

*Technical, Economic, Market Analysis in
Support of Management Decisionmaking*

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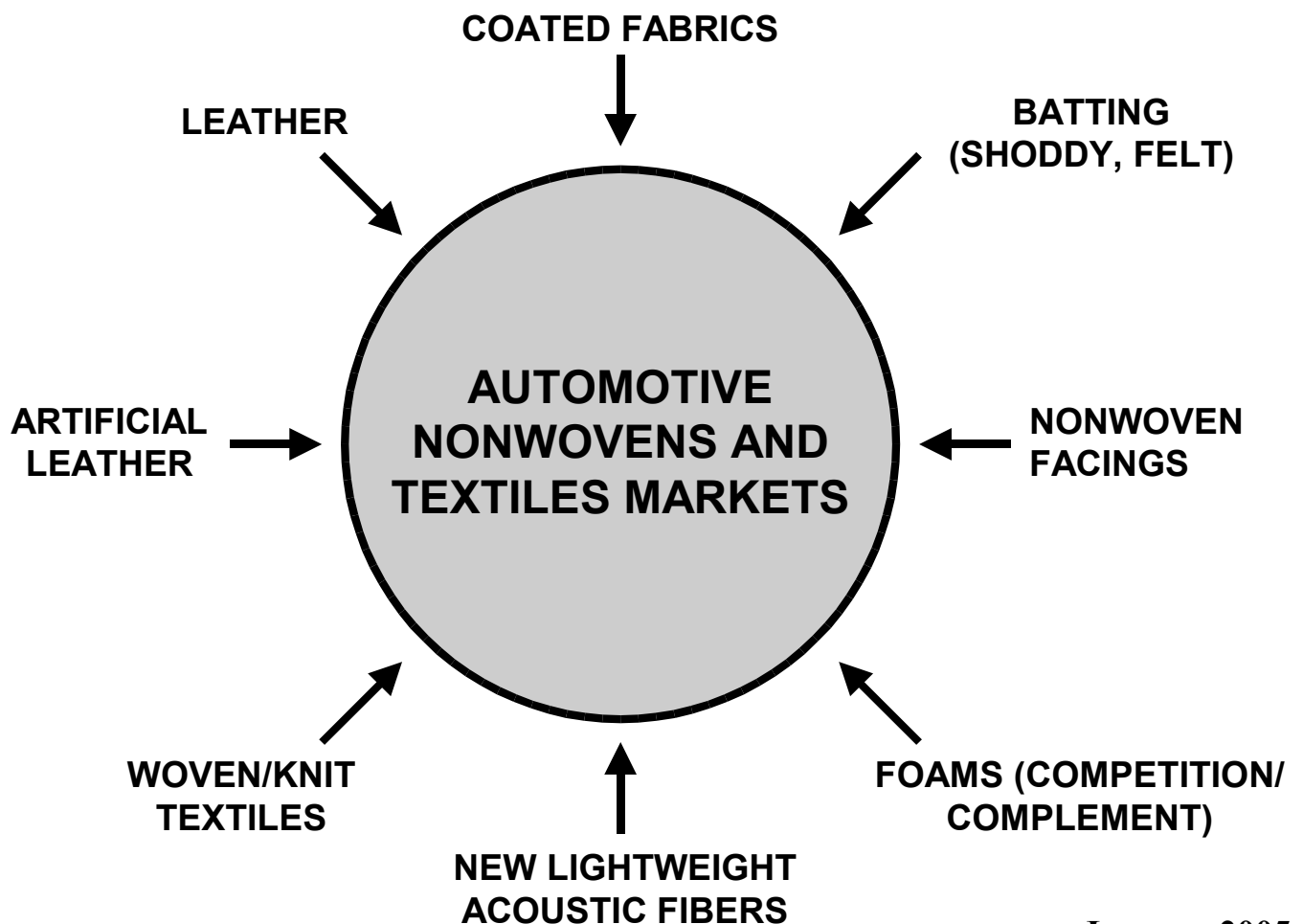
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**Prospectus for a Multiclient Study
Completed December 2004**

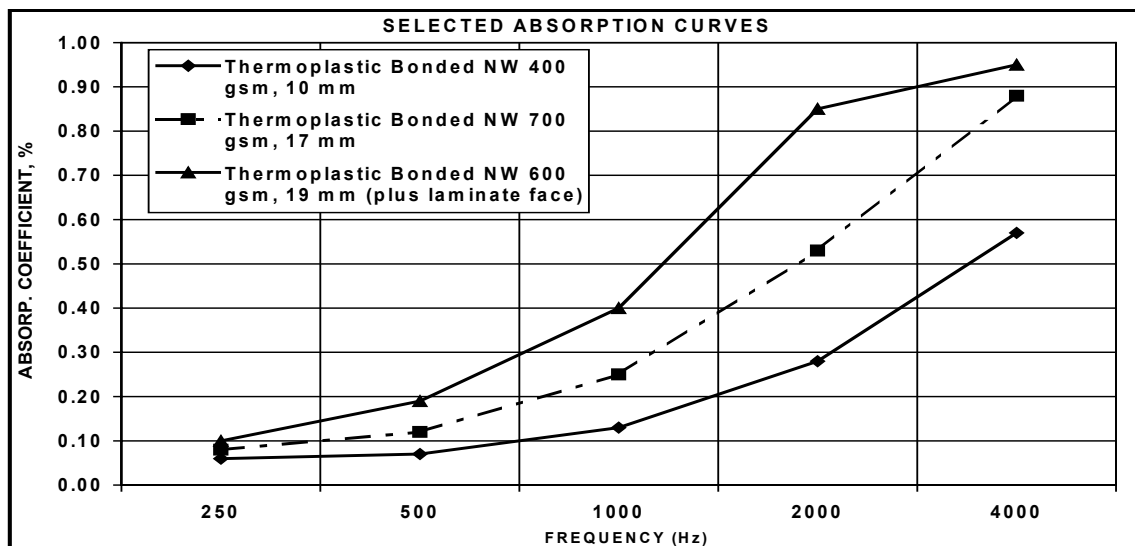
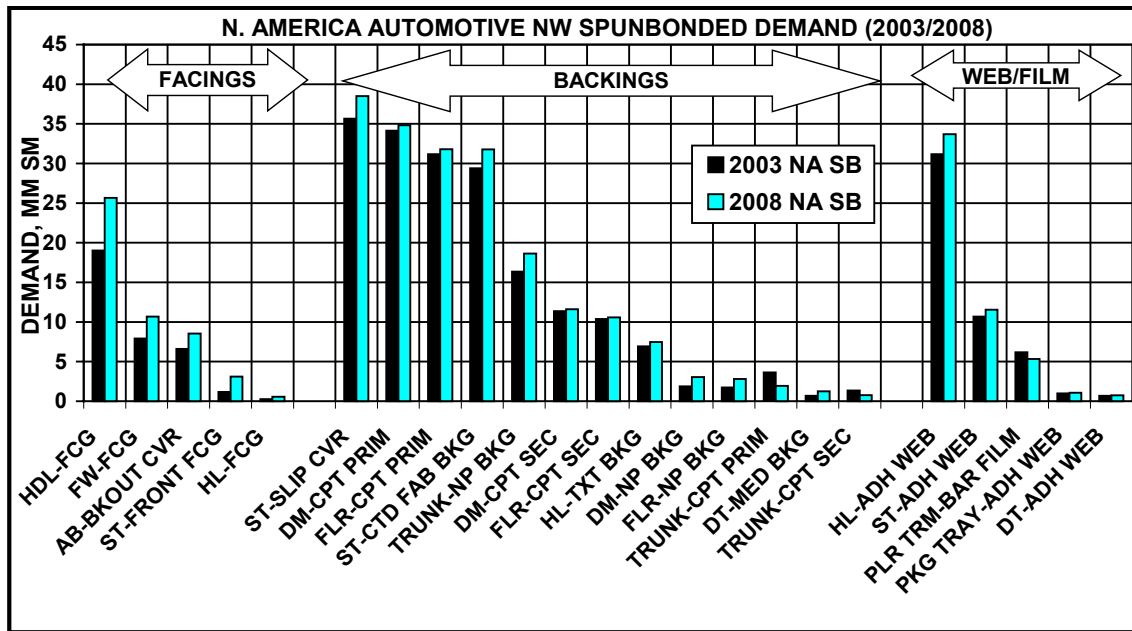
**Opportunities for Advanced Technology
Nonwovens for Automotive Surface and Construction
Applications in N. America and Europe**



January 2005

N. AMERICA/EUROPE AUTOMOTIVE NONWOVEN NEEDLEPUNCHED DEMAND (2003/2008)

MODULE	APPLICATION	N. AMERICA		EUROPE	
		MM SM, 2003	MM SM, 2008	MM SM, 2003	MM SM, 2008
NEEDLEPUNCHED CARPET					
TRUNK	NEEDLEPUNCHED CARPET	--	--	--	--
DASH MAT	NEEDLEPUNCHED CARPET	--	--	--	--
FLOOR	NEEDLEPUNCHED CARPET	--	--	--	--
FACINGS					
SEATING	CUSHION LINER/J-HOOK/MAP POCKET	--	--	--	--
HEADLINER	FACING	--	--	--	--
PACKAGE TRAY	FACING	--	--	--	--
SEATING	SEAT BACK/SIDE FACE	--	--	--	--
DOOR TRIM	KICK PANEL	--	--	--	--
WHEEL ARCH LINER	FACE	--	--	--	--
PILLAR TRIM	FACING	--	--	--	--
DOOR TRIM	MEDALLION FACE FABRIC	--	--	--	--
CORE/ACOUSTIC LAYER					
HEADLINER	CORE	--	--	--	--
PACKAGE TRAY	SEMI-STRUC.	--	--	--	--
WHEEL ARCH LINER	SEMI-STRUC.	--	--	--	--
TRUNK	ACOU/ABSORPTION	--	--	--	--
FLOOR	ACOU/ABSORPTION	--	--	--	--
DASH MAT	ACOU/ABSORPTION	--	--	--	--
DASH MAT	FIRE WALL - CORE	--	--	--	--
HOODLINER	CORE	--	--	--	--
TOTAL		--	--	--	--



I. Introduction

This prospectus outlines a multi-sponsored study which identifies, analyzes, and quantifies opportunities for advanced technology nonwovens in automotive surface and construction applications in N. America and Europe. The study includes assessments and quantification of:

- Technologies and manufacturing costs for applicable advanced nonwovens
- Technologies and costs for fabricating interior modules containing advanced nonwovens
- The intermaterials competition facing advanced nonwovens
- Value addition opportunities for nonwoven producers
- Demand for advanced nonwovens by module in N. America and Europe over the next 5-7 years
- Likely changes in the value chain and industry structure shifts to accommodate evolving auto industry pricing, performance, and design pressures.

The study characterizes the value chain from raw material through nonwoven face fabrics, construction fabrics, and semi-structural composites and from cut/sew operations to fabricated interior modules. It also provides profiles of key nonwoven producers and module fabricators in N. America and Europe.

II. Technology Assessment

A. Nonwovens

Technologies for producing advanced nonwovens are evolving rapidly. Currently, advanced nonwovens with superior attributes are produced using direct polymer-to-fabric methods such as spunmelt, and by staple processes including needlepunched, hydroentanglement, and other methods. Improved attributes include tactile properties, conformability, durability, controlled porosity, acoustic/thermal insulation, printability, embossability, dyeability, and craftsmanship. These nonwovens are produced with both conventional denier and micro-denier fibers. The new nonwovens are finding many uses in automotive surface, construction, and semi-structural applications in the interior and underhood.

The study also assesses the technologies used for producing advanced nonwovens. The scope of the nonwovens technology assessment portion of the proposed analysis includes:

- Methods used to spin the relevant staple fibers (including several types of micro-denier)
- Methods used to make advanced spunmelt nonwovens
- Methods used to treat/consolidate both staple and direct spun advanced technology nonwovens including hydroentangled, needlepunched, and other methods
- Manufacturing cost estimates, current and expected in the future, for the key advanced technology nonwovens
- Reviews of the technology positions of the key fiber and nonwovens manufacturers
- Reviews of the key patent positions.

The study's technology assessment is based on our background, patent literature, and technical/commercial sources. In addition, in a field research program staffed by John R. Starr, Inc. and Robert Eller Associates, Inc. we have interviewed key fiber, fabric, process equipment, finished/converted products producers, Tier 1s, and OEMs. The study is concerned with only non-proprietary information. (Process flow charts for key advanced nonwovens processes and pro-forma manufacturing costs for the most important advanced nonwoven types are included.) These pro-forma cost estimates are based on economic sized plants for each of the important nonwovens. Manufacturing cost estimates including raw materials, other variable costs, fixed costs, mill costs, and full cost plus return (including SG&A and ROI) are included. All assumptions behind each pro-forma cost estimate are clearly stated, including assumed throughput per line, raw materials charges, yield, efficiencies/uptime, fixed and working capital investment. These analyses provide benchmark estimates of the current and likely future costs for advanced automotive nonwovens as a basis for predicting commercial market penetration rates.

The study assesses performance attributes of the advanced nonwovens based on available physical property data. Overall cost/performance assessments for the key advanced nonwoven types are compared with the cost/performance of traditional nonwovens and other surface and construction incumbents and challengers for automotive surface and construction applications.

The study evaluates the technology positions of key producers of advanced nonwovens. The relevant patents and patent positions of key producers are reviewed.

B. Module Fabrication Technologies and Economics

The value chain from raw material to fabricated module is shifting in response to economic and competitive pressures. The study examines the interaction between advanced nonwovens and module manufacturing technologies to characterize how they are likely to participate in the expected value chain shift. The module manufacturing technology analysis reflects our assessment of the likely response to current and future economic requirements. The module process and materials technology analyses are based on Robert Eller Associates' recently completed Automotive Interior Soft Trim Multi-client Study.

III. Market Assessment – North America and Europe

A. Quantification of Materials Currently Used in Automotive Interior Surface and Construction Applications

The study estimates the current and forecast future (2008) consumption of wovens, knits, and nonwovens in each significant automotive surface and construction application, by module, in N. America and Europe. Estimates include the following modules:

- Seating
- Floor/Acoustics
- Trunkliner
- Headliner
- Hoodliner
- Door Trim
- Dash Mat
- Wheel Arch Liner (a new nonwovens target)
- Package Tray
- Pillar Trim

These estimates provide subscribers with an interactive, quantitative database on materials currently used in automotive interior surface and construction applications, as well as expectations for the future. The study identifies key forces driving substitution of advanced nonwovens and assesses their impact on module materials/process technology. We have also identified and illustrated module constructions used in N. America and Europe.

B. Value-added Opportunities for Nonwoven Manufacturers

The study identifies and quantifies opportunities for adding value via the use of advanced nonwovens. This task is based on module manufacturing cost models and our assessment of the competitive interface between nonwovens and competitive surface and construction materials (see study logo).

IV. Competitor Assessment

Profiles for key producers of advanced nonwovens and Tier 1 interior module suppliers are included. These profiles summarize each competitor's technology/cost, market, and competitive position. The profiles also include assessments of the strengths/weaknesses and future outlook for each supplier in the target modules in N. America and Europe.

V. Insight and Perspective for Business Strategy Decisions

This multi-sponsored study is an important strategic tool for subscribers. Companies that are competing in the nonwoven automotive interior surface and construction market will gain valuable information and tools necessary to understand the demands and direction of relevant applications and technologies. In addition, the study provides current market participants with information and analysis essential for successful expansion into new segments and for developing and commercializing new products that can meet unmet market needs.

VI. Timing and Costs

Subscribers will receive two paper copies and one CD of the study, which was completed in December 2004. The subscriber fee is US \$10,000. Upon receipt of the subscription form (attached), we will ship the report and submit an invoice payable upon receipt in U.S. dollars. For an additional fee based on the amount of professional time and travel expenses involved, we will arrange a personal follow-up meeting to discuss the study's conclusions and implications for subscribers.

VII. General Provisions

Sponsorship is on a non-exclusive and best-efforts basis. All information and analysis within the scope of this study, except proprietary information provided by industry sources and clients of Robert Eller Associates, Inc. and John R. Starr, Inc., is made available to subscribers. The results obtained and any other recommendations are our best judgment based on the information available to us. Our liability, if any, shall not be greater than the amount due us for services rendered. John R. Starr, Inc. and Robert Eller Associates, Inc. have extensive experience and have carried out considerable management and technical consulting in the fields covered in this prospectus, and expect to carry out similar work in the future.

Each subscriber agrees not to circulate the final report of the study outside his/her organization, except to subsidiaries with at least 51% control. The final report becomes the subscriber's property, and no restrictions are placed on its use within his/her organization. Reproduction of the report in whole or in part for use outside the subscriber's company or subsidiaries requires prior written approval by Robert Eller Associates, Inc. and John R. Starr, Inc. Neither party will use the name of the other for advertising or promotional purposes without prior written permission.

VIII. Acceptance

To subscribe to this study, please sign and return one copy of this agreement (or fax a copy to 330-670-9844 or 239-430-1989).

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This signed order form constitutes an agreement to subscribe to the multiclient study. Mail, fax, or e-mail the completed order form to the author companies, and enclose your payment or billing instructions.

The price of the study for initial subscribers is US \$10,000. The subscription includes two (2) copies of the final report and one (1) CD. Additional copies of the report are available to subscribers for US \$100 each plus shipping costs.

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