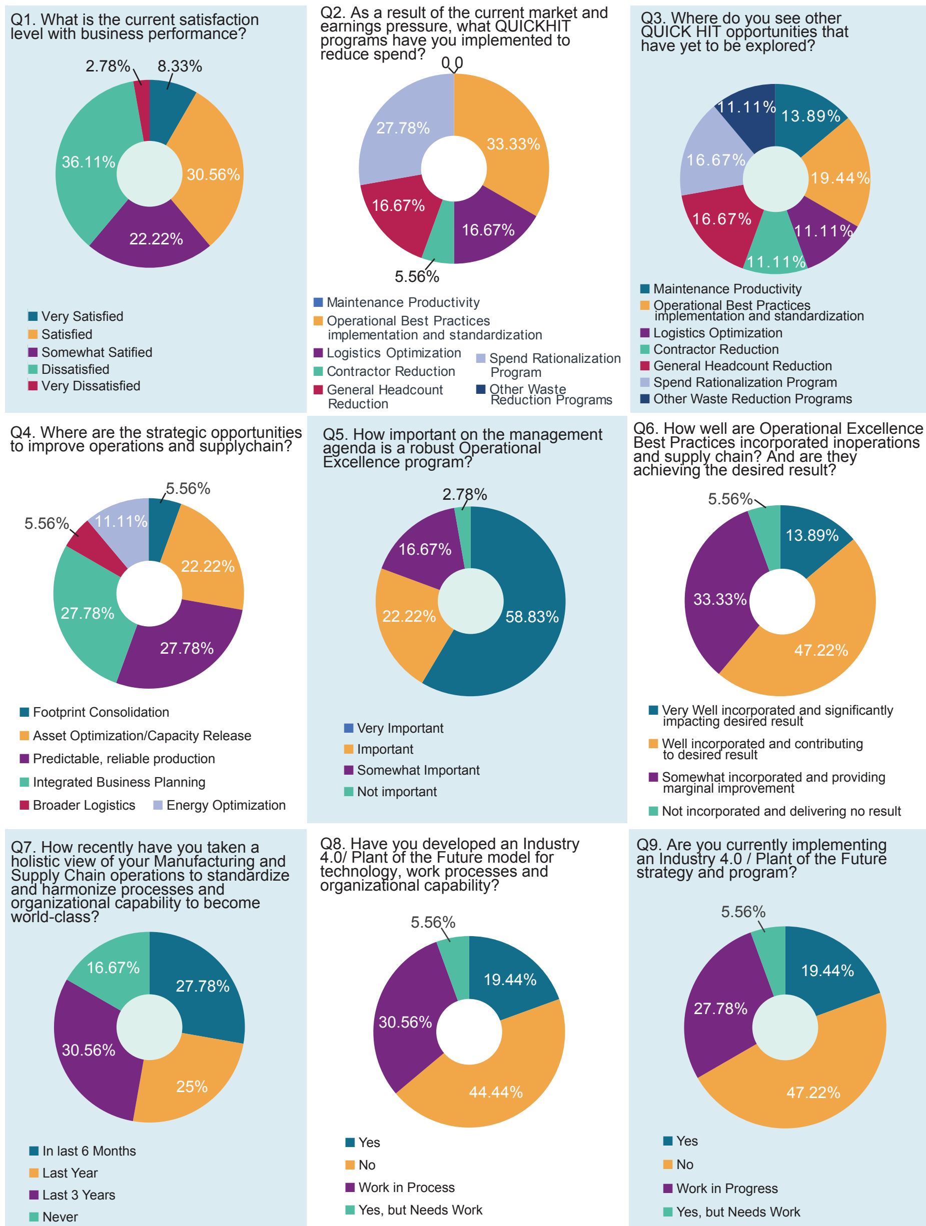
Haase noted that "our market is a great tool for bringing down costs for buyers and reducing inventory. We aid in the discovery of new suppliers as well as providing transparent pricing which is great for buyers. Also, this is an industry where major distributors control much of the channel and have [as much as] 100% markups. Our model is to go direct to suppliers and provide 30-40% savings for buyers. It's very disruptive and an idea we believe is overdue."

Specialties firm Monument Chemical holds operational, commercial, and financial excellence as a way to compete on cost, operate safely, and differentiate itself, said Adam Pingel, vice president of global operations and supply.

"We lean towards being flexible, rather that scaling up or down with the business cycles. There is also the balance between producing our own lines and our toll/custom manufacturing. Ideally that balance would be 50:50 but that can shift to 60:40 or even 75:25 at times."

That variability is why Monument emphasizes the expertise of its staff. "We have to have the talent and capacity to be flexible," said Pingel. "If a customer has a problem, they bring it to us. Toll manufac-turing is more than just renting a reactor. In many cases our customers are handing over full responsibility to us from inputs to outputs, the whole supply chain."

What measures are your company taking to improve performance during a challenging economy?



Source: ARGO-EFESO/Chemical Week survey