

PLASTICS CUSTOM RESEARCH SERVICES

695 Burton Road
Advance, NC 27006

THE INDUSTRIAL THERMOFORMING BUSINESS: CHARTING A WAY FORWARD

PCRS has researched and published several reports since 1995 covering the North American industrial thermoforming business, most recently in 2009. Over the period November 2012-January 2013 we revisited this business, conducting a survey of 146 U.S. and Canadian thermoformers with 50% or more of their formed output devoted to consumer and industrial products other than packaging. One of our main objectives was to determine how these companies fared during the Great Recession of 2008-2009 and its aftermath. Secondly, in light of that experience, we wanted to ascertain what strategies these companies were adopting to build their customer base and grow their sales going forward.

We knew from previous research that the regional industrial thermoformers enjoyed vigorous growth in the 1990s. However, that growth dynamic faltered at the start of the new century when the U.S. economy experienced the dotcom crash and a minor recession. By 2003 sales of this group had recovered, and strong annual sales growth resumed through 2007. Then came the Great Recession. Sales of this group tumbled 14.4% in 2008, rebounded modestly in 2009, and then fell back slightly in both 2010 and 2011.

By 2011 the aggregate value of sales of regional industrial thermoformers was slightly less than \$2.7 billion. Our survey suggests sales rebounded 3% in 2012 to reach \$2.75 billion. Yet looking to 2013 less than half the survey respondents (45%) foresee an increase in their sales of industrial products whereas the other 55% foresee either no change, a slight sales decline, or there's simply too much uncertainty in the current political economy to speculate as to how their sales will evolve in 2013 and beyond.

The factors influencing the financial welfare of regional industrial thermoformers are both endogenous and exogenous. The process provides relative ease of entry, so there are many small, under-capitalized players usurping market share. The process also yields few economies of scale expanding individual plant operations, which leads to a proliferation of plants with insufficient scale to meet evolving market demands. Then there are challenging external forces at work. The scope for thermoformers must be viewed in the context of the market environment in which they operate. First of all, since the turn of the century the U.S. economy has ratcheted down to a lower long-term structural growth rate. Household formation has slowed, and this has dampened demand for many durable goods the industrial thermoformers rely on for their sales. Secondly, globalization has adversely impacted all regional plastics processors – blow molders, injection molders, rotomolders, thermoformers – competing in the structural plastic part market space. And obviously foreign plastics processors compete in this market space as well.

Our sense is that regional industrial thermoformers need to re-evaluate their business models going forward. There are several major and niche industrial product markets with good current and future growth prospects; we identify many of these markets. Secondly, companies with a mix of custom and proprietary part programs seem to have weathered the recent economic storm reasonably well. Thirdly, we foresee a future where OEMs will exercise a preference for structural plastic part suppliers with multiple plastics processing capabilities as well as extensive secondary operations conveying additional aesthetic and functional value-added. Finally, we encourage regional industrial thermoformers to explore export opportunities beyond North America insofar as the global economy has been growing and will continue to grow faster than the regional economy.

February 2013

125 Pages

28 Tables

10 Figures

TABLE OF CONTENTS

INTRODUCTION

The PCRS Plastics Processing Report Series
The Goals of the PCRS Plastics Processing Report Series
The PCRS Research Program Methodology
Defining the Industrial Thermoformer Category
The PCRS Industrial Thermoformer Survey Questionnaire
The PCRS Industrial Thermoformer Coverage

EXECUTIVE SUMMARY

Recent Trends in the Regional Industrial Thermoforming Business
The Size of the Regional Industrial Thermoforming Business
Prescriptions for Growing the Business in the Future

PART I: THE EVOLVING BUSINESS CLIMATE CONFRONTING THE REGIONAL INDUSTRIAL THERMOFORMERS

The Recent Trend of Growth in Regional GDP
The Recent Trend of Growth in Regional Durable Goods Manufacturing Industries
The Recent Trend of Growth in the Regional Plastics Industry
The Likely Future Growth of Regional GDP and Durable Goods Manufacturing Industries
The Prospects for Reshoring Manufacturing Operations

PART II: THE RECENT TREND OF GROWTH AMONG THE REGIONAL INDUSTRIAL THERMOFORMERS

The Trend of Industrial Thermoformers' Sales, 1996-2011
The Trend in the Composition of Industrial Thermoformers' Sales Growth, by Scale of Operations, 2008-2011
The Trend in Industrial Thermoformers' Infrastructure: Plants, Forming Lines and Employees, 2008-2011
The Trend in Industrial Thermoformers' Labor/Capital Ratio, 2008-2011
The Trend in Industrial Thermoformers' Forming Lines per Plant, 2008-2011
The Trend of Industrial Thermoformers' Sales in 2012 and Expectations for 2013

PART III: THE EVOLVING REGIONAL INDUSTRIAL THERMOFORMER'S BUSINESS MODEL

The Industrial Thermoformer's Primary and Secondary Operations
Recent Corporate Consolidation among the Industrial Thermoformers
Shares of Custom and Proprietary Product Output
The Extent of Additional Plastics Processing Capabilities
The Shifting Geographical Distribution of Plants
Leading Sources of Forming Lines
Leading Sources of Extruded Film and Sheet
Trends in Resin Selection in Film and Sheet for Industrial Products
The Scope for Bioplastics in Industrial Thermoforming

The Pace of Technological Change in Industrial Thermoforming

PART IV: MAJOR MARKETS AND MARKET NICHE SERVED BY REGIONAL INDUSTRIAL THERMOFORMERS

Major Markets

- Agricultural Equipment
- Aircraft Interiors
- Appliances
- Automotive (OEM and After-market)
- Building & Construction
- Electronic Equipment
- Heavy Trucks
- Marine Products
- Material Handling Products
- Medical/Laboratory Equipment
- Military/Defense Products
- POP Displays & Signs
- Recreational Vehicles
- Transportation (non-automotive)

Niche Markets

Export Markets

Leading Industrial Thermoformers in Major and Niche Markets

The Current and Likely Future Size of Industrial Thermoformers' Markets, 2012-2017

PART V: PROFILES OF REGIONAL INDUSTRIAL THERMOFORMERS (partial listing)

The Current Hierarchy of Regional Industrial Thermoformers

- | | |
|-------------------------------|---------------------------------|
| AIA Plastics | PDI Plastics |
| Acrylon Plastics | Pacific Plastics Design |
| Allied Plastics | Paradise Plastics |
| Asheville Thermoform Plastics | Paragon Plastics |
| Associated Thermoforming | Penda Corporation |
| Brentwood Industries | Plastic Fabricating |
| CSL Plastics | Plastic Fabricators |
| Cadillac Products Automotive | Plastics Design & Manufacturing |
| Complete Plastic Fabricators | Plastics Unlimited |
| Duo-Form Plastics | Polyportables |
| East Iowa Plastics | Productive Plastics |
| Engineered Plastic Products | Profile Plastics |
| Fabri-Form Company | Pro-Form Plastics |
| Formed Plastics | Quality Craft Corporation |
| Fox Lite | Ray Products |
| Freetech Plastics | Reliable Formed Plastics |
| General Plastics | Robinson Industries |
| Gilbralter Plastics Products | SF Technology |
| Gregstrom Corporation | Soroc Products |
| Hagans Plastics Company | Summit Plastics |
| Harva Company | Techniform Industries |
| Hill Plastics | Thermoforme LR |

Horizon Plastic Products
IPR Automation – Sohner Plastics
Indiana Vacform
Industrial Thermoform
Kinro Composites
Kintz Plastics
Landmark Plastics Corporation
McClarin Plastics
Multifab

ThermoPro
Trans Form Plastics
Universal Plastics Corporation
Usheco
Vac Form
Vac Tool Company
Vantage Associates
Welch Fluorocarbon
West Wisconsin Plastic Corporation

ABOUT THE AUTHOR

Dr. Peter J. Mooney is the founder and president of Plastics Custom Research Services. Dr. Mooney holds a Ph.D. in economics from the University of North Carolina, and he has covered the plastics industry as a technical/economic market research analyst and consultant since 1981. He is a member of several plastics industry associations such as the Society of the Plastics Industry, the Society of Plastics Engineers, the Society of Manufacturing Engineers, SAMPE, and the Association of Rotational Molders. He has researched and written over 100 multi-client reports, as well as over 100 single-client reports, in the field of plastics and related industries. He has also organized, chaired, and made presentations to numerous conferences on critical issues facing the global plastics industry.

ABOUT PLASTICS CUSTOM RESEARCH SERVICES

Plastics Custom Research Services was formed in 1993 in response to the growing demand for accurate and insightful market research tailored to the evolving needs of plastic industry participants. PCRS is able to utilize research methods developed through over 30 years of experience in this field - methods that yield cost-effective and timely data and insights of relevance to the product and service offerings of the plastics industry. These research methods include telephone-based and in-person surveys of key decision-making officials in the field, as well as hard-copy and electronic searches of trade literature and patents. Research findings, conclusions and recommendations are provided in written and oral reporting formats. PCRS also researches and publishes multi-client Plastics Industry Reports, dealing with subjects that are part of its core competencies and that have relevance to a wide range of plastics industry operatives.