Mel Ettenson's GLOBAL PLASTICS LETTER

MAY 2000

Dear Colleague:

As we enter the half-way mark in 2Q 2000 ,it appears that the major economies around the world will be up this year – Canada , Asia , Latin America and Europe should all show single digit increases - the drivers will be : the U.S. economy (providing markets)coupled with free-trade alliances which help to reduce costs, sharpen competition, and raise consumer incomes and demand for goods.

The only caveat will be the"price at the pump" scenario which could trigger inflation and thus recession – as it did in the seventies and eighties – but not in the nineties. A wise strategic plan would be to reduce inventories and increase exports. More on how to do this by use of the internet later on in the TRENDS section of this issue. We recommend you obtain a copy of "Roadmap For e-Distributors" issued by IBM and available from them as well as the IAPD. Some excerpts : "… simply put …there are too many distributors, carrying too much inventory for too few potential customers – the result is increasingly shrinking margins- … manufacturers have access to customers via electronic means such as web sites , faxes , e-mail … manufacturers used to focus on influencing the selling activities of distributors – today many of them are focusing on influencing the buying activities of their ultimate customers."

NPE 2000 is scheduled to open June 19-23 in Chicago and we recommend attending (go to www.npe.org for more details) – for those who cannot – we will cover the sheet , rod , tube , film , highlights in our July 2000 issue. A likely focus will be on e-business and the GE Polymerland story – where resin sales went from $60,000 per week in mid-1997 to $7 million per week (½ of their sales) and forecasting $29 million per week by 2001! – more on this later on.

PRICING forecasts: PE, PS, PET, PVC prices continue to rise in early 2000 – although single digits, this reflects a liquidation of some inventory that was built up in anticipation of a Y2K shortage – this cut supply down somewhat and thus the stage was set for the increase. Some experts are predicting lower prices on PP and PE in the last half of this year – the consolidation of some manufacturers (Dow/Union Carbide and Exxon/Mobil) will be balanced with the expanding capacity in N. America and Asia. We see upward pricing in engineering plastics in 3Q 2000 – same for PC and MMA.. PVC will continue to be the exception – it should continue to rise thru 2000. PET , UHMW PE , ABS will be under pressure to continue to rise.

Monitor sheet prices at the extrusion level by applying the following formula:

1. Multiply width x length x thickness (all inches)= cubic inches
2. Divide above by the specific gravity of the material x .03615 = weight in lbs per sheet.
3. Multiply above by the resin price (per lb).
4. Multiply above x 1.40 = cost to manufacture the sheet.

Simply stated – the formula is:

((w x l x thk) ÷ sp.gr) x .03615 x resin price/lb x 1.40 = cost of sheet to extrude.

TRENDS: In a word – *e-business .* Note that the terms change quickly – last month it was e-commerce – the month before it was b2b . Thus does the language in business in the 21st century proceed at " dog year " speed (7 times faster than our calendar year).

Leading the way in our industry is GE Polymerland – their website , launched in mid-1997 , had revenues of $60,000 per week has grown to more than $7 million per week in 2000 – this now accounts for nearly half of their total sales .GE is forecasting that in 2001 the site will bring in more than $ 1.5 billion in sales . Another step has been taken with the announcement that all of GE Plastics sales will be thru GE Polymerland. Although this is all resin product – look at the implications for sheet , rod , tube and film .

Using www.polymerland.com , customers can search for plastics by name , number , or characteristic ; download product information or fax it to themselves ; place and track orders ; view their purchasing histories ; obtain certs – all on a 24/7 basis. No wonder the rumors persist that GE will acquire Cadco (with a brand new order-taking website mentioned in a previous issue of this publication) – the fit is there and the trend is here.

Other implications of this revolutionary change in the business model for our industry are the direct selling by manufacturer to ultimate consumer (industrial and retail alike)– recent moves by Home Depot show the turmoil that can ensue – we believe that joint " e- showrooms" could help resolve the sales channel conflict . A company called Exterprise in Austin TX is pioneering a range of collaborative e-commerce models with innovative software . Worth looking into.

Continuing trends are alliances to form industry purchasing web-sites such as the big 3 in automotive, as well as the petrochemical and plastics industry's "big 5 "(see below). In fact , Dow's former e-commerce head has left to for internet start-up www.fobchemicals.com , soon to be followed by www.fobplastics.com – the strategy here is to serve small customers – and sheet , rod , tube and film are in the plans, following resin . For a complete listing of e-procurement websites , fax us a request .

All plastic s ,r ,t and f industry participants can realize benefits from e-commerce ; the issue is whether companies invest in trying to understand how to restructure their current businesses –fabricators and distributors have to think about business practices today and what they will look like in the very near future and what and how do I create value currently and what will I have to redesign to survive , grow and achieve profits?

Another trend to watch for – it's now just a blip on the screen – Russia is dumping PTFE resin on some world markets and a dumping duty is being asked for in some coutries including India . Could portend a price decrease on PTFE products in our industry by 3Q 2000.

MERGERS ,ACQUISITIONS ,ALLIANCES , AND EXPANSIONS: Tufnol Industries Ltd (UK), manufacturer of engineering plastic shapes(high pressure laminates) and composites , was sold to its management group and will continue to operate as before in the UK South Africa. Roger Trotman, former owner retires.

GE Plastics form jv with Energy Conversion to produce PC rewritable DVD discs.

GE Lighting acquires Royal Lite , manufacturer of shatterproof flourescent lamps , with a Surlyn coating – could impact (pardon the pun) Armalite® - another vertical integration for GE.

DSM Eng. Plastics buys 100% of Jiangsu Jiangyin Mould Plastic Group Co. in China , giving them entrance into the automotive markets in China .

Corbin Motors , a California-based producer of , battery-powered cars , is looking for investors to help it expand and bring 2500 of its single passenger Sparrow to market by 4Q 2000.

DuPont , Dow , BASF , Bayer , and Celanese (Ticona) have formed a b2b online marketplace for resin sales – the as-yet-unnamed company will focus on injection molders.

NEW PRODUCT NEWS: GE PLASTICS will launch a new amorphous polymer at NPE 2000. The material now called W4, offers extremely high gloss with a depth of image, excellent resistance to gas

and other chemicals , and long term retention of gloss and color after outdoor weathering – initially targeted at automotive body exteriors .
DSM offers Nylasteel™ , a family of products based on anionically-polymerized nylon 6 - permanently attached to specially treated steel cores , designed for use in power transmission products –supplied in billets with either Nylatron® NSM or MC® 901.
High Gloss Nylon 6 – Capron HM from Honeywell (formerly Allied Signal Plastics).
Fuel Cells? – lots of talk about this new industrial technology which converts hydrogen fuel into electricity – uses flouropolymers and lcp's from DuPont for the bipolar plates and nylon, acetal, PET and PBT for fuel cell housings and parts.
PETG (Spectar® co-polymer)from Eastman is getting high marks from the display industry and continues to make inroads against MMA and PC sheet .
DSM has a CD-ROM providing fast, off-line access to product information– go to www.dsmep.com for details. Excellent sales tool for presentations.Also get their Akulon nylon brochure.
Victrex PEEK being used in the UK in a laparoscopic surgical device – reason – withstanding multiple autoclaving at 280F and inherent purity – PEEK continues its growth as a leading HPM product line.

PERSONNEL NEWS: Kurt Glaser resigns as President of A.L. Hyde – joins Dick Garthwaite at CFC – replaced by Charles Bierds , who comes from another Danaher company – CTC Joslyn.
Allied Signal (now Honeywell) appoints Steve Hochhauser vp and gm of Eng. Plastics business , part of Performance Polymers.
Tekra appoints Mark Norton as tech mkt specialist for western U.S.
Ineos Acrylics (formerly ICI Acrylics) names Ross McMillan as president and Wyndham Draper as gm for Lucite acrylic sheet.

Websites of interest : www.supplybase.com , www.supplierone.com , www.plasticsnet.com , www.plasticlink.com . www.plasticlinks.com (these last two are separated by one "s") www.caplasticsmarkets.com , www.findmro.com - the aforementioned are of interest to both buyers and sellers in our industry .

DISTRIBUTOR/MANUFACTURER BRIEFS: Barlo Plastics NV , Europe's top clear sheet extruder is building a plant in the Czech Republic – primarily producing PS sheet.
Texloc , PTFE extruder adds clean room for medical tubing capabilities.
Saint-Gobain announces net income up 15% for 1999.
Equistar to introduce new UHME film resins at NPE 2000 – also a TPO (thermoplastic polyolefin) that is autoclavable and offers higher heat resistance than other PE's.
DSM chooses Chemconnect as preferred exchange for trading on the internet – this for resins now.
Bayer and Allied Signal announce an alliance to supply each other with nylon 6 resin on a global basis for 10 years to ensure consistent supply and uniform quality for their world-wide customers.
Minnesota Plastics continues its innovative ad campaign to solicit machine shops as a supplier – not a fabricator – and speaking of fabricators – a new plastic fabricator association forms – more on that in the June 2000 issue.
INDUSTRY INTERVIEWS: Ged Walsh, President and COO of Saint-Gobain (formerly Norton) Performance Plastics, was appointed to his present position in January 1998. Ged joined Saint-Gobain from 3M where he spent 30 years in various world-wide management positions , having joined 3M in his native England. We interviewed Ged by phone in his offices in Wayne, NJ.

GLOBAL PLASTICS LETTER (GPL): What company's and products now make up the Performance Plastics Group?
GED WALSH(GW): Norton's and Furon's product lines consisting of high performance polymers, fluid management systems,, medical devices, films, tapes , foams , bearings and seals as well as compression molded products.
GPL: When did this all begin? What's the history of all the acquisitions?

GW: *In 1997 we acquired a silicone business,and ASTI pump in Europe; in 1998 it was a specialty injection molder (Nippon Fine) also in Europe and in 1999 we acquired Silmed ,Nalge Process Technology ,Sanitary Couplers as well as Furon. These companies were primarily in the U.S..*
GPL: How is the company structured organizationally – both here and abroad?
GW: *The medical device business ($100 million) is separate – the balance of the $750 million business is broken up into 5 global sectors: Fluid Systems;Precision Products;Advanced Films;Specialty Elastomers; and Engineering Components. There are 15 strategic business units under these five sectors on a global basis – primarily in the U.S. and Europe but also globally.*
GPL: How much of your product line goes through distribution?
GW: *It ranges from 20% to 60% - with average of 40%*
GPL: How is this likely to change in the next decade?
GW: *It should remain relatively stable – we are looking for added value to be delivered by distributors and if we can see that we expect no change in our mix.*
GPL: What are your plans for e-commerce ? Will this affect distribution?
GW: *We have four active websites:* www.norton.com ;www.tygon.com; www.furon.com; and www.asti.com (france) *–and we want to consolidate these to one. I don't happen to believe that the internet will change everything overnight, so we will be selective in our strategies. As for how distributors will be affected – we'll use the channel that works best for the customer , especially the one offering the OEM the best in customer service.*
GPL: What products will experience the most growth in the next five years ?
GW: *We see semi-conductor products , high performance materials(HPM) - especially for industrial processing and transportation markets; medical and pharmaceutical applications and the document processing industry as all leading the way in growth over the next 5-10 years.*
GPL: What technologies will have the greatest impact on your manufacturing processes: What processes do you now employ?
GW: *We mainly extrude, compression mold and injection mold. The demand for HPM's replacing conventional materials such as steel will have the greatest impact on our industry and company.*
GPL: How many employees and plants do you have worldwide?
GW: *5500 employees at 50 plants globally.*
GPL: How much do you import? Export?
GW: *We export about 10-15% . Our manufacturing mix is 70% in. No. America;25% in Europe and 5% in Asia.*
GPL: What will be the biggest changes in your business model for this decade?
GW: *We will drive to get a better geographical balance – provide new products –through expanded R&D – focus on customer solutions. We want to "delight" the customer!*
GPL: Who are your primary competitors?
GW: *There are several , depending on sectors and products ; i.e. P-H Rehau; duPont;3M;Garlock;Dana;Shamban ; Rogers etc. No one competitor covers all our markets.*
GPL: What advice would you give a plastics engineer/marketing person starting out today?
GW: *Focus on your professional expertise and strive to understand leading edge polymers.*
GPL: What do you consider your greatest achievement in business?
GW: *Building successful teams and investing in people is what it's all about in the world of business.*
GPL: Thank you Ged and continued success for this dynamic growing company under its new name.