Industry Trends: Emerging Opportunities

Manufacturing trends are shaping business in 2011

By Patrick A. Toensmeier

Photo courtesy of Dow Plastics.
The global outlook for the plastics industry this year is positive, as North America and Western Europe continue to emerge from the deep recession of 2007–10, and developing countries such as China, India, and Brazil post double-digit gains in materials consumption, production, and trade.

In the U.S., signs of recovery will be apparent across most sectors; high-volume markets such as automotive, packaging, medical and healthcare, consumer electronics, and infrastructure repair will drive manufacturing and shipments at annual growth rates of 3%–4%, greater than the 2.5%–3.3% GDP gain forecast by economists. Plastics manufacturing, which declined 17% during the recession, had by January of this year recovered 53% of that loss, according to figures developed by the Society of the Plastics Industry (SPI), and is on track to hit its pre-recession peak in 2012, if the pace of recovery continues.

Matt Stehouwer, a Michigan State University professor, gets 62 mpg with his Chevrolet Volt electric car. The ability of the plastics industry to provide cost-effective designs and materials to emerging markets like electric vehicles will be crucial to its growth. Photo courtesy of Chevrolet.
Automotive sales, always a barometer of industry health, could reach 12.8 million units in the U.S. this year, reports McNaughton Automotive Perspectives. This would be an 8.5% increase over 2010, when 11.8 million units were sold, and a 23% gain over the 10.4 million units sold in 2009, according to figures from Ward’s Auto. The peak for U.S. automotive sales was in 2000 and 2001, with just over 17 million units. Though sales declined thereafter, they were still a robust 16 million in 2007. IHS Global Insight predicts sales could again reach 16 million in 2013, and 17 million in 2015.

The automotive recovery and growth in other plastics markets depend in part on various factors, notably energy prices, inflation, employment, discretionary income, regulation, and consumer confidence.

On the surface, however, the U.S. plastics industry and most global counterparts will see increased business this year and next. In the U.S., plastics remains the fourth-largest manufacturing industry. SPI reports that in 2009, the last year for which figures are available, the industry shipped goods valued at $327 billion, employed 910,000, operated 17,348 facilities, and made $7.8 billion of capital expenditures. And despite economic downturns, the health of the industry is sound and historically quick to recover: SPI says plastics outpaced other industries from 1980 to 2009 in employment growth (0.2% per year versus –1.6% overall), real shipments (2.3% versus 0.6%), and real value added (2.3% versus 0.9%).

Medical devices will continue to be a growth market for plastics in 2011. Photo courtesy of Dow Plastics.

**Business-shaping trends emerge**

Behind these numbers, though, are trends that will determine the direction the industry takes this year when it comes to growth and profitability. Based on interviews at all levels of the industry, four trends will be dominant:

- Expanding collaboration between OEMs, suppliers, and processors in product design and development;
- Activity in mergers and acquisitions (M&A) influenced to a large degree by efforts to procure technology and innovation rather than acquiring physical assets;
- Greater efforts at sustainable manufacturing and recyclability;
- A push to train employees for new materials and applications, and to secure meaningful govern-
None of these trends is new. But they are being reshaped by market needs and economic conditions specific to 2011 that will reward companies that successfully manage them, and punish, with lost business, those that do not.

One factor affecting these trends is rising prices, whether due to energy, materials, inflation, or any combination of the three. “We are in an inflationary period from a demand and pricing standpoint,” says Glenn Wright, commercial vice president of North American Plastics at Dow Plastics. “Higher costs are going to be propagated further down the chain.” While Wright does not expect that costs will rise enough to affect demand, there are points beyond which prices could force consumers to postpone buying. The result would be production slowdowns, inventory depletion, and low growth.

Companies will thus be looking for ways to hold the line on product development and production costs. Much of this will focus on materials and the economies gained by substitution, reduction, process efficiency, and other enhancements. “A molder’s biggest cost is resin,” says Dave Lawrence, president of worldwide plastics machinery and mold technologies at Milacron LLC. Holding the line on resin cost can be achieved by more efficient designs, a process Lawrence says begins with a working partnership between an OEM and a processor at the beginning of the product-development cycle. “Design is a team effort,” he notes, and no longer something passed down from one level to the next.

“Change is the mother of invention,” remarks Timothy J. O’Brien, vice president of the Americas and Europe at Sabic Innovative Plastics. “With increasing regulation and materials costs and an inability to raise prices, companies will have to be more creative and look for new [design] applications because all the easy things have been done. It’s only through collaboration of design and processing that you get changes. We’re seeing more interest [in this area] because external factors are forcing companies to be more innovative.”

Along with this is growing interest among processors in primary, auxiliary, and peripheral machinery that improve operations. “The technology and equipment in plants are crucial to income,” says David Purcell, national sales manager at Wittmann Battenfeld. “Processors need to stay on top of new technologies and add equipment with better energy efficiency, more performance and cycle-time improvements.”

The U.S. government is allowing a 100% depreciation allowance on capital equipment placed in service between Sept. 9, 2010, and Dec. 31, 2011, and a 50% depreciation bonus for equipment in service between Dec. 31, 2011, and Dec. 31, 2012. “This is a huge benefit for processors,” Purcell says, “since they can put in place new technologies that are more efficient, productive and competitive.”

**M&A driven by technology**

Another way that companies can improve technologies and capabilities is by acquisition. The industry has seen a wave of acquisitions in recent years, mostly for strategic reasons such as consolidation or adding plants, and because the recession created attractive opportunities. Experts see this trend continuing in varying degrees, but a key influence will be technology and innovation, not physical assets.

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“It will be harder to measure, but the innovation a company gains from an acquisition will be the key element,” says O’Brien. “Many companies now see technology and innovation as bigger acquisition targets than hard assets in the ground.”

Acquiring a technology or capability is a fast and less costly route to new markets, products, and synergies. With demand rising in emerging sectors such as bioresins, alternative energy, optics, and electric and hybrid automobiles, and with ongoing opportunities in such areas as multimaterial parts, lightweighting, materials replacement, and composites, technology and innovation become attractive, cost-effective targets for M&A.

“There are conflicting trends leading to either more specialization or more integration in companies,” says Markus Brinkmann, chief engineer and deputy director of Germany’s IKV plastics institute (Institut für Kunststoffverarbeitung). “Some companies deal with this situation by combining their competencies in joint projects.”

**Impact of green marketing**

One capability in growing demand is expertise with bioresins and other green manufacturing techniques, a trend driven by environmental concerns and their influence on product specification by packagers and retailers.

“Influential companies such as Coca-Cola and Wal-Mart are demanding more environmentally responsible packaging, which is driving demand for plastics based on corn and sugarcane,” says Teresa Hayes, senior vice president of research for The Freedonia Group, a consultancy. “Significant growth in production capacity is allowing prices for these products to become more competitive.”

Hayes notes that the “high cost of raw materials and energy in recent years has reduced the cost advantage some commodity plastics had over competitive materials such as paper and also allowed the rapid development of the bioplastics industry.” Nevertheless, bioplastics require expertise, which could drive some M&A.

Sustainability remains an issue for OEMs, materials suppliers, and processors. The industry has long argued that plastics provide more efficient resource conservation than paper, metal, glass, and other materials. Nevertheless, this message needs repeating, especially since some product manufacturers pit not only non-plastics against plastics in green marketing, but also plastics against plastics.

“The demands of customers of plastics products concerning performance and sustainability will increase,” Brinkmann remarks. “The utilization of sophisticated processes and tailored materials allows satisfying these demands, but it has to be done at reasonable costs and for all applications. This apparent contradiction can only be overcome by research and development.”

“Consumers definitely see the safety benefits of plastics—the message is getting out,” says Dow’s Wright. Yet challenges remain. “We are struggling in some areas such as the plastic bag bans, but that’s a very small percent of the total enterprise. And even in that area we have recycling initiatives for reuse and energy recovery. These are picking up speed, and the education process is building. The word [about plastics’ benefits] is getting...”
out, and it’s much stronger than it was two or three years ago.”

Experts believe that all levels of the industry will need to be at the leading edge of green manufacturing, whether in materials, machine efficiencies, or parts that meet environmental goals through design, materials substitution, or the use of hybrid fabrication.

Also required is greater recycling. “We need more closed-loop systems to capture, recycle, and reuse scrap,” says Sabic’s O’Brien. “We need to improve collection of materials and help create an industry [for this].” The effort will require funding, technology, and importantly, collaboration, since “no company can do it alone.”

In the meantime, community involvement by companies on this issue is critical. “Be engaged in your local community so everyone understands the environmental, economic, and social benefits of plastics,” Wright advises. “Plastics is the answer when it comes to sustainability—everybody needs to be a spokesman [for] that message.”

**Government support vital to growth**

Training and government incentives for manufacturing are areas where all levels of the industry will be focusing attention. Executives acknowledge that local officials and the federal government are beginning to appreciate how important manufacturing is to economic growth, job creation, and prosperity.

“We have to recognize the fact that if you make things, or grow them or dig them out of the ground and convert them into products, that’s how you create wealth,” Milacron’s Lawrence says. “We abdicated a lot of that to other [countries] and have to get it back. The only way we’re going to do this is through education and training people for those jobs.”

Training is vital in developed countries where demographics are squeezing the pool of workers. “The need for highly skilled employees will increase in plastics, while the avail-
ability of such persons will decrease,” IKV’s Brinkmann says. “This is especially true for Western Europe and North America. There is a huge need for training and qualification.”

Laurie Moncrieff, president of Schmald Tool & Die (Burton, Michigan, USA), notes there is not enough support for manufacturing from government, much less for preparing students and employees for the changes taking place in the industry. “There are a lot of materials and processes that people don’t know how to work with,” she says. “The [Obama] administration wants to grow the economy, but what gets ignored is that unless there is support for manufacturing, innovation will never get off the ground.”

One criticism Moncrieff has is the tendency of government to support incubators and Stage 1 segments of innovation. These are important, but are not what she calls the “low-hanging fruit”—i.e., working with people who develop products and trying to get them to keep manufacturing those products in the U.S. An important way of achieving this is by “doing everything to support them and make it cost-effective to stay in the U.S.”

Moncrieff believes more attention should be paid to small and medium-sized enterprises, the engines of economic growth. “The administration keeps listening to large multinationals that, quite frankly, don’t understand what’s needed in the grass roots, which employ the vast majority of workers and support innovation.”

Moncrieff advocates clusters, groups of different but synergistic companies that work together to secure contracts for each other and increase business for all. This, she says, is a better strategy than individual companies competing against each other and losing business as a result. She has set up a cluster in Burton, Michigan, and is working with the Small Business Administration to promote the concept. In September 2010, the Brookings Institution released a report stating that “[a]fter a decade of delay, the executive branch and Congress have joined state and local policymakers in embracing regional innovation clusters as a new framework for structuring the nation’s economic development activities.”

For Moncrieff and others, this could be a trend that sparks manufacturing support from government and job growth, both of which would help revitalize the economy and drive plastics—and other industries—forward.

“Our culture needs to change,” she says. “We’ve been laser-focused on competing against each other, and that’s a mistake. We need to concentrate on our real competition, foreign governments, even though that’s not an easy concept to get our heads around.”
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The U.S. Congress has two freshman members from the plastics industry: Representative Jeff Denham (R-CA), who owns Denham Plastics of Salinas, California, a fabricator of agricultural containers, and Senator Ron Johnson (R-WI), former CEO of Pacur LLC, an extruder and thermoformer in Oshkosh, Wisconsin. Plastics Engineering asked Johnson via email what he believes should be done to maintain growth and profitability in the industry this year.

**PE:** What do you believe government should do to encourage growth, especially among small and medium-sized businesses?

**Johnson:** Economic growth is the No. 1 solution for reducing our deficit, getting us out of the debt crisis and starting to reduce and eliminate debt. To get the economy moving we must produce a credible plan that shows the American people we are serious about constraining federal spending. We must show consumers, businesses and others that we are serious about limiting the size, scope and cost of government. That’s the best way to give them the confidence to spend money, consume products and invest in creating jobs. But we’re not going to balance the budget by spending cuts alone. We have to produce economic growth so we increase revenue the old-fashioned way—by growing the economy.

**PE:** Finding qualified people to operate advanced machinery is a challenge. How can the industry improve training of current and potential employees?

**Johnson:** [Industry] should work closely with universities, vocational and technical colleges and high schools. They should cooperate with those institutions of learning and educate them in the job skills they need. They ought to cover the whole gamut—engineers, marketing people, machine operators, welders, plumbers, clerks … [and] get involved with local education councils. Not just to provide information to those institutions about what industry requires, but to help improve education in general. They should get involved in education organizations like the Partners in Education (PIE) Council. I served as the business co-chair of the Oshkosh Chamber’s PIE council, and I know you can have an effect. We instituted capstone life-skills courses and got financial literacy added to graduation requirements throughout the Oshkosh school district.

**PE:** What do you believe the U.S. should do to level the playing field when it comes to American exports and price competition with overseas manufacturers?

**Johnson:** We should insist on fair trade. But I am in favor of free trade—minimal barriers to importing and exporting. The worst thing would be to revert to an era of trade wars. It would be bad for the U.S. economy and bad for the world economy, and terrible for U.S. manufacturers. A lot of economies that are net exporters now, such as China, could be huge customers in the future. We need to recognize that. We should take the intermediate and long-term view of these things, and not just the short-term view.

**PE:** What are some of the programs you will promote in the Senate that will have a positive impact on plastics and other manufacturing industries?

**Johnson:** The top priority is getting our fiscal house in order.

—Patrick A. Toensmeier
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