

WINTERGREEN RESEARCH, INC.

**DWDM Market Opportunities, Strategies, and Forecasts,
2003 to 2008**

DWDM



Picture by Susie Eustis

MOUNTAINS OF OPPORTUNITY

**WinterGreen Research, Inc.
Lexington, Massachusetts**

www.wintergreenresearch.com

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CHECK OUT THESE KEY TOPICS

DWDM MARKET SHARES

DWDM FORECASTS

DWDM CARRIER TRENDS

Market Segmentation

Metro DWDM Line Systems

Network Management

SUBMARINE DWDM

OPTICAL ARCHITECTURES

SYSTEMS APPROACH TO DWDM

LIGHTING DARK FIBER

WAVELENGTHS

DWDM APPLICATIONS

TUNABLE LASERS

LONG HAUL TERRESTRIAL DWDM LINE SYSTEMS

FORWARD ERROR CORRECTION

TRANSPARENT METRO DWDM EQUIPMENT

OPPORTUNITY ABOUND

WinterGreen Research, Inc.

Lexington, Massachusetts

www.wintergreenresearch.com

DWDM Market Opportunities, Strategies, and Forecasts, 2003 to 2008

DWDM brings innovative technologies to the broadband market. Platforms are evolving that extend transmission systems into access, supporting the engagement of multiple value added services on DWDM platforms. There is a convergence of transmission and digital loop carrier platform technology.

Companies need to have a technology that combines both time-to-market and time-to-volume production. Market advantage is achieved by a sustainable product offering. Metro DWDM represents a major market shift impacting DWDM inventory and products, creating a differentiation between products and a major product advantage for companies with affordable lasers.

Market Conditions

Economies have slowed worldwide. Telecommunications infrastructure investment has slowed worldwide. Delay in spending for capital equipment relates in part to overcapacity. The telecommunications industry has enormous overcapacity. The Internet continues to have more users and drive more traffic on networks, but the revenue still comes from voice services.

DWDM, gigabit routers, terabit routers, and fiber networks have increased the dark fiber capacity in the networks and have created a situation where profitability for service providers depends on utilizing existing plant. Proprietary circuit switches that cost \$1 million can be replaced with a \$150,000 IBM, Hewlett Packard, or Sun server loaded with call control soft switch software. Wireless communications promise to replace narrowband wireline services. The long distance and metro networks that use DWDM are achieving broadband systems capability.

Optical networking is evolving the capability to achieve all optical systems capability. Networks are evolving all optical systems capability. Capital spending is evolving to remove network bottlenecks and permitting carriers to pursue profitable revenue opportunities.

DWDM Growth Opportunities

DWDM growth opportunities relate to lighting dark fiber, implementing broadband networks, and creating a platform for value added services delivery. The ability to increase transport capacity is needed universally. High bandwidth is needed to improve productivity and increase supply chain efficiency.

DWDM GROWTH OPPORTUNITIES

Metro systems implementation

New regional markets

Lighting dark fiber

E-services demand

Storage area network SAN market opportunities

Value added services demand

High bandwidth demand

Supply chain efficiency demand

Metro markets are shifting as the prices for laser components come down.

DWDM Market Size

DWDM markets are expected to grow from \$3.4 billion in 2002 to \$3.6 billion in 2008.

Companies Profiled

Market Leaders

Nortel Networks
Alcatel
NEC
Ciena
Lucent Technologies
Tellabs
Siemens
Sorrento

Other Market Participants

ADVA Optical	JDS Uniphase
Agilent Technologies	Huawei
Avici Systems	Lightbit
Avonex	Lumentis
Cisco Systems	Manticom Networks
Corning	Marconi
ECI Telecom	Optical Micro Machines
Ericsson	PacketLight
Fujitsu Optical Transport Solutions	Sycamore Networks
Hewlett Packard	Telect

DWDM Market Strategies and Forecasts, 2003-2008

REPORT METHODOLOGY

THIS IS THE HUNDRED AND THIRTIETH REPORT IN A SERIES OF MARKET RESEARCH REPORTS THAT PROVIDE FORECASTS IN COMMUNICATIONS, TELECOMMUNICATIONS, THE INTERNET, COMPUTER, SOFTWARE, AND TELEPHONE EQUIPMENT. THE PROJECT LEADERS TAKE DIRECT RESPONSIBILITY FOR WRITING AND PREPARING EACH REPORT. THEY HAVE SIGNIFICANT EXPERIENCE PREPARING INDUSTRY STUDIES. FORECASTS ARE BASED ON PRIMARY RESEARCH AND PROPRIETARY DATA BASES. FORECASTS REFLECT ANALYSIS OF THE MARKET TRENDS IN THE SEGMENT AND RELATED SEGMENTS. UNIT AND DOLLAR SHIPMENTS ARE ANALYZED THROUGH CONSIDERATION OF DOLLAR VOLUME OF EACH MARKET PARTICIPATION IN THE SEGMENT. INSTALLED BASE ANALYSIS AND UNIT ANALYSIS IS BASED ON INTERVIEWS AND AN INFORMATION SEARCH. MARKET SHARE ANALYSIS INCLUDES CONVERSATIONS WITH KEY CUSTOMERS OF PRODUCTS, INDUSTRY SEGMENT LEADERS, MARKETING DIRECTORS, DISTRIBUTORS, LEADING MARKET PARTICIPANTS, OPINION LEADERS, AND COMPANIES SEEKING TO DEVELOP MEASURABLE MARKET SHARE. OVER 200 IN DEPTH INTERVIEWS ARE CONDUCTED FOR EACH REPORT WITH A BROAD RANGE OF KEY PARTICIPANTS AND INDUSTRY LEADERS IN THE MARKET SEGMENT.

YOU MUST HAVE THIS STUDY

DWDM Market Opportunities, Strategies, and Forecasts, 2003 to 2008

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ABOUT THE COMPANY

WINTERGREEN RESEARCH, FOUNDED IN 1985, PROVIDES STRATEGIC MARKET ASSESSMENTS IN TELECOMMUNICATIONS, COMMUNICATIONS EQUIPMENT, HEALTH CARE, AND ADVANCED COMPUTER TECHNOLOGY. INDUSTRY REPORTS FOCUS ON OPPORTUNITIES THAT WILL EXPAND EXISTING MARKETS OR DEVELOP MAJOR NEW MARKETS. THE REPORTS ASSESS NEW PRODUCT AND SERVICE POSITIONING STRATEGIES, NEW AND EVOLVING TECHNOLOGIES, AND TECHNOLOGICAL IMPACT ON PRODUCTS, SERVICES, AND MARKETS. MARKET SHARES ARE PROVIDED. LEADING MARKET PARTICIPANTS ARE PROFILED, AND THEIR MARKETING STRATEGIES, ACQUISITIONS, AND STRATEGIC ALLIANCES ARE DISCUSSED. THE PRINCIPALS OF WINTERGREEN RESEARCH HAVE BEEN INVOLVED IN ANALYSIS AND FORECASTING OF INTERNATIONAL BUSINESS OPPORTUNITIES IN TELECOMMUNICATIONS AND ADVANCED COMPUTER TECHNOLOGY MARKETS FOR OVER 30 YEARS.

ABOUT THE PRINCIPAL AUTHORS

ELLEN T. CURTISS, TECHNICAL DIRECTOR, CO-FOUNDER OF WINTERGREEN RESEARCH, CONDUCTS STRATEGIC AND MARKET ASSESSMENTS IN TECHNOLOGY-BASED INDUSTRIES. PREVIOUSLY SHE WAS A MEMBER OF THE STAFF OF ARTHUR D. LITTLE, INC., FOR 23 YEARS, MOST RECENTLY AS VICE PRESIDENT OF ARTHUR D. LITTLE DECISION RESOURCES, SPECIALIZING IN STRATEGIC PLANNING AND MARKET DEVELOPMENT SERVICES. SHE IS A GRADUATE OF BOSTON UNIVERSITY AND THE PROGRAM FOR MANAGEMENT DEVELOPMENT AT HARVARD GRADUATE SCHOOL OF BUSINESS ADMINISTRATION. SHE IS THE AUTHOR OF RECENT STUDIES ON WORLDWIDE TELECOMMUNICATIONS MARKETS, THE TOP TEN INTERNET EQUIPMENT COMPANIES, THE TOP TEN CONTRACT MANUFACTURING COMPANIES, AND THE TOP TEN TELECOMMUNICATIONS MARKET ANALYSIS AND FORECASTS.

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