



GLOBAL PLASTICS LETTER

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“A World of Plastics Information”

Part news. Part views.

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15th Year, Second Century

Dear Colleague:

Double digit delta revenue recovery results. Plastics profits proliferate. 2Q seems likely to produce best results in 5 years as inflation remains low and steady productivity results in long term healthy business conditions, with accompanying low borrowing interest rates. U.S. natural gas reserves changing the global energy matrix, with exports increasing. Look for a spring revival at factories as manufacturing inventories are restocked. U.S. manufacturing continuing gains in output this year, with a 3.5% or better growth. Expansion is partly just the pendulum swing after the great recession cutbacks - from 2008-2009, factory output fell 20%. Now the recovery is finally showing results. Look for real growth in the following industry sectors important to our industry: aviation; autos; chemicals; pharmaceuticals; biotech; medical equipment; semiconductors and heavy equipment. Our industry should be chasing applications here. Look for smart phones with built in encryption, offering greater security for sales reps...coming soon. If possible, fly for business on Tuesdays or Wednesdays to score lower fares.

TRENDS:

Plastic film and sheet markets are estimated to grow at a CAGR (compound annual growth rate) of 4.4% from 2014 to 2018, with Asia accounting for 1/3, according to a noted market researcher. Global demand for benzene, an important thermoplastic resin building block, increased 2.8% in 2013, according to IHS Chemical's recent market study. Lego looking to bioplastics to replace ABS in their products. Eastman looks to appliances and medical applications for growth of its Tritan copolyester. Global PTFE sales to generate \$6.4 billion by 2020 according to research. IAPD distributor member analysis by this publications research team reveals some interesting statistics going forward into the second half of this decade: Average sales/branch...\$6 million. Average employees/branch...7-8. Corporate staff- branch employee ratio...1/10.

OUTLOOK ASIA: ... by Mal Binnie, our special correspondent in Sawtell, Australia

Through the first Qtr most Pacific countries reported growth in their manufacturing and plastics industries. The \$Aus continues to move around \$US 0.90 but with experts predicting it to move down during late 2014 to \$US0.80. This is expected to give the chemical and plastics industry a further lift in exports after a record 2013 year. The Plastics and Chemical industry supplies inputs to 109 of Australia's 111 manufacturers. High value manufacturing will have a great future in Australia led by Boeing and GE. Another example is Quickstep Aust who manufacture high tech composites and supply the F35 JSF US program and the C130 J Hercules. Together with Rosebank Eng Sth Aust and BAE who are also investing in the JSF program. HVG Graphics launched Savanna, an exterior direct print floor graphic system and a new aluminium composite panel Viewpanel for signage, display and exhibitions. Ausplas was last held in Sydney in 1990 but will this year be held at the Sydney Showground 13-16 May. The theme is “Advancing Plastics Technology”. EPlas Melb. introduced Quicksilver truck lining systems to their engineering product range. Ken Girdlestone Plastral Eng Mgr reports visitors from

Simona Hkg and Gehr GmbH and also reports Plastral's introduction of Simona's Simowood to the market. 3D printing in Aust is growing rapidly with 2 trade shows planned for this year. Global Architecture firm Genser has opened a Sydney office. Amcor's acquisition of Detmold has received Government approval. NZ manufacturing started 2014 strongly with a PMI 56.2 for Jan. It was also noted that manufacturing in NZ generates 14.6% of GDP. Flight Plastics has opened the country's first plastic packaging plant to manufacture food grade PET packaging from recycled PET. There are many new opportunities for plastic film and sheet as leading white goods manufacturer Fisher and Paykel expands. The Chinese manufacturing sector continues to improve this year and the PMI reached 50.2 for Feb. The gains will continue as it directs effort towards the local consumer economy. Investment in China continues with local firms expanding and investing and continued interest from OS companies. Americhem Ohio plans to double the size of its Suzhou operations, Addivant plans a product development centre in Shandong and Molex Inc has expanded its Chengdu facility. Sinopec, the state owned oil and petrochemical company is being sued by Ineos Group for breach of intellectual property agreements. Ineos reported that that most of the worlds new acrylonitrile production through 2020 will be in China. Teijin appear to have solved the issues with PC made for automobile useage and have an initial application in Nissan taxis in New York. Thailand's Plastics trade fair will be renamed T-Plas and is planned for 26-29Aug 2015. The IPF Japan is planned for Oct 28 – Nov 1 2014. Reports from Japan indicate that Toyota who is enjoying a period of high profitability is easing pressure on plastics suppliers to cut costs!!! Chien Jin Plastics Ipoh Malaysia has been integrated into Norma Group AG. Green Polymer Inc Sth Korea has tripled its capacity with \$6million investment and plans further expansion this year. Hyundai Motors and Lotte Chemicals have developed super light carbon fibre reinforced composites for the main frame of the Infrado concept car. Sing An Hwaseong, Sth Korea has opened an extrusion technology centre in the USA.

OUTLOOK EUROPE: ...by Ralph Ammann, our EuroZone correspondent in Germany

The new European report focuses on new plants and certifications of important players in the semi- finished market. So German-based Simona AG has held a groundbreaking ceremony for the new Technology Centre to be built at the company's head-quarters in Kirn. The allocated site at Plant II in Kirn will accommodate a production facility spanning 1,200 sq m and a three-story administration building – 1,000 sq m in size – for a laboratory and development unit. Machinery and systems used in the development of extruded sheets, pro-files, solid and hollow rods as well as pipes are said to be installed as soon as construction work on the new building has been completed. In this context, the first measure will be to install a system for the extrusion of new high-tech plastics. They include SIMOWOOD, a natural-fibre-reinforced hybrid material that has the appearance and haptic properties of wood, PLA, a bioplastic, and PFA, a fully fluorinated high-performance plastic. According to the company the Process Development, R&D and Laboratory departments are to be brought together at the Technology Centre. In total, the Germans plan to invest more than €10 million in new machinery and systems in the coming years. Meanwhile, located in in Savli, Vadodar, German-based Röchling Group has launched their first manufacturing plant for thermoplastics in India. Its construction began in November 2012 and was completed in October 2013. Manufacture of sheets and profiles of UHMW and its variants, sheets and rods of Polyacetal (POM), Polyamides (PA6) and their variants commenced in the end of 2013. Röchling is no stranger to the Indian market. The company had entered India in 1998 with a Liaison Office in Mumbai. In 2007, the Germans set up in Vasai, near Mumbai, a modern CNC machining facility for its flagship product Lignostone®, a wood based high performance insulation material for high voltage transformers. Meeting with a high level of success with this venture, in 2010 Röchling Vasai extended machining services for its Thermoplastics customers as well. Furthermore, German Polymers distributor Bieglo GmbH has extended his product range. Besides (PEEK) raw-materials in form of granules and powder, the Distributor also offers a range of semi-finished PEEK-products: Film and sheet, rods, tubes and now also multi- and monofilaments made up of CoPEEK and its alloys. CoPEEK filaments can be used in demanding applications in high temperature, chemically aggressive and abrasive environments. To withstand the combination of those extreme conditions makes these filaments a prominent material for the usage in conveyor belts, sewing threads, electrical cable reinforcements and filtration parts; also growing numbers of composite-applications as in comingled yarns, UL-tapes or thermoplastic prepregs out of CoPEEK can be realized. Additionally, UK-based Victrax has successfully obtained the rigorous AS9100C/ISO9001:2008 aerospace certification for its VICTREX Pipes™ production lines. This certification gives the aerospace industry the confidence to specify the robust, lightweight tubing made from Victrax PEEK polymer. By

achieving this milestone, the world leader in PEEK polymeric solutions continues to take a proactive approach in providing innovative metal replacement products to help boost the efficiency of today's and tomorrow's aircraft. Lastly, Evonik Industries has obtained NOR-SOK M-710 qualification for its newest generation of polyether ether ketone VESTAKEEP® PEEK 5000 G. The successful test performance proves the optimal suitability of VESTAKEEP® PEEK 5000G for the highly demanding conditions of the oil and gas industry.

PRICING:

Commodity prices, including PE and PP are rising single digits as are prices for PS. Limiting these price changes to low single digit deltas is no doubt causative by extremely low natural gas prices and caps on petroleum. Once again supply-demand ratios rule. It is important to note that lower energy prices at the mid point in this decade will continue...check Dow Chemical's rising stock price which reflects this. Some inflation can be expected in the ETP sector, somewhat influenced by tightening in benzene supply. Some moderate inflation exists in the MMA market as producers take up sheet prices...more building block (acrylonitrile) capacity coming on stream.

MANUFACTURER/DISTRIBUTOR BRIEFS:

United Resins, long time supplier of cast acrylic rod and tube to A.L. Hyde is now known as US Cast. Curbell announces new responsibilities for five key employees in customer service roles.

A.M. Castle reports 4Q results for its Total Plastics unit: sales of \$33 million...3.3% higher year over year. For all of 2013, sales were \$135 million...6.6% higher than 2012 - auto, life science and marine sectors are reported as contributory. Teijin develops new PC glazing technology for vehicles...claims smooth, distortion-free surface. Octal Petrochemicals LLC FCZ building plant in U.S. to produce PET sheet from recycled product. PolyOne stops production of Royalex ABS sheet. DuPont appoints Patrick Lindner President, Performance Plastics unit.

MERGERS, ACQUISITIONS, ALLIANCES, EXPANSIONS AND DIVESTITURES:

SIMONAAG makes another acquisition...entering into an agreement to purchase Boltaron Performance Products LLC. Boltaron, formerly Empire Plastics; Gen Corp; General Tire and Rubber; Seilon and originally Sieberling Rubber's Plastics Division. All produced sheets of PVC, PE and PP. This transaction follows SIMONA's buy out of Laminations last month... SIMONA AMERICA management to be led by L. Schorr, D. Li and M. Lynch, all from Boltaron and Laminations with consolidated sales estimated to be in excess of \$50 million.

Plaskolite entered into a JV with Isik Plastik of Turkey to produce MMA sheet for the European market...set to produce 1000 mt/y in 2014, to be distributed by subsidiary BTS International (The Netherlands). Cast Nylons expands its plant in Ohio, reflecting resumed growth. Invista breaks ground for HMD and nylon 6/6 plants in China.

INDUSTRY INTERVIEWS: ...concluding our interview with Guy Blissett, IBM Corp, and author of *Facing the Forces of Change: Reimagining Distribution in a Connected World*, sponsored by NAW and presented courtesy of *Modern Distribution Management* (MDM), originally published in their 12/10/13 issue, which can be viewed online in its entirety at: <http://www.mdm.com>

MDM: Is the rise of analytics contributing to that shift?

Blissett: Yes, very much so. Analytics are unleashing real changes in the roles, expectations and capabilities across all functions. Analytics are creating new levels of transparency and insight in areas like cost to serve; customer, supplier and market profitability; supply chain optimization; and optimal pricing and promotion structures. That transparency is driving very different conversations and behaviors.

If we think about, say, marketing and IT, analytics is bringing these two functions closer together and driving much deeper collaboration. For example, more and more of the marketing spend and attention within a distributor is going to be focused on digital marketing, a greater proportion of revenues will flow through various digital channels and more of the distributors' interactions with both customers and suppliers will be influenced by its digital presence and capabilities. Obviously those factors pull the CIO and the chief marketing officer much more closely together.

MDM: What other findings from the study do you think are worth noting?

Blissett: There are two things I would really draw attention to. One is the increasing criticality for distributors to deliver a superior customer experience. Distributors have focused for many years on customer service, but now it is essential to be thinking progressively, innovatively and, ultimately, far outside their current comfort zones around a more holistic concept: customer experience. One of the factors driving this is the demographic shift among buyers, who are getting younger and have a very different way of thinking, transacting, evaluating, getting information and interacting. They have a different set of expectations about how things will work and how they will engage with business partners, and it's incumbent on distributors to be thinking about how they leverage the capabilities of various functions to deliver a unique and compelling experience for each customer segment. The experience must be consistent across channels, fully integrated and deeply customized.

The other area to really highlight is the power of analytics to help distributors start to do things very differently. We are moving very rapidly into the era of widely accessible predictive and prescriptive analytics where, by mining the data that flows through and around our organization, we're actually able to anticipate, predict and prescribe what might happen in the future.

Historically, for example, when a customer left for a competitor, the distributor knew when it happened and may have had some notion of the factors that influenced that decision, but only after the fact. With predictive analytics, we're now able to continuously monitor how customers are interacting with us, to surface hidden trends, link disparate actions and learn how their purchasing habits are changing, things like frequency of purchase, calls to our customer service and website visits, which give us the ability to assess the health of our relationship and to see early on when things deviate from traditional patterns. That allows us to take prescriptive action such as a promotion, service call or executive intervention, and I think it's those types of analytics that are going to be very empowering for distributors going forward.

MDM: What other trends are you watching that could create significant future change in the distribution industry?

Blissett: One is 3D printing. As we highlight in the report, 3D printing is very rapidly moving from the laboratories, from prototyping, into much more of a production environment. The application of 3D printing is expanding very rapidly across industries and mediums. We're seeing the speed of the printers change, and you can now print not just in plastics but in ceramics, metals, even biologic material.

I think the ability to print in these diverse materials creates huge opportunities for distributors. It also asks distributors to think differently about their own supply chains. One of the rubs against 3D printing is that it takes a while – from 15 minutes to several hours - to print a part. That time delay impacts the business case for printing those parts versus just having them in inventory.

But think about the extended supply chain for many of the parts that sit in a distributor's warehouse. If you start to factor into the business case the number of items that are held in inventory, the amount of time it takes for that part to get manufactured somewhere in Asia, for example, and the resources involved in shipping it across the Pacific, unloading it in Long Beach, shipping it to the warehouse and storing it there, you can be talking about months and months of time and working capital tied up in that part.

When you start to factor in all of those components, the economics for 3D printing looks more attractive. It's not going to revolutionize wholesale distribution overnight, but we will quickly see broad categories of product impacted by this technology.

The other area that I'm watching closely is the various forms of robotics. It's incredible to look at what Amazon has done with their acquisition of Kiva Systems and C&S Wholesale's acquisition of CasePick Systems in the robotics area and developments like the Baxter Robot. The cost of a Baxter Robot is very accessible at around \$25,000, and its ability to perform some of the more repetitive, not particularly value-added tasks in a warehouse or on a production line could rapidly change the economics of a distribution operation and free up personnel for more value-added tasks. Both robotics and 3D printing are highlighted in the latest report.

Information contained in this newsletter has been taken from trade and statistical sources that we consider reliable but we cannot assure its accuracy or completeness. Any opinions expressed reflect our judgement as of this date and are subject to change.