

Exoskeletons: Market Shares, Strategies, and Forecasts, Worldwide, 2015 to 2021

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Abstracts

LEXINGTON, Massachusetts (April 2, 2015) – WinterGreen Research announces that it has published a new study Exoskeleton: Market Shares, Strategy, and Forecasts, Worldwide, 2015 to 2021. The 2015 study has 254 pages, 102 tables and figures. Worldwide markets are poised to achieve significant growth as the exoskeletons are used inside rehabilitation treatment centers and at home to provide stability for paraplegics and people who need gait training. Ultimately exoskeletons will be used for the rehabilitation of all patients with serious physical injuries or physical dysfunction.

Exoskeleton robots support walking for previously wheel chair bound patients: They function as wearable robots that bring new functionality to the rehabilitation markets. Exoskeleton robots promote upright walking and relearning of lost functions in a patient needing physical therapy. Exoskeletons can play a significant role in this medical treatment process. Emerging markets promise to have dramatic and rapid growth. Exoskeletons deliver higher quality rehabilitation, provide growth strategy for clinical facilities.

Relearning of lost functions in a patient depends on stimulation of desire to conquer the disability. The Exoskeleton can show patients progress and keep the progress occurring, encouraging patients to work on getting healthier. Independent functioning of patients depends on intensity of treatment, task-specific exercises, active initiation of movements and motivation and feedback. Exoskeleton can assist with these tasks in multiple ways. Creating a gaming aspect to the rehabilitation process has brought a significant improvement in systems.

As patients get stronger and more coordinated, a therapist can program the exoskeleton robot to let them bear more weight and move more freely in different directions, walking,

kicking a ball, or even lunging to the side to catch one. The robot can follow the patient's lead as effortlessly as a ballroom dancer, its presence nearly undetectable until it senses the patient starting to drop and quickly stops a fall. In the later stages of physical therapy, the robot can nudge patients off balance to help them learn to recover.

According to Susan Eustis, principal author of the team that developed the market research study, "Exoskeleton robotic therapy stimulus of upper and lower limbs provides a way for people who cannot walk to be upright and move from a vertical position, a very exciting market development. Examples of the excellent motor recovery after stroke that can be achieved using an exoskeleton." Lower limb systems and exoskeleton systems provide wheelchair bound patients the ability to get out of a wheelchair.

The exoskeleton products that work are still emerging as commercial devices. All the products that are now commercially viable are positioned to achieve significant staying power in the market long term, providing those companies that offer them with a possibility for long term leadership position in the market.

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.

Robotics has tremendous ability to reduce disability and lead to 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.

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.

Robotic exoskeleton rehabilitation equipment is mostly used in rehabilitation clinical facilities, though there is some effort to build a home market. There is a huge opportunity for launching a homecare equipment market if it is done through sports clubs rather than through clinical facilities. People expect insurance to pay for medical equipment but are willing to spend bundles on sports trainer equipment for the home. Exoskeleton can help stroke patients years after an event, so it makes a difference if someone keeps working to improve their functioning.

Exoskeleton realistically extend the use of automated process for rehabilitation in the home. The availability of affordable devices that improve mobility is not likely to go unnoticed by the sports clubs and the baby boomer generation, now entering the over 65 age group and seeking to maintain lifestyle. As clinicians realize that more gains can be made by using Exoskeleton in the home, the pace of acquisitions will likely pick up.

The exoskeleton robot market size at \$16.5 million in 2014 is expected grow dramatically to reach \$2.1 billion by 2021. Exoskeleton markets will be separate and additive to the robotic rehabilitation market. A separate exoskeleton market will create growth by the weight of excellent device capabilities. Market growth is a result of the effectiveness of robotic treatment of muscle difficulty. The usefulness of the Exoskeleton is increasing. Doing more sophisticated combinations of exercise have become more feasible as the technology evolves. Patients generally practice 1,000 varied movements per session. With the robots, more sessions are possible.

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