The Rule-of-Three- Nano Retina (Israel)

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The "Rule-of-Three"

Through this section, Nanobugle tests the 3 main key success factors for the development of new nanotechnology/nanoscience companies in emerging countries.

This week: ISRAEL

1) Company Concept

Nano Retina is an Israeli company established in 2009. It is a privately held joint venture between Rainbow Medical and Zyvex Labs. Nano Retina's product concept is based upon the biomedical knowledge of its founder, Yossi Gross, the micro and nano machining capabilities of Zyvex Labs, and is enhanced by the collaborative efforts of neurological scientists and nanotechnology engineers from Israel, Europe and the U.S.

Nano Retina is developing a tiny bionic retinal implant designed to restore vision to tens of millions of people who have been blinded by retinal diseases, such as age-related macular degeneration ("AMD"). Following a 30-minute, minimally invasive procedure requiring local anesthesia, sight will be returned to those recieving the implant which will allow them to read and watch television again.

2) Added Value

Several other companies have previously attempted to develop implantable artificial retinas and have proven fundamental concepts, such as the ability of an implant to interface with neurons in the rear of the eye. However, these attempts have not met the three basic requirements for any mass-market solution: resolution, power supply and implantation simplicity. Nano Retina has addressed all three of these issues for the first time in one integrative product.

Nano Retina's novel solution for blindness caused by retinal disease includes all the necessary functionality of a retinal prosthesis in one tiny implant, i.e. image reception and transformation to neural stimulation with required energy and control utilities, and a footprint 100 times smaller than alternatives under development. The implant is powered wirelessly by means of infrared energy, and following implantation, the eye's own natural mechanics, including eye movement, pupil dilation and focus, are again used.

Nano Retina's Bio-Retina will deliver 600 pixels of resolution, which will return functionality to the blind even in unfamiliar places. The competition's developments provide a small fraction of this resolution and requires head movement instead of eye movement to control the field of vision.

3) Business Strategy

Nano Retina offers independence and dignity to the blind and will allow them to live productive lives. In time, Nano Retina technology will improve visual acuity even further, offering almost normal vision following implantation of next generation Bio-Retinas.

Nano Retina has implemented medical innovation side by side with micro-electro-mechanical system engineering, combining all the necessary know-how and expertise to deliver its product to market via the shortest possible development and regulatory pathway. Sales are planned to commence as early as 2015 and will grow significantly thereafter.

From a commercial standpoint, Nano Retina's solution will benefit not only patients and their families, but also ophthalmologists, who will be able to assist a previously untreatable population, and health care providers, who will achieve significant savings by enabling blind people to become independent and productive.

Source:

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www.nano-retina.info