INDUSTRY MARKET RESEARCH FOR BUSINESS LEADERS, STRATEGISTS, DECISION MAKERS

CLICK TO VIEW

Table of Contents **2**

List of Tables & Charts **3**

Study Overview **4**

Sample Text, Table & Chart **5**

Sample Profile, Table & Forecast **6**

Order Form **7**

About Freedonia, Custom Research, Related Studies, Corporate Use License **8**

photo courtesy of ExxonMobil Chemical

Nonwovens

US Industry Study with Forecasts for **2011 & 2016**

Study #2271 | November 2007 | $4600 | 362 pages

The Freedonia Group

767 Beta Drive

Cleveland, OH • 44143-2326 • USA

Toll Free US Tel: 800.927.5900 or +1 440.684.9600

Fax: +1 440.646.0484

E-mail: info@freedoniagroup.com

www.freedoniagroup.com

Nonwovens

US Industry Study with Forecasts for ***2011 & 2016***

Freedonia®

Table of Contents

EXECUTIVE SUMMARY

MARKET ENVIRONMENT
General 4
Macroeconomic Environment 4
Manufacturing Outlook 9
Demographic Trends 12
Household Trends 15
Retail Sales 17
Textiles Outlook 20
Competitive Materials 23
Environmental & Regulatory Considerations. 25
Pricing Trends 27
World Market 30
Western Europe 32
Asia/Pacific 33
Other Regions 35
Foreign Trade 37
Exports 40
Imports 42

MATERIALS
General 45
Fibers 45
Polypropylene 48
Polyester 50
Wood Pulp 53
Rayon 54
Polyethylene 57
Cotton 58
Other 61
Glass 61
Nylon 63
All Other 64
Other Materials 65
Binder Resins 66
Additives 68

PRODUCTS
General 71
Demand by Process 73
Spunbonded 77
Characteristics 78
Markets & Manufacturers 80
Carded 81
Characteristics 83
Markets & Manufacturers 85
Meltblown 87
Characteristics 89
Markets & Manufacturers 91
Wet Laid 92
Characteristics 93
Markets & Manufacturers 95
Air Laid 96
Characteristics 98
Markets & Manufacturers 100
Web Bonding Processes 102
Thermal 103
Heating Processes 103
Manufacturers 105
Chemical 105
Mechanical 107
Needlepunching 108
Spunlacing 109
Stitchbonding 111

MARKET OVERVIEW

DISPOSABLES MARKETS
General 117
Consumer 119
Personal Hygiene Products 120
Personal Hygiene Products Outlook 121
Nonwoven Fabric Demand 123
Infant Diapers & Training Pants 125
Feminine Hygiene Products 130
Adult Incontinence Products 132
Wipes 136
Consumer Wipes Outlook 136
Nonwoven Fabric Demand 138
Baby Wipes 140
Household Cleaning Wipes 142
Personal Care Wipes 144
Other Consumer Wipes 145
Other Consumer 146
Filtration 147
Filters Outlook 148
Nonwoven Fabric Demand 151
Air Filters 155
Fluid Filters 158
Medical 160
Nonwoven Medical Garments
& Textiles Outlook 161
Nonwoven Fabric Demand 163
Applications & Manufacturers 165
Types 167
Other 169
Industrial Wipes 170
Protective Apparel 172
All Other 174

NONDISPOSABLES MARKETS
General 176
Construction 178
Construction Outlook 178
Nonwoven Fabric Demand 182
Building Construction 183
Roofing 184
House Wrap 186
Geotextiles 188
Applications 190
Materials & Producers 191
Electrical & Electronics 192
Batteries Outlook 192
Nonwoven Fabric Demand 194
Battery Separators 196
Other 198
Furnishings 199
Furniture Outlook 200
Nonwoven Fabric Demand 202
Applications 204
Suppliers 206
Carpets & Rugs 207
Carpet & Rug Outlook 207
Nonwoven Fabric Demand 209
Applications 210
Materials & Manufacturers 211
Motor Vehicles 212
Motor Vehicles Outlook 212
Nonwoven Fabric Demand 214
Clothing 218
Apparel Industry Outlook 219
Nonwoven Fabric Demand 220
Apparel Interlinings 222
Other 223
Other Nondisposables 225
Coated & Laminated Substrates 226
Agriculture 228
Shoe Linings 229
All Other 230

INDUSTRY STRUCTURE
General 231
Industry Structure 232
Market Share 236
Kimberly-Clark 238
DuPont 238
Fiberweb 239
Polymer Group 240
Freudenberg 240
Johns Manville 241
Ahlstrom 241
Others 242
Integration 242
Competitive Strategies 244
Research & Development 246
Manufacturing 249
Distribution 250
Marketing 251
Acquisitions & Divestitures 254
Cooperative Agreements 257

Nonwovens

US Industry Study with Forecasts for ***2011 & 2016***

Table of Contents (continued)

COMPANY PROFILES

Acordis Industrial Nederland ... 263
Ahlstrom Corporation ... 264
American Felt & Filter ... 268
Andrew Industries ... 270
Avgol Industries ... 272
Barnhardt Manufacturing ... 273
Bauer Industries ... 275
BBA Aviation ... 276
Berkshire Hathaway ... 277
British Vita Group ... 281
Buckeye Technologies ... 282
Carpenter Company ... 284
Concert Industries ... 286
DuPont (EI) de Nemours ... 287
Emtex Incorporated ... 291
Fiberweb plc ... 293
Formed Fiber Technologies ... 298
Foss Manufacturing ... 300
Freudenberg & Company ... 303
G-I Holdings ... 308
Hollingsworth & Vose ... 310
Holm (Jacob) & Sons ... 314
Kimberly-Clark Corporation ... 316
Koch Industries ... 321
Lantor Advanced Materials ... 323
Low & Bonar ... 325
Lydall Incorporated ... 328
National Nonwovens ... 331
Owens Corning ... 333
Polymer Group ... 334
Precision Custom Coatings ... 338
Precision Fabrics Group ... 340
Propex Incorporated ... 342
Royal Ten Cate ... 345
Sabee (R.) Company ... 346
Tex Tech Industries ... 348
Textilgruppe Hof ... 349
US Nonwovens ... 351
Western Nonwovens ... 351
Other Companies Mentioned in Study ... 354

List of Tables/Charts

EXECUTIVE SUMMARY

1 Summary Table ... 3

MARKET ENVIRONMENT

1 Macroeconomic Indicators ... 8
2 Manufacturers' Shipments ... 12
3 Population Trends ... 15
4 Households & Housing Stock ... 17
5 Retail Sales ... 19
6 Textile Mill Product Shipments ... 22
7 Nonwovens Pricing ... 30
8 World Demand for Nonwovens ... 31
Cht World Nonwovens Demand by Region, 2006 ... 31
9 Foreign Trade in Nonwovens ... 40
Cht US Nonwovens Exports by Destination, 2006 ... 42
Cht US Nonwovens Imports by Source, 2006 ... 44

MATERIALS

1 Fiber Consumption in Nonwoven Fabrics ... 47
Cht Fiber Consumption in Nonwoven Fabrics, 2006 ... 48
2 Other Material Consumption in Nonwoven Fabrics ... 65

PRODUCTS

1 Nonwoven Fabric Demand by Web Formation Process ... 75
Cht Nonwoven Fabric Demand by Web Formation Process, 2006 ... 76
2 Spunbonded Nonwoven Fabric Demand ... 78
3 Carded Nonwoven Fabric Demand ... 83
4 Meltblown Nonwoven Fabric Demand ... 89
5 Wet Laid Nonwoven Fabric Demand ... 93
6 Air Laid Nonwoven Fabric Demand ... 98

MARKET OVERVIEW

1 Nonwoven Fabric Demand by Market ... 115
Cht Nonwoven Fabric Demand by Market, 1996-2016 ... 116
2 Growth Rates for Selected Nonwovens Markets, 2006-2011 ... 116

DISPOSABLES MARKETS

1 Disposables Markets for Nonwoven Fabrics ... 118
Cht Disposables Markets for Nonwoven Fabrics, 2006 ... 119
2 Consumer Demand for Nonwoven Fabrics ... 120
3 Personal Hygiene Product Demand ... 123
4 Personal Hygiene Product Demand for Nonwoven Fabrics ... 124
Cht Components of a Baby Diaper ... 126
5 Infant Diapers & Training Pants Demand for Nonwoven Fabrics ... 129
6 Feminine Hygiene Product Demand for Nonwoven Fabrics ... 132
7 Adult Incontinence Product Demand for Nonwoven Fabrics ... 135
8 Consumer Wipes Demand ... 137
9 Consumer Wipes Demand for Nonwoven Fabrics ... 140
10 Other Consumer Disposables Demand for Nonwoven Fabrics ... 147
11 Filter Supply & Demand ... 151
12 Filtration Demand for Nonwoven Fabrics ... 155
13 Air Filter Demand for Nonwoven Fabrics ... 158
14 Fluid Filter Demand for Nonwoven Fabrics ... 160
15 Nonwoven Disposable Medical Garments & Textiles Demand ... 163
16 Medical Demand for Nonwoven Fabrics ... 165
17 Other Disposables Markets for Nonwoven Fabrics ... 170

NONDISPOSABLES MARKETS

1 Nondisposables Markets for Nonwoven Fabrics ... 177
Cht Nondisposables Markets for for Nonwoven Fabrics, 2006 ... 178
2 Construction Expenditures ... 181
3 Construction Demand for Nonwoven Fabrics ... 182
4 Building Construction Demand for Nonwoven Fabrics ... 184
5 Geotextiles Demand for Nonwoven Fabrics ... 190
6 Battery Supply & Demand ... 194
7 Electrical & Electronics Demand for Nonwoven Fabrics ... 196
8 Furniture Supply & Demand ... 202
9 Furnishings Demand for Nonwoven Fabrics ... 204
10 Carpet & Rug Supply & Demand ... 209
11 Carpet & Rug Demand for Nonwoven Fabrics ... 210
12 Motor Vehicle Production ... 214
13 Motor Vehicle Demand for Nonwoven Fabrics ... 218
14 Apparel Shipments ... 220
15 Clothing Demand for Nonwoven Fabrics ... 222
16 Other Nondisposables Markets for Nonwoven Fabrics ... 226

INDUSTRY STRUCTURE

1 US Nonwoven Fabric Sales by Company, 2006 ... 235
Cht Nonwoven Fabric Market Share, 2006 ... 237
2 Selected Acquisitions & Divestitures ... 256
3 Selected Cooperative Agreements ... 259

Nonwovens

US Industry Study with Forecasts for ***2011 & 2016***

Demand in the filtration market will see the most rapid gains in US demand, as nonwoven filters continue to take market share from other materials such as paper and woven fabrics.

US demand to grow 4.5% annually through 2011

Demand for nonwoven roll goods is projected to increase 4.5 percent per year to $5.8 billion in 2011, driven by healthy gains in key markets such as filtration, construction and wipes. Further growth will derive from increased market penetration in many applications, including industrial wipes and roofing membranes, as new technologies improve the functionality of nonwovens.

Spunbonded nonwovens to remain dominant

Spunbonded nonwovens will remain the dominant product, accounting for roughly half of total volume in 2011, owing to their position as the material of choice in major markets such as baby diapers. Gains in spunbonded nonwovens will be driven by performance advantages, the development of new applications, and increasing demand for composite nonwovens featuring spunbonded webs. Carded and wet laid nonwovens are expected to see the slowest gains, although certain segments such as carded spunlaced nonwovens and wet laid glass fiber materials will have more favorable prospects.

Filtration to lead gains in disposables market

Among disposables markets, consumer products will continue to account for the largest portion of nonwovens sales, though growth will be restricted by below-average advances in baby diaper and feminine hygiene markets. Somewhat offsetting this sluggishness in the consumer market will be favorable gains in adult incontinence markets, primarily due to the aging US population. Demand in the filtration market will see the most rapid gains, as nonwovens continue to take market share from other materials such as paper and woven fabrics. Although the medical market for nonwovens is relatively mature, demand will benefit from the strengthening of surgical infection control safeguards, which will promote growth by boosting the demand for such single-use nonwoven products as surgical and patient gowns, surgical drapes and face masks.

Construction uses to pace nondisposables market

Nondisposables, which comprised roughly one-third of nonwovens sales in 2006, will grow at a slower pace than disposables. However, the largest nondisposables market, construction, will post above-average gains, fueled by robust growth in nonresidential construction. Other smaller markets, such as agriculture, will also see excellent gains as new applications for nonwoven products continue to be developed. However, declines in clothing and weak prospects for furniture will limit overall growth in the nondisposables segment, as manufacturing of these products continues to move outside the US.

Nonwovens

US Industry Study with Forecasts for ***2011 & 2016***

Freedonia®

Sample Text, Table & Chart

TABLE IV-3

CARDED NONWOVEN FABRIC DEMAND

Item	1996	2001	2006	2011	2016
Nonwoven Fabric Demand (mil $)	2				160
% carded					0.0
Carded Nonwovens Demand (mil $)					50
cents/sq yd					1.5
Carded Nonwovens (mil sq yds)	1				90
% carded					6.2
Nonwoven Fabric Demand (mil sq yds)	2				100

SAMPLE TABLE

DISPOSABLES MARKETS

Nonwoven Fabric Demand -- Deman consumer wipes market is forecast to increase million. As the wipes in es are seeking to differe ore expensive) nonwove l or poly-backed double h side of the wipe. Thr ces will be restrained so products compared to the much lower cost of a separate cleanser and substrate such as a wash cloth or paper towel. Additionally, as baby wipes and light cleaning wipes become more cost competitive, the increasing use of lower value nonwovens in these types of wipes will slow value gains. Concerns about the number of wipes ending up in landfills are expected to be addressed by the introduction of a growing number of flushable wipes, particularly in the baby wipe and personal care wipe segments.

SAMPLE TEXT

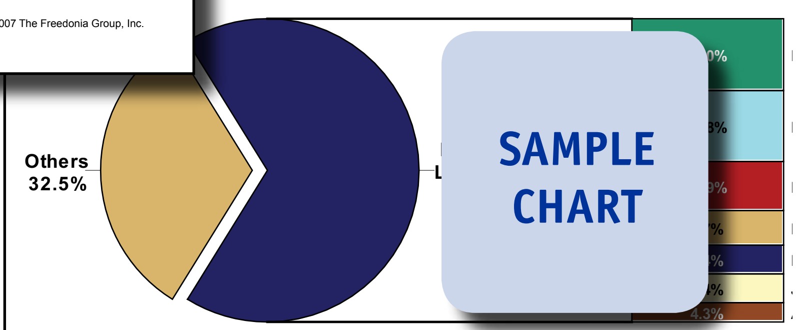
Nonwovens are the preferred materials for wipes because they are less expensive, more hygienic and more versatile than conventional woven cloths. Additionally, nonwovens are softer, stronger and more amenable to retaining treatments such as soaps and cleaning fluids than paper materials. To compete more effectively with reusable cloth wipes, producers are developing nonwovens with increasingly higher basis weights for greater strength and a more cloth-like texture. Nonwoven wipes are marketed as providing greater convenience and better hygiene compared to reusable cloths. The producers of nonwoven wipes compete on the basis of superior performance and affordability.

A variety of nonwoven materials are used to produce wipes for the consumer market. The fibers most widely used in the production of wipes include cotton, rayon, polypropylene, polyester and wood pulp. Bicomponent fibers are also used for certain specialty applications, such

138

CHART VIII-1

NWOVEN FABRIC MARKET SHARE, 2006
($4.7 billion)



SAMPLE CHART

Nonwovens

US Industry Study with Forecasts for ***2011 & 2016***

Sample Profile, Table & Forecast

TABLE VII-3

CONSTRUCTION DEMAND FOR NONWOVEN FABRICS
(million dollars)

Item	1996	2001	2006	2011	2016
Construction Expenditures (bil $)					75
$ nonwovens/000$ expenditures					8
Construction Nonwovens Demand					5
By Application:					
Building Construction					5
Geotextiles					0
By Type:					
Spunbonded					3
Other Nonwovens					2
% construction					1
Nondisposables Nonwovens Demand	1				210

SAMPLE TABLE

COMPANY PROFILES

Barnhardt Manufacturing Company
1100 Hawthorne Lane
Charlotte, NC 28205
704-376-0380
http://www.ba

Annual Sales:
Employment:
Key Products:

SAMPLE PROFILE

Barnhard ... er of fiber and foam cushioni ... roducts. The Company's ma ... n, carded cotton and cushion products. Barnhardt also maintains four specialized divisions: Richmond Dental, Intrinsics, Carolina Absorbent Cotton and North Carolina Foam Industries.

The Company is active in the US nonwovens industry through the production and sale of bleached cotton and carded cotton nonwoven products. These products are produced and sold through Barnhardt and the Company's Carolina Absorbent Cotton, Richmond Dental and Intrinsics divisions. Barnhardt's bleached cotton products can be used in medical, pharmaceutical and other health care applications, as well as in personal and home care applications. The products are suitable for cleaning, exfoliating, wiping, absorbing, removing, protecting, filtering, applying, abrading, polishing, containing and delivering. The Company offers a variety of fiber finishes to enhance its bleached cotton products including a scroop finish, which is a crisp, multiple-use finish approved for medical, pharmaceutical, and feminine care applications; NEEDLEZE bleached cotton finish which is developed specifically for ease of processing on needlepunch equipment or for yarn spinning; and FIBERSOFT finish for enhanced softness.

166

"Demand for nonwovens in construction markets, including geotextiles and building construction, is forecast to increase 6.4 percent annually through 2011 to $430 million. Growth will be driven by an acceleration in nonresidential construction expenditures, bolstering demand for nonwovens in commercial and institutional roofing applications. Gains will also be driven by ..."

--Section VII, pg. 182

ORDER INFORMATION

Five Convenient Ways to Order

INDUSTRY MARKET RESEARCH FOR BUSINESS LEADERS, STRATEGISTS, DECISION MAKERS

Freedonia®

ONLINE: www.freedoniagroup.com

MAIL: Print out and complete the order form and send to The Freedonia Group (see address at the bottom of this form)

PHONE: Call toll free, 800.927.5900 (US) or +1 440.684.9600

FAX: +1 440.646.0484 (US)

EMAIL: info@freedoniagroup.com

Free Handling & Shipping

There is NO charge for handling or UPS shipping in the US. Expect delivery in 3 to 5 business days. Outside the US, Freedonia provides free airmail service. Express delivery is available at cost.

Orders Outside of the US

Checks must be made payable in US funds, drawn against a US bank and mailed directly to The Freedonia Group. For wire transfers please contact our customer service department at info@freedoniagroup.com. Credit cards accepted.

Credit Card Orders

For convenience, Freedonia accepts American Express, MasterCard or Visa. Credit card purchases must include account number, expiration date and authorized signature.

Save 15%

If you order three (3) different titles at the same time, you can receive a 15% discount. If your order is accompanied by a check or wire transfer, you may take a 5% cash discount (discounts do not apply to Corporate Use Licenses).

Corporate Use License

Now every decision maker in your organization can act on the key intelligence found in all Freedonia studies. For an additional $2300, companies receive unlimited use of an electronic version (PDF) of the study. Place it on your intranet, e-mail it to coworkers around the world, or print it as many times as you like,

Click here to learn more about the Corporate Use License

ORDER FORM

F-WEB.2271

Nonwovens $4600

☐ Corporate Use License (add to study price) * +$2300

___ Additional Print Copies @ $500 each *

Total (including selected option) $________

☐ Enclosed is my check (5% discount) drawn on a US bank and payable to The Freedonia Group, Inc., in US funds (Ohio residents add 7.75% sales tax)

☐ Bill my company ☐ American Express ☐ MasterCard ☐ Visa

Credit Card # ________________

Expiration MM YY

Signature ________________

Name ________________

Title ________________

Company ________________

Division ________________

Street ________________ (No PO Box please)

City/State/Zip ________________

Country ________________

Phone ________________ Fax ________________

Email ________________

* Please check appropriate option and sign below to order an electronic version of the study.

☐ Corporate Use License Agreement

The above captioned study may be stored on the company's intranet or shared directory, available to company employees. Copies of the study may be made, but the undersigned represents that distribution of the study will be limited to employees of the company.

Signature ________________

☐ Individual Use License Agreement

The undersigned hereby represents that the above captioned study will be used by only ___ individual(s) who are employees of the company and that the study will not be loaded on a network for multiple users. In the event that usage of the study changes, the Company will promptly notify Freedonia of such change and will pay to Freedonia the appropriate fee based on Freedonia's standard fee schedule then in effect. Note: Entire company corporate use license, add $2300; one additional user, add $500; two additional users, add $1000; three additional users, add $1500.

Signature ________________

The Freedonia Group, Inc. 767 Beta Drive • Cleveland, OH • 44143-2326 • USA • Web site: www.freedoniagroup.com
Tel US: 800.927.5900 or +1 440.684.9600 • Fax: +1 440.646.0484 • e-mail: info@freedoniagroup.com

Other Studies

World Wipes

Global wipes demand will grow 6.1% yearly through 2011. Developed markets in the US, Western Europe and Japan will remain dominant, while faster growth will occur in developing nations such as China and India. Baby wipes will stay the largest type while household, personal care and health care wipes lead gains. This study analyzes the $5.8 billion world wipes industry, with forecasts for 2011 and 2016 by product, world region and for 14 countries. It also details market share and profiles major producers.

#2231 .... 08/2007..................... $5400

Glass Fibers

US glass fiber demand will reach $7 billion in 2011. The dominant glass wool fiber sector will grow the fastest, driven by rebounding demand in office and commercial construction and increasing insulation use per structure to improve energy efficiency. Reinforced plastics will present the best opportunities for textile glass fiber. This study analyzes the US glass fiber industry, with forecasts for 2011 and 2016 presented by type and market. It also evaluates company market share and profiles leading competitors.

#2199 .... 05/2007..................... $4400

Wipes

US wipes demand will grow 6.1% annually through 2011, propelled by new products and further market segmentation. Baby wipes will remain the top selling type while disinfectant and medicated wipes will grow faster. Spunlaced nonwovens will lead gains by substrate, while surfactants pace demand among the chemicals which saturate wipes. This study analyzes the $1.6 billion US wipes industry to 2011 and 2016 by market, substrate and chemical. It also evaluates company market share and profiles major producers.

#2155 .... 02/2007..................... $4300

Coated Fabrics

US demand for coated fabrics will grow 3.2% annually through 2010. Gains will be helped by a recovery in nonresidential wallcoverings, awnings and canopies, and by continued strength in protective clothing and motor vehicle airbags. Nonrubber coated fabrics will stay dominant while fabric-backed wallcoverings will grow the fastest. This study analyzes the $2.7 billion US coated fabric industry to 2010 and 2015 by product, substrate and market. It also evaluates company market share and profiles major producers.

#2143 .... 02/2007..................... $4400

Geosynthetics

US geosynthetic demand will grow 4.4% annually through 2010, based on a recovery in nonbuilding construction and a wider range of uses. Geotextiles will remain dominant while geogrids, geonets and geocomposites will grow the fastest. The construction market will continue as the largest end use and show the fastest gains. The study analyzes the US geosynthetic industry to 2010 and 2015 by product, market and region. It also evaluates company market share and profiles major geosynthetic manufacturers.

#2153 .... 01/2007..................... $4300

About The Freedonia Group

The Freedonia Group, Inc., is a leading international industry market research company that provides its clients with information and analysis needed to make informed strategic decisions for their businesses. Studies help clients identify business opportunities, develop strategies, make investment decisions and evaluate opportunities and threats. Freedonia research is designed to deliver unibiased views and reliable outlooks to assist clients in making the right decisions. Freedonia capitalizes on the resources of its proprietary in-house research team of experienced economists, professional analysts, industry researchers and editorial groups. Freedonia covers a diverse group of industries throughout the United States, the emerging China market, and other world markets. Industries analyzed by Freedonia include:

• Chemicals • Plastics • Life Sciences • Packaging • Building Materials • Security & Electronics • Industrial Components & Equipment • Automotive & Transportation Equipment • Household Goods • Energy/Power Equipment

Click here to learn more about Freedonia

Freedonia Custom Research

Freedonia Custom Research delivers the same high quality, thorough and unbiased assessment of an industry or market as an industry study. Since the research initiative is based upon a company's specific needs, companies harness Freedonia's research capabilities and resources to answer unique questions. When you leverage the results of a Freedonia Custom Research engagement, you are able to obtain important answers to specific questions and issues associated with: mergers and acquisitions, new product launches/development, geographic expansion, entry into new markets, strategic business planning, and investment and funding decisions.

Freedonia Custom Research is ideal for companies seeking to make a strategic difference in the status quo and focus on future business growth. Working side by side with clients, Freedonia's team is able to define a research project that is custom-tailored to answer specific questions and provide the basis from which a company can make informed business decisions.

Click here to learn more about Custom Research

Click here for complete title list

Click here to visit freedoniagroup.com

The Freedonia Group, Inc. 767 Beta Drive • Cleveland, OH • 44143-2326 • USA • Web site: www.freedoniagroup.com
Tel US: 800.927.5900 or +1 440.684.9600 • Fax: +1 440.646.0484 • e-mail: info@freedoniagroup.com