

THE CONTINUING GROWTH STORY OF NONWOVEN WIPES

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INSIGHT 2004

John R. Starr, Inc.

**Resources for Decisions
Nonwovens, Hygiene Absorbent Products
& Key Raw Materials**

JOHN R. STARR, INC.

- ◆ **Management consulting firm**
- ◆ **Specialists in nonwoven product applications worldwide**
- ◆ **Confidential client engagements**
- ◆ **Multi-client market and technology reports**

OVERVIEW OF THE NONWOVEN WIPES MARKET

- ◆ **Wipes are the fastest growing major market for nonwovens.**
- ◆ **North America and Europe account for over three-quarters of the global consumption of nonwoven wipes.**

OVERVIEW OF THE NONWOVEN WIPES – CONSUMER RETAIL MARKETS

- ◆ **New personal care and household cleaning wipes continue to be introduced.**
- ◆ **Global brand leaders have educated consumers on new wiping habits for time-saving convenience and specialized performance.**
- ◆ **Consumers have confirmed value of most new wipe applications.**

OVERVIEW OF THE NONWOVEN WIPES – RETAIL CONSUMER MARKETS

- ◆ **The private label segments of the baby wipe markets in Europe and North America have been well established for many years.**
- ◆ **Major retailers have added store brand imitations of leading personal care and household cleaning wipes.**

OVERVIEW OF NONWOVEN WIPES - INDUSTRIAL & INSTITUTIONAL MARKETS

- ◆ **Task-focused, engineered wipes made from advanced technology nonwovens continue to gain share versus textiles in:**
 - **cleanroom applications**
 - **surface preparation**
 - **food service**
 - **industrial clean-up**
 - **printing**
 - **healthcare markets**

IMPORTANCE OF WIPES MARKET TO NONWOVEN MANUFACTURERS

- ◆ **All leading nonwoven manufacturers participate in the wipes market.**
- ◆ **Many nonwovens producers have prioritized development efforts and capital investments to pursue wipes market opportunities.**
- ◆ **Certain nonwoven companies have integrated forward into converting and/or marketing wipes.**

SIZE OF NONWOVEN WIPE MARKETS IN EUROPE & NORTH AMERICA

- ◆ **End user sales of nonwoven wipes exceeded \$8 billion in Europe and North America.**
- ◆ **Nonwoven roll goods sales for wipes in these regions exceeded \$1 billion.**

GROWTH OUTLOOK IN THE NONWOVEN WIPES MARKET – EUROPE & NORTH AMERICA

- **Baby wipes are the largest wipes category.**
 - **Well penetrated market**
 - **Modest growth at 2 – 2.5% annually.**
- **Personal care and household cleaning wipes have the highest growth outlook at 6 – 7% per year.**

PERSONAL CARE WIPES SEGMENT

◆ Includes wipes for:

- **Toileting and intimate cleansing**
- **Hand**
- **Body**
- **Facial care**

HOUSEHOLD CLEANING WIPES SEGMENT

◆ Includes wipes for:

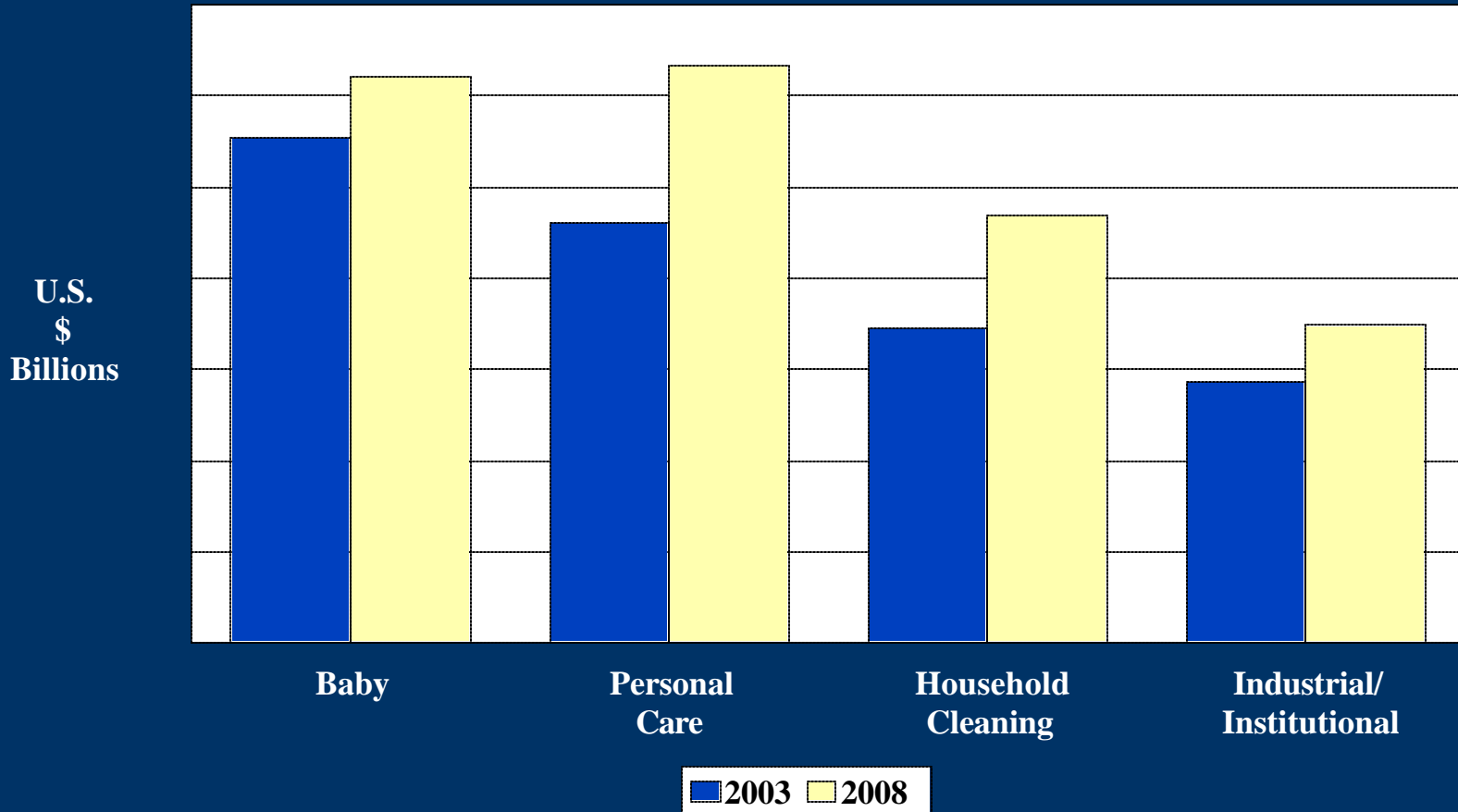
- Pre-moistened wipes – general purpose and specialized applications
- Wet floor cloths and mop pads
- Dry wipes, dusters and dry floor sweeper cloths
- Dishwashing wipes
- Apparel fabric care wipes
- Auto care wipes

GROWTH OUTLOOK IN THE NONWOVEN WIPES MARKET – EUROPE & NORTH AMERICA

- **Industrial and institutional wipes will grow at 3 – 5% per year.**
- **Specialized industrial applications are increasing more than 5% per year.**
 - **Surface preparation wipes**
 - **Cleanroom wipes**

OUTLOOK FOR END USER SALES OF NONWOVEN WIPES IN NORTH AMERICA AND EUROPE

(Billions of U.S. Dollar Equivalent)



Average Annual Growth

Rates 2003 - 2008

2 - 2.5%

6 - 7%

6 - 7%

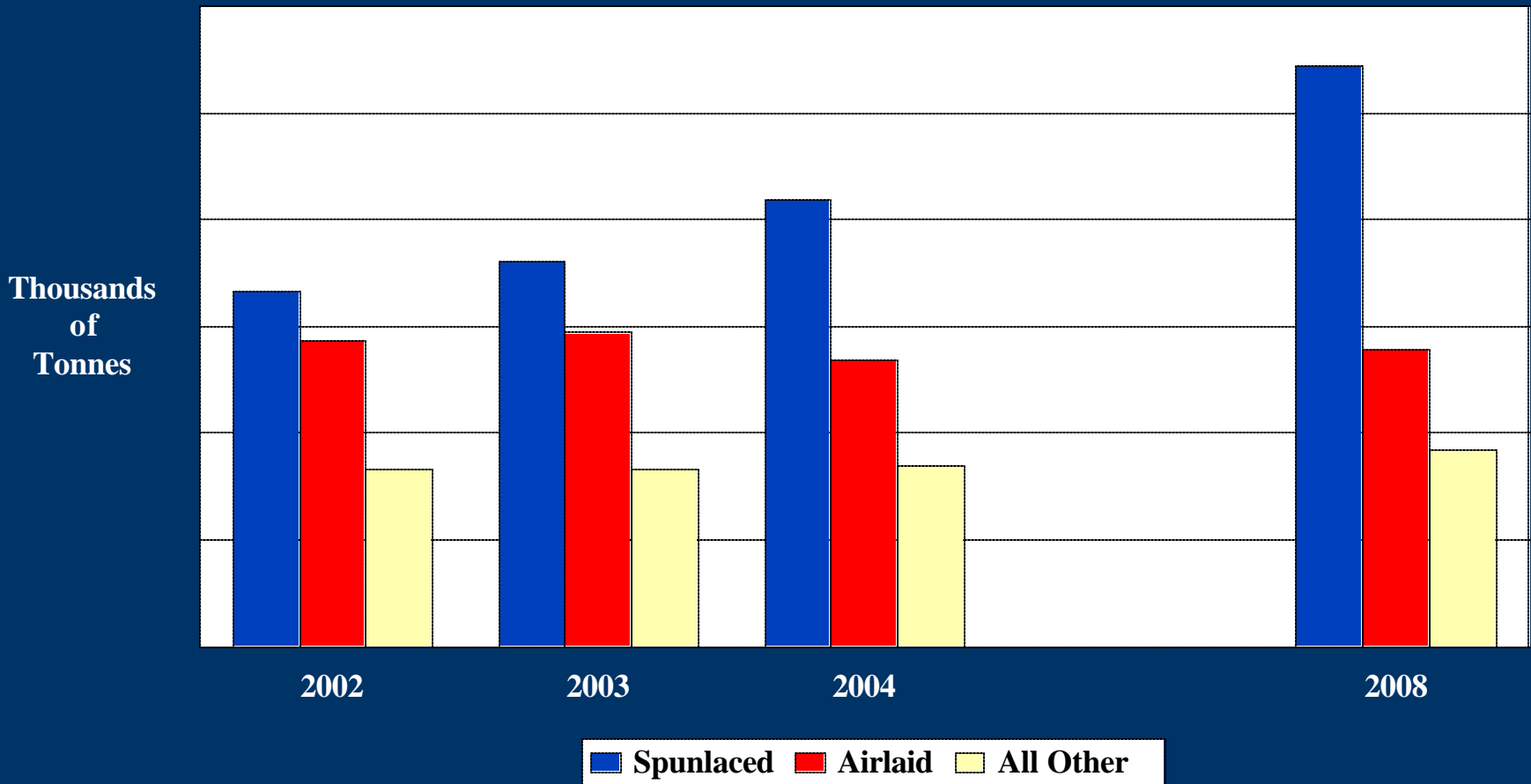
3 - 5%

NONWOVEN TECHNOLOGY OUTLOOK

- ◆ **Nonwoven substrate demand for wipes used in Europe and North America is currently around 7 billion square meters.**
- ◆ **Growth rates by technology range widely from -1.5% to +8.4% per year from 2003 to 2008.**

OUTLOOK FOR EUROPEAN AND NORTH AMERICAN NONWOVEN WIPES CONSUMPTION BY TECHNOLOGY - TONNAGE VOLUME

(Thousands of Tonnes)



SPUNLACED OUTLOOK IN WIPES

- ◆ **Greatest wipes demand for spunlaced**
 - **Substituting for traditional airlaid in North American baby wipes**
 - **Leading substrate for high growth personal care and household cleaning wipes**

SPUNLACED OUTLOOK IN WIPES

- ◆ **Spunlaced nonwovens are half of the total tonnage used in nonwoven wipes in these two regions.**
- ◆ **All-staple spunlaced nonwovens are the dominant substrates used in the cosmetic and facial cleaning segments of the personal care wipes category.**

SPUNLACED OUTLOOK IN WIPES

- **During the next five years, we expect greater emphasis on differentiated wipes substrates.**

SPUNLACED OUTLOOK IN WIPES

- ◆ Pulp-containing spunlaced fabrics, especially Ahlstrom's *Hydraspun*, have gained strong positions with leading household cleaning wet wipes brands.
- ◆ Price competition is intensifying in the household cleaning wipes segments so nonwovens need to be economical.

AIRLAID OUTLOOK IN WIPES

- ◆ Demand for conventional latex bonded airlaid nonwovens for wipes is declining.
- ◆ State-of-the-art airlaid composites or dispersible airlaid fabrics that provide added functionality are continuing to grow in wipes.

AIRLAID OUTLOOK IN WIPES

- ◆ **Flushable wipes for intimate cleansing require flushable airlaid or flushable wet laid substrates.**
- ◆ **Demand will increase for truly dispersible nonwovens for flushable wipes.**

DRIVING FORCES FOR GROWTH

- ◆ **Nonwoven wipes achieve success with end users when they are:**
 - **Effective for the job (required wiping performance)**
 - **Time-saving and easy (even fun) to use**
 - **Affordable**

DRIVING FORCES FOR GROWTH

- ◆ **Keys to success for disposable wipes:**
 - **Functionality**
 - **Convenience**
 - **Value**

STRATEGIES FOR WIPE CONVERTERS

- ◆ **Keys to success for independent wipe converters:**
 - **Broad capabilities for wipe put-ups and packaging**
 - **Low cost**
 - **Consistent quality (especially contamination control)**

STRATEGIES FOR WIPE CONVERTERS

(Continued)

- **Product development support (for formulation compositions, nonwoven substrate selection, product put-up options and packaging designs)**
- **Rapid production turnaround**
- **Timely product delivery**

NONWOVEN STRATEGIES FOR WIPES

- ◆ **As wipe markets mature, competition among wipe marketers will intensify. Product differentiation will be increasingly important.**
- ◆ **Nonwovens can provide end user perceived differentiation to wipes.**
- ◆ **Key strategy: Nonwoven differentiation which enhances wipe functionality.**

EXAMPLES OF WIPES WITH DIFFERENTIATED NONWOVENS

- ◆ ***SWIFFER*** with “*Deep Ridges for Better Cleaning*”
- ◆ ***CLOROX READYMOP*** is “*Now Quilted – Cleans Better*”.
- ◆ ***ORAL-B BRUSH-UPS*** with stretchable nonwovens to slip on a finger

ADVANCED NONWOVENS ARE KEY FOR DIFFERENTIATED WIPES

- ◆ **As nonwoven manufacturers expand capacity and develop new wipe substrates, advanced nonwovens will become available to enhance wipe differentiation and stimulate demand in this creative product category.**

NEW JOHN R. STARR, INC. REPORTS

- ◆ ***The Evolving Nonwoven Wipes Business in North America and Europe***
 - ***Market Outlook from 2002 to 2008***

Published May 2004

NEW JOHN R. STARR, INC. REPORTS

- ◆ ***Recent Developments in Global Markets for Hygiene Absorbent Products***
 - ***A periodic *Market Developments Advisory* publication that reports new product and technology developments in the absorbent products and related materials industry and current economic indicators.***

NEW JOHN R. STARR, INC. STUDIES

- ◆ ***Adult Incontinence Market Opportunity – North American and Western European Outlook 2003 to 2008***
 - Joint study of John R. Starr, Inc., USA, and Engqvist Consulting, Switzerland, October 2004

- ◆ ***Updated Global Hygiene Absorbent Products Market Data 2003 – 2008***
 - coming November 2004