

WinterGreen Research, Inc.

**Wearable Robots, Exoskeletons: Market Shares, Market Strategies, and
Market Forecasts, 2015 to 2021**

Mountains of Opportunity



Picture by Susan Eustis

WinterGreen Research, Inc.

Lexington, Massachusetts

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REPORT # SH26511914

421 PAGES

161 TABLES AND FIGURES

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CHECK OUT THESE KEY TOPICS

Wearable Robots, Exoskeleton Applications include Paraplegic Walking, Stroke Recovery, Manufacturing, Shipbuilding, Warehouse and Construction

<p>Exoskeleton Spinal Cord Injury Stroke Protocols Active Prostheses Exoskeletons Robotic Technologies Leverage Neuroplasticity Wearable Robotics Strengthen The Upper Extremity Wearable Robots</p>	<p>Strengthen The Lower Extremity Hand Rehabilitation Physical Therapy Automation Recovery After Hip Injury Wrist Rehabilitation Stroke Rehabilitation Exoskeleton Software Hip Rehabilitation Anti-Gravity Treadmill Gait Training Spinal Cord Injury Rehabilitation</p>	<p>Paraplegic Walking Wearable Robot Stroke Recovery Wearable Robot Manufacturing Wearable Robot Shipbuilding, Wearable Robot Warehouse Wearable Robot Construction</p>
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Smart Wearable Robots: Exoskeleton Systems Bring Automated Process to Personal Movement and Personal Lifting

Wearable Robots, Exoskeletons: Market Shares, Market Strategies, and Market Forecasts, 2015 to 2021

Next Generation Wearable Robots, Exoskeletons: Technology Major Breakthroughs in Personal Paraplegic Walking and Improving Strength

LEXINGTON, Massachusetts (October 26 , 2015) – WinterGreen Research announces that it has published a new study **Wearable Robots, Exoskeletons: Market Shares, Strategy, and Forecasts, Worldwide, 2015 to 2021**. Wearable Robots, Exoskeletons leverage better technology, they support high quality, lightweight materials and long life batteries. Wearable robots, exoskeletons are used for permitting paraplegic wheel chair patients walk. They are used to assist with weight lifting for workers: Designs with multiple useful features are available. The study has 421 pages and 161 tables and figures.

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Wearable robots, exoskeletons units are evolving additional functionality rapidly. Wearable robots functionality is used to assist to personal mobility via exoskeleton robots. They promote upright walking and relearning of lost functions. Exoskeletons are helping older people move after a stroke. Exoskeleton s deliver higher quality rehabilitation, provide the base for a growth strategy for clinical facilities.

Exoskeletons support occupational heavy lifting. Exoskeletons are poised to play a significant role in warehouse management, ship building, and manufacturing. Usefulness in occupational markets is being established. Emerging markets promise to have dramatic and rapid growth.

Industrial workers and warfighters can perform at a higher level when wearing an exoskeleton. Exoskeletons can enable paraplegics to walk again. Devices have the potential to be adapted further for expanded use in healthcare and industry. Elderly people benefit from powered human augmentation technology. Robots assist wearers with walking and lifting activities, improving the health and quality of life for aging populations.

Exoskeletons are being developed in the U.S., China, Korea, Japan, and Europe. They are useful in medical markets. They are generally intended for logistical and engineering purposes, due to their short range and short battery life. Most exoskeletons can operate independently for several hours. Chinese manufacturers express hope that upgrades to exoskeletons extending the battery life could make them suitable for frontline infantry in difficult environments, including mountainous terrain.

Robotics has tremendous ability to support work tasks and reduce disability. Disability treatment with sophisticated exoskeletons is anticipated to providing better outcomes for patients with paralysis due to traumatic injury. With the use of exoskeletons, patient recovery of function is subtle or non existent, but getting patients able to walk and move around is of substantial benefit, People using exoskeleton robots are able to make continued progress in regaining functionality even years after an injury.

Rehabilitation robotic technologies developed in the areas of stroke rehabilitation and SCI represent therapeutic interventions with utility at varying points of the continuum of care. Exoskeletons are a related technology, but provide dramatic support for walking for people who simply cannot walk.

Parker Hannifin Indego intends to include functional electrical stimulation. It accelerates recovery of therapy in every dimension. Implementation in these kinds of devices is a compelling use of the electrical stimulation technology.

It is a question of cost. The insurance will only pay for a small amount of exoskeleton rehabilitation. More marketing will have a tremendous effect in convincing people that they can achieve improvements even after years of effort.

Rehabilitation robotics includes development of devices for assisting performance of sensorimotor functions. Devices help arm, hand, leg rehabilitation by supporting repetitive motion that builds neurological pathways to support use of the muscles. Development of different schemes for assisting therapeutic training is innovative. Assessment with sensorimotor performance helps patients move parts of the body that have been damaged.

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Exoskeletons are used mainly as therapy aids in this manner, highly targeted, highly specific as to how much movement is supported at any one time. Learning how to walk for a wheelchair bound patient or relearning of lost functions in a patient depends on stimulation of desire to conquer the disability. Effective tools help incen desire of the patient to get better.

Initially when a market is just developing and it is going through the early adopter phase, penetration analysis is an appropriate balance to growth %. The penetration analysis for wearable robots is still too small to be useful but it is useful to bear in mind that there is tremendous upside to this market.

Wearable Robots, Exoskeletons at \$16.5 million in 2014 are anticipated to reach \$2.1 billion by 2021. New technology from a range of vendors provide multiple designs actually work. This bodes well for market development.

WinterGreen Research is an independent research organization funded by the sale of market research studies all over the world and by the implementation of ROI models that are used to calculate the total cost of ownership of equipment, services, and software. The company has 35 distributors worldwide, including Global Information Info Shop, Market Research.com, Research and Markets, electronics.ca, and Thompson Financial. WinterGreen Research is positioned to help customers facing challenges that define the modern enterprises. The increasingly global nature of science, technology and engineering is a reflection of the implementation of the globally integrated enterprise. Customers trust wintergreen research to work alongside them to ensure the success of the participation in a particular market segment.

WinterGreen Research supports various market segment programs; provides trusted technical services to the marketing departments. It carries out accurate market share and forecast analysis services for a range of commercial and government customers globally. These are all vital market research support solutions requiring trust and integrity.

Key words: Exoskeleton , Active Prostheses, Exoskeletons , Robotic Technologies Leverage Neuroplasticity, Wearable Robotics, Strengthen The Upper Extremity, Strengthen The Lower Extremity, Hand Rehabilitation, Physical Therapy Automation, Recovery After Hip Injury, Wrist Rehabilitation, Stroke Rehabilitation, Exoskeleton Software, Hip Rehabilitation, Anti-Gravity Treadmill, Spinal Cord Injury Rehabilitation, Wrist Rehabilitation, Stroke Rehabilitation, Exoskeleton Software, Hip Rehabilitation, Anti-Gravity Treadmill, Gait Training, Spinal Cord Injury Rehabilitation, Paraplegic Walking, Wearable Robot Stroke Recovery, Wearable Robot Manufacturing , Wearable Robot Shipbuilding,, Wearable Robot Warehouse, Wearable Robot Construction,

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Companies Profiled

Market Leaders

Ekso Bionics	ReWalk
China North Industries Group Corporation (NORINCO)	
Rex Bionics	Parker Hannifin
Cyberdyne	Sarcos
Lockheed Martin	Daewoo

Market Participants

AlterG	ReWalk Robotics	Catholic University of America
Ekso Bionics	RexBionics	United Instrument Manufacturing Corporation
Hocoma	Rostec	
Parker Hannifin	Sarcos	
Revision Military	University of Twente	

Wearable Robots, Exoskeletons: Market Shares, Market Strategies, and Market Forecasts, 2015 to 2021

Report Methodology

This is the 651st report in a series of primary market research reports that provide forecasts in communications, telecommunications, the Internet, computer, software, telephone equipment, health equipment, and energy. Automated process and significant growth potential are priorities in topic selection. 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.

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The primary research is conducted by talking to customers, distributors and companies. The survey data is not enough to make accurate assessment of market size, so WinterGreen Research looks at the value of shipments and the average price to achieve market assessments. Our track record in achieving accuracy is unsurpassed in the industry. We are known for being able to develop accurate market shares and projections. This is our specialty.

The analyst process is concentrated on getting good market numbers. This process involves looking at the markets from several different perspectives, including vendor shipments. The interview process is an essential aspect as well. We do have a lot of granular analysis of the different shipments by vendor in the study and addenda prepared after the study was published if that is appropriate.

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 participant 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. We establish accurate market forecasts based on economic and market conditions as a base. Use input/output ratios, flow charts, and other economic methods to quantify data. Use in-house analysts who meet stringent quality standards.

Interviewing key industry participants, experts and end-users is a central part of the study. Our research includes access to large proprietary databases. Literature search includes analysis of trade publications, government reports, and corporate literature.

Findings and conclusions of this report are based on information gathered from industry sources, including manufacturers, distributors, partners, opinion leaders, and users. Interview data was combined with information gathered through an extensive review of internet and printed sources such as trade publications, trade associations, company literature, and online databases. The projections contained in this report are checked from top down and bottom up analysis to be sure there is congruence from that perspective.

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The base year for analysis and projection is 2010. With 2010 and several years prior to that as a baseline, market projections were developed for 2011 through 2017. These projections are based on a combination of a consensus among the opinion leader contacts interviewed combined with understanding of the key market drivers and their impact from a historical and analytical perspective.

The analytical methodologies used to generate the market estimates are based on penetration analyses, similar market analyses, and delta calculations to supplement independent and dependent variable analysis. All analyses are displaying selected descriptions of products and services.

This research includes referencde to an ROI model that is part of a series that provides IT systems financial planners access to information that supports analysis of all the numbers that impact management of a product launch or large and complex data center. The methodology used in the models relates to having a sophisticated analytical technique for understanding the impact of workload on processor consumption and cost.

WinterGreen Research has looked at the metrics and independent research to develop assumptions that reflect the actual anticipated usage and cost of systems. Comparative analyses reflect the input of these values into models.

The variables and assumptions provided in the market research study and the ROI models are based on extensive experience in providing research to large enterprise organizations and data centers. The ROI models have lists of servers from different manufacturers, Systems z models from IBM, and labor costs by category around the world. This information has been developed from WinterGreen research proprietary data bases constructed as a result of preparing market research studies that address the software, energy, healthcare, telecommunications, and hardware businesses.

YOU MUST HAVE THIS STUDY

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Wearable Robots, Exoskeletons: Market Shares, Market Strategies, and Market Forecasts, 2015 to 2021

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Exoskeleton robotic devices automate process in a manner that significantly extends the time rehabilitation is useful, dramatically increasing the value of the rehabilitation. Advanced Exoskeleton technologies are associated with emerging rehabilitation systems that are used to improve the quality of life for people with disabilities. Technologies that make exoskeletons feasible are closely associated with new materials and smaller, lighter, more feature loaded electronics, software, and sensors.

Wearable Robots, Exoskeletons Executive Summary

The study is designed to give a comprehensive overview of the Wearable Robots, Exoskeletons market segment. Research represents a selection from the mountains of data available of the most relevant and cogent market materials, with selections made by the most senior analysts. Commentary on every aspect of the market from independent analysts creates an independent perspective in the evaluation of the market. In this manner the study presents a comprehensive overview of what is going on in this market, assisting managers with designing market strategies likely to succeed.

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ABOUT THE COMPANY

WinterGreen Research, founded in 1985, provides strategic market assessments in telecommunications, communications equipment, health care, Software, Internet, Energy Generation, Energy Storage, Renewable energy, and advanced computer technology.

Industry reports focus on opportunities that expand existing markets or develop major new markets. The reports access new product and service positioning strategies, new and evolving technologies, and technological impact on products, services, and markets. Innovation that drives markets is explored. 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.

The studies provide primary analytical insight about the market participants. By publishing material relevant to the positioning of each company, readers can look at the basis for analysis. By providing descriptions of each major participant in the market, the reader is not dependent on analyst assumptions, the information backing the assumptions is provided, permitting readers to examine the basis for the conclusions.

WinterGreen Research is positioned to help customers facing challenges that define the modern enterprises. The increasingly global nature of science, technology and engineering is a reflection of the implementation of the globally integrated enterprise. Customers trust wintergreen research to work alongside them to ensure the success of the participation in a particular market segment.

WinterGreen Research supports various market segment programs; provides trusted technical services to the marketing departments. It carries out accurate market share and forecast analysis services for a range of commercial and government customers globally. These are all vital market research support solutions requiring trust and integrity.

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.

Susan Eustis, President, co-founder of WinterGreen Research, is a senior analyst. She has done research in communications, healthcare equipment, and computer markets and applications. She holds several patents in microcomputing and parallel processing. She has the original patents in electronic voting machines. She has new patent applications in format varying, multiprocessing, and electronic voting. She is the author of recent studies of the Internet, Cloud Computing marketing strategies, Internet equipment, biometrics, a study of Healthcare Equipment, Worldwide Telecommunications Equipment, Top Ten Telecommunications, Digital Loop Carrier, Web Hosting, Web Services, and Application Integration markets. Ms. Eustis is a graduate of Barnard College. Ms. Eustis was named Top Woman CEO in 2012 by Who's Who Worldwide. She was named Top Woman Market Research Analyst the same year.

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Women of distinction magazine has put Susan Eustis on the front cover and Who's Who has given me several awards recently, some of which are not announced, but including the following.

<http://www.worldwidewhoswhoreleases.com/press-release/susan-eustis-has-been-named-a-professional-of-the-year-in-market-research-analy>. June 23, 2015, Susan Eustis, President and Chief Executive Officer of WinterGreen Research, Inc., has been named a Worldwide Branding Professional of the Year in Market Research & Analysis. While inclusion in Worldwide Branding is an honor, only small selections of members in each discipline are chosen for this distinction. These special honorees are distinguished based on their professional accomplishments, academic achievements, leadership abilities, years of service, and the credentials they have provided in association with their Worldwide Branding membership. - See more at: <http://www.worldwidewhoswhoreleases.com/press-release/susan-eustis-has-been-named-a-professional-of-the-year-in-market-research-analy#sthash.qEJXNL4C.dpuf>

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