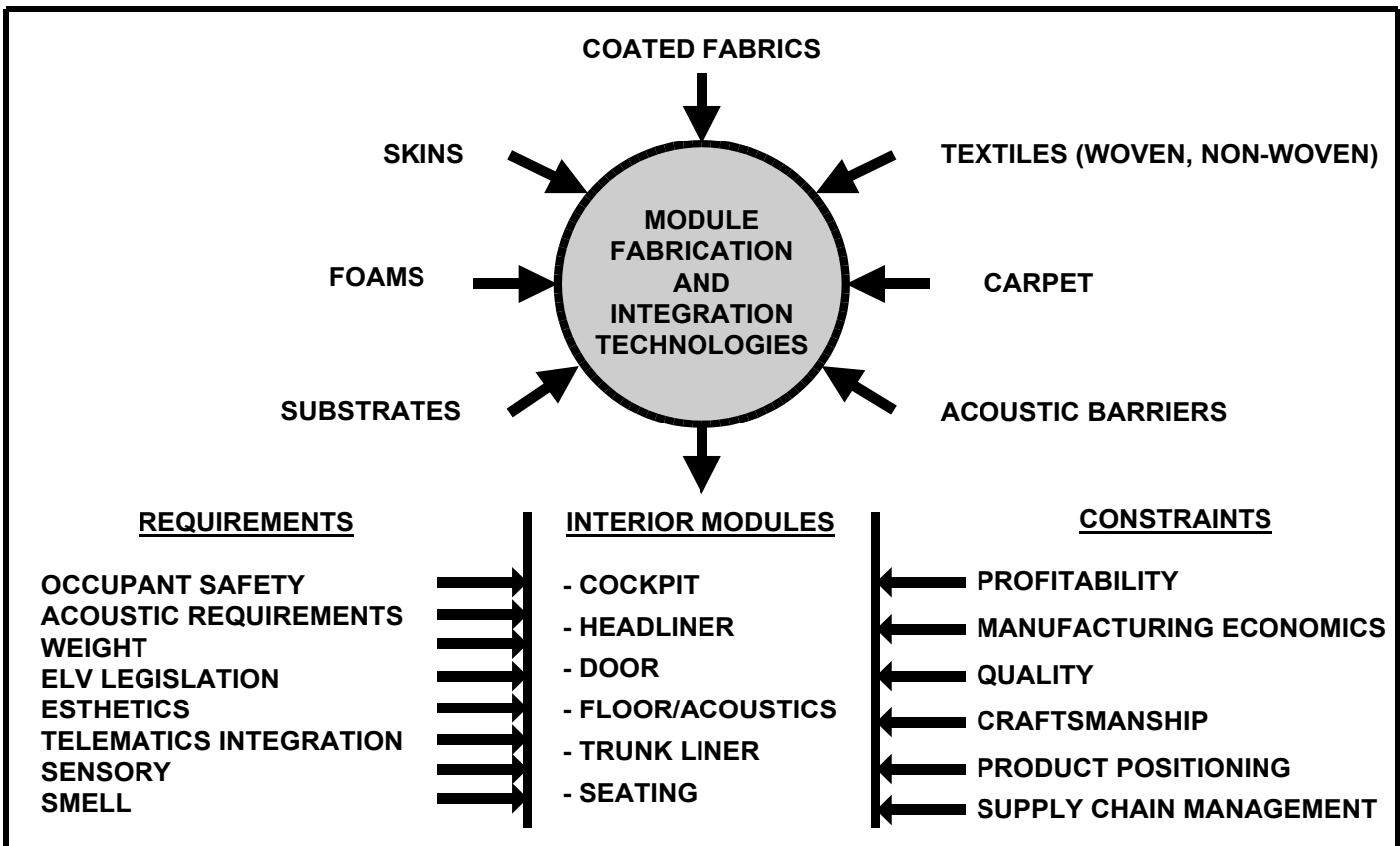


Automotive Interior Soft Trim: Skins, Foams, Coated Fabrics, Textiles, and Acoustic Barriers



Prospectus for a Global Multiclient Industry Analysis Completed in July 2003

Robert Eller Associates, Inc.

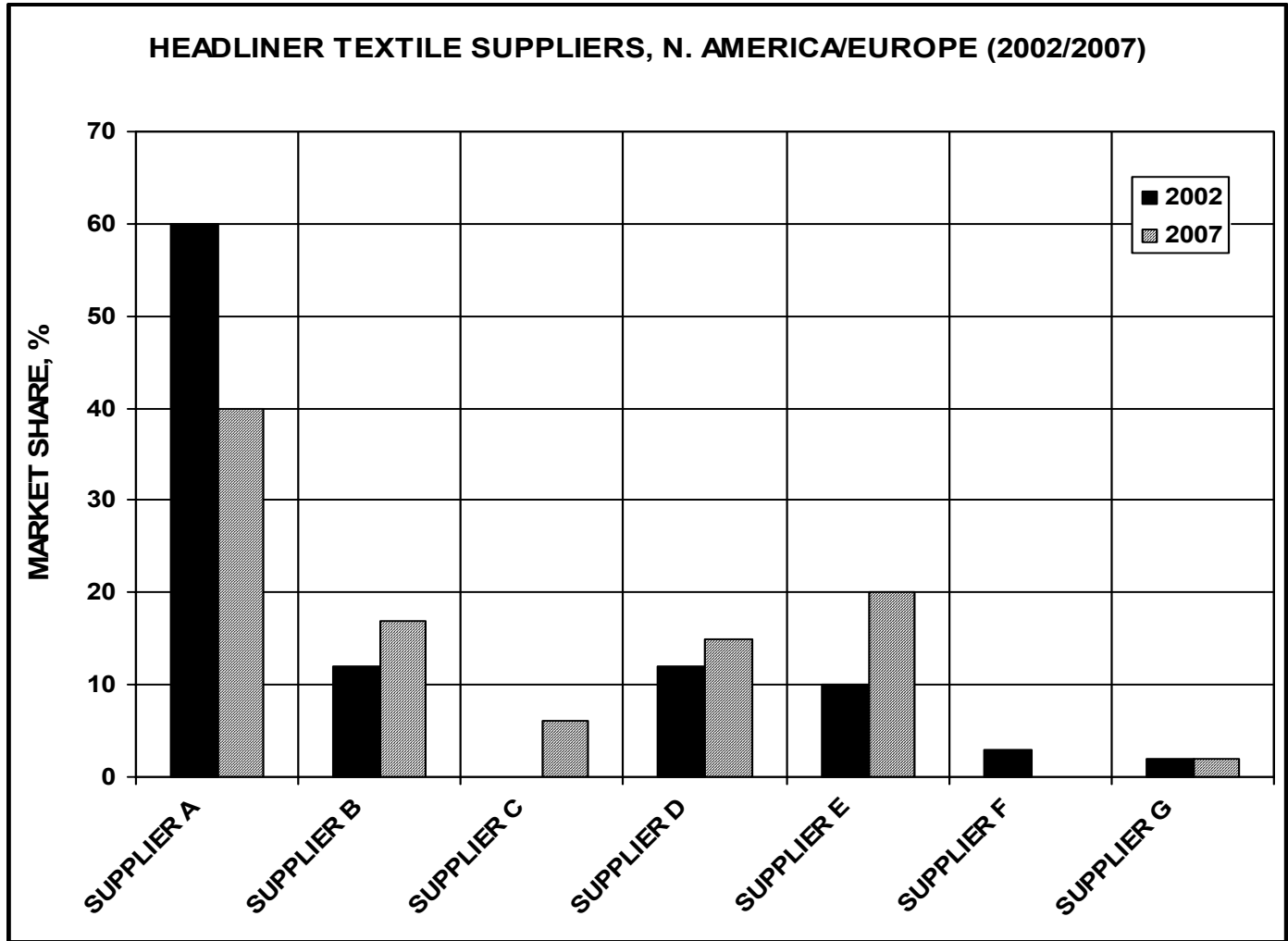
Aug. 2003

CONSULTANTS TO THE PLASTICS AND RUBBER INDUSTRIES

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EXAMPLES OF MULTICLIENT EXHIBITS



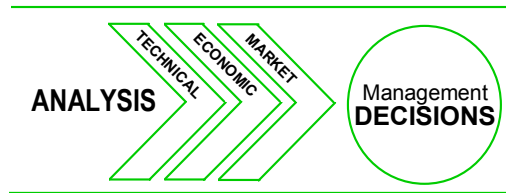
INTERIOR SKIN AND COATED FABRIC SUPPLIERS (EXAMPLES ONLY)

SHEET SUPPLIER	SECTOR				NOTE
	IP	DT	SEAT	FLOOR	
CGT	X	X	X		
DELPHI	X	X			FIRST NA COMMERCIAL TPO SKIN
HAARTZ	X	X	X		EXTRUDED ONLY
BENECKE	X	X		X	ALSO SLUSH, HIGH EUROPEAN MKT. SHARE
POLYONE	X	X			FORMERLY O'SULLIVAN, ALSO SLUSH
SANDUSKY ^(A)	X	X	X		PARTIAL OWNERSHIP BY BENECKE/KYOWA
PENNEL	X	X	X	X	
RECTICEL	X	X			PU SPRAY

^(A) INCLUDES ATHOL

EPP BEAD FOAM PRODUCER INDUSTRY STRUCTURE (EXAMPLES ONLY)

EPP BEAD SUPPLIER	BEAD SUPPLY	MFR. PARTS	SELL PARTS	AREA				NOTE
				US	EUR	JPN	LA	
BASF	X			X	X	X	X	NEW PLANT IN BRAZIL
KANEKA	X	(A)	X	X	X	X		^(A) USE IN-HOUSE AND CONTRACT MOLDERS
JSPI	X	X	X	X	X	X		PLANT IN FRANCE
FAGERDALA	X	X	X	X	X			
BASELL	X				X			



Automotive Interior Soft Trim:

Skins, Foams, Coated Fabrics, Textiles, and Acoustic Barriers

Robert Eller Associates, Inc. (REA) is pleased to present, for your consideration, this prospectus for an analysis of automotive soft trim and its role in interior module technology, economics, and markets in Europe and North America.

BACKGROUND

Soft trim materials present the interior module to the automotive customer. They play a key role in determining the choice of module manufacturing technology and associated costs. The range of potential soft trim candidates has broadened in response to new driving forces including acoustic performance, occupant protection (energy absorption), PVC substitution mandates, ELV legislation, telematics integration, and shifting esthetic requirements as illustrated by our prospectus cover logo.

Intense OEM pressure has driven down module prices, while materials prices have increased along with quality, efficient interior packaging, and craftsmanship constraints. Cost reductions will be made in module manufacturing with technologies capable of integrating soft trim materials, foams, and the acoustic function into a simplified process flow and mono-materials construction (where feasible).

New raw materials and combinations are emerging to challenge the dominant incumbent soft trim choices. These include, for example:

- Textile/polyolefin foam laminates
- Coated fabrics with non-PVC alternatives (styrenic, olefinic)
- Acoustic constructions based on polyurethanes and polyolefins capable of meeting new tuning and cost requirements
- New slush molded and thermoformed skin candidates (TPU, TPO)
- New foams with energy absorbing, acoustic, and fabrication process benefits
- Microfiber nonwoven technologies

At the same time as these materials and fabrication process technology changes are occurring, the automotive interior module supply chain in Europe and N. America is undergoing rapid structural change, globalization, and intense consolidation which will affect supplier/customer relationships, paths to market, and material selection criteria.

STUDY OBJECTIVES

The overall objectives of the REA multiclient study are to characterize and quantify the current and potential future global automotive interior soft trim and module sector with respect to:

- The impact of economic pressures on interior soft trim module technology
- Intermaterials competition and demand evolution
- Impact of new textile, foam, and plastics materials and process technology
- Fabrication processes and intermaterials competition for underlying substrates as they affect soft trim material selection parameters
- Manufacturing economics for components and finished modules
- Effects of structural changes in interior module supply chain
- The study updates and extends REA's widely subscribed 1998 Automotive Interior Skins and Foams multiclient study.

SCOPE

Regional Coverage: Europe and North America.

Market Definition: REA has developed demand forecasts for interior soft trim materials and processes used to fabricate modules in the target regions. Fleet share and demand estimates by material type, material and module supplier, and fabrication process are quantified. Constructions and supplier/customer relationships are compared for key models in each fleet for each module.

Interior Components: The interior modules evaluated include:

- Door Trim
- Cockpit
- Headliners
- Seating
- Floor/Acoustic Systems

Soft Trim Types: The soft trim materials evaluated include:

- Skins (slush molded, vacuum formed, RIM, sprayed PU)
- Coated Fabrics
- Textiles (woven/knit, nonwoven)
- Foams (sheet, bead, poured)
- Acoustic Barriers and Constructions

Industry Structure: Supplier shares of the soft trim materials markets and their key customer relationships are identified and quantified. Major suppliers, their product lines, new materials and processes, and supplier/customer relationships are described in 100 company profiles.

Constructions: Current and potential soft trim structures and their associated foam layers (integral, laminated, back foamed) are shown in schematic diagrams. Esthetic design considerations and their effects on material selection are also analyzed.

Module Fabrication Processes: Fabrication processes (e.g., low pressure molding, RIM, bead foam molding, natural fiber composites) for soft trim modules are described and their costs quantified for current and potential future technologies.

Driving Forces for Material Substitution: A broadened range of forces is driving material substitution and creating opportunities for new materials and processes. The requirements illustrated by the design on the cover of this prospectus have been examined for their impact on materials selection, manufacturing process evolution, module construction, and economics.

Skins: The materials and process technology options for producing skins have evolved since the pioneering 1998 REA multiclient analysis. The new technologies (TPO slush, vacuum formed TPO, spray, RIM) are documented. Commercial status, suppliers, constructions, and the implications for module economics and technology have been quantified.

Textiles: Changes in performance requirements (acoustic performance, recyclability, monomaterials construction) and the need to offer cost effective module constructions are driving changes in textile usage. The textile industry is responding with new nonwoven technology (e.g., micro-denier nonwovens) and new textile/polyolefin foam lamination constructions.

Coated Fabrics: PVC is currently the dominant incumbent in coated fabrics used in seat and other interior modules. TPOs are starting to penetrate this sizable auto interior materials segment.

Foams: All foam types (poured, sheet, and bead foams) as they participate in passenger safety, semi-structural composites, textile laminates, and esthetics are included. The intermaterials competition, role in module manufacturing costs, implications for soft trim material selection, and integration into module construction are examined.

Acoustics: Acoustic performance is becoming a driver for soft trim material selection. Acoustic solutions were previously an afterthought, designed to "fix" problems. Acoustic materials will be incorporated into design and process selection to fabricate cost-effective modules with on-board acoustics. The intense competition between new lightweight fibers, foams, and current regenerated fiber batting are examined.

Economics of Intermaterial and Interprocess Competition: System economics will ultimately determine material and process selection. REA has developed manufacturing cost cases to quantify systems manufacturing costs for key modules. These cost cases are suitable for the quantification of strategy, product positioning, and merger/acquisition analysis.

Time Horizon: Quantitative forecasts and analyses are developed for 2002 through 2007.

New Soft Trim Technology: Driven in part by cost pressures, materials and process technologies for skins, foams, coated fabrics, textiles, and acoustic materials are changing. The new technologies are identified and their implications for module construction, process technology, and manufacturing economics are quantified.

REA QUALIFICATIONS

REA is a strategic, technology, and market consulting resource specializing in providing decision-quality analysis in support of management decisionmaking in the global autoplastics sector from offices in the U.S. and Europe.

REA has carried out pioneering technical, economic, and market multiclient and single client studies of all major autoplastic components including instrument panels, headliners, door trim panels, interior trim, seating, skins, electrical components, acoustic barriers, structural components, weather stripping, bumper fascia, and exterior trim. Recent strategy, market, technology, and acquisition studies have included:

- European instrument panels/cockpits photo/supplier database (multiclient study 2000, 2001, 2002)
- TPEs in automotive applications (multiclient study -- 2000)
- Automotive polypropylene resins and compounds in the U.S. and Europe
- Supplier industry structure and globalization implications on autoplastics
- Serving as adviser for several major acquisition analyses in the interior Tier 1 sectors in the U.S. and Europe.

The study was directed by Robert Eller working in close coordination with REA associates in the U.S. and Europe. In addition to directing the consulting activities of REA, Mr. Eller currently serves as Contributing Editor (Plastics) for *Automotive and Transportation Interiors* magazine. Prior to establishing REA, he directed plastics consulting studies at Arthur D. Little, Inc. in the U.S. and Europe. REA organized a conference on automotive interiors in conjunction with *European Plastics News* on October 8/9, 2003.

WHO SHOULD SUBSCRIBE

As with all REA studies, this report provides *analysis* in support of management decisionmaking. It is designed to provide a planning resource for:

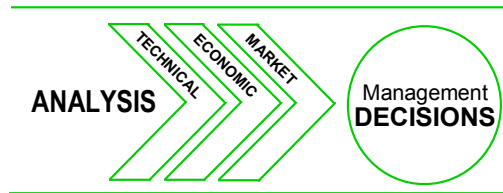
- Automotive interior module suppliers
- Skins and coated fabric suppliers
- Textile suppliers (woven/knit, nonwoven)
- Sheet and bead foam producers
- Coating (soft touch and protective) and adhesive suppliers
- Raw materials suppliers (skin, foam, substrate, acoustic barriers, textiles)
- Automotive manufacturers (OEMs)
- Compounders
- Interior designers

HOW TO SUBSCRIBE

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This signed order form constitutes an agreement to subscribe to this multiclient study. Mail, fax, or e-mail the completed order form, and enclose your payment or billing instructions. The order form may be downloaded from the REA Home Page. Please contact REA for more information on study contents, scope, and approach.

The price of the study is US\$15,000. The subscription includes three (3) copies of the final report. Additional copies of the report are available to subscribers for US\$400 each. The study is available on compact disc at a slight additional charge to cover CD preparation costs.

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