POLAR DYNAMICS

Governor's Scholars Program, Murray State University 2018
Ben Camuel Chloe Craft Walker Greenwald Valerie Tran

Abstract

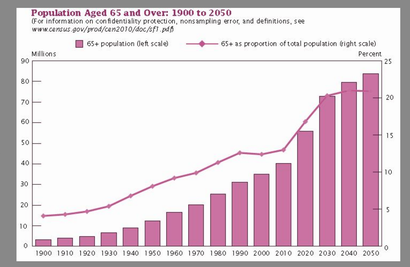
Artificial Intelligence is becoming increasingly applicable in many ways in our society, and some companies in Japan are attempting to enter the eldercare business using this technology. Several companies have developed robots to be used in nursing homes, such as Robear and Paro, but no company has yet to produce a cohesive system combining all aspects of the care needed. Polar Dynamics is endeavoring to change this by bringing a developed, all-encompassing system to the US.

Description

Penny the Penguin is a robot created to assist patients in nursing homes. With the increased number of senior citizens, more nursing homes have seen a trend of a lower worker-to-patient ratio. Every nursing home will be equipped with several "bodies", which will be able to help move patients, but since not all patients need specific tasks done at the same time, there would not be an individual one for each patient. For more personal interaction, the consumers would each have a device in their room similar to an Amazon Echo with the ability to connect to the bodies and interact with the patients separately. This way, each patient could still have access to the program at all times when they need it, but in a far more cost-efficient way.

Penny has the ability to:

- Lift patients
- Interact with patients (Voice commands)
- Access to medical records and administer medicine
- Predict when patients need to use the restroom
- Instruct games and exercises



Possible Risks

- **Software Malfunctions - Bad connections and broken machinery may plague the system before troubleshooting takes care of the issues.**
- **Different Reactions - Elder people may not be partial to this idea.**
- **Disabilities - People who are blind, deaf, or cannot speak may have trouble using the device.**
- **Short-term Expenses - The expensive cost of the robot, though only a one time purchase, may discourage companies from buying the product because of the need for sufficient funding.**

Resources

- Software Programs - The system will require bluetooth connection and AI between each individual part.
- Metals & Plastics - These materials are needed to build the robot and companion pieces, so obtaining these will be costly for both the producer and buyer.
- Dock Chargers - The robots will be charged rather than battery operated.

Marketing

The need for this product is due to the increase in average lifespan and the strain on overworked nursing home employees. The target market would be large scale nursing homes with patients over the age of 65. Being a for-profit company, Polar Dynamics' goal is to sell these AI systems in bulk, as a single purchase, to national nursing home chains. Over time, we hope to improve the efficiency and safety of nursing homes and to ensure all patients receive the care they need.

Products Currently on the Market

Paro

Robear

Conclusion

We recommend continuing support towards the use of AI and emphasizing how beneficial it can be for nursing homes. With this technology more patients are ensured proper and personal care. As of now, patients don't receive as much attention because the employees are busy attending to others. If AI is implemented, Penny the Penguin will perform these time-consuming tasks which in turn enables employees to help the senior citizens that need it the most. To accomplish this goal, we encourage your support to help express the need for this technology and all the benefits that come from it.

References

The Strong Robot with the Gentle Touch." PET Imaging of Adult Neurogenesis May Contribute to Better Diagnosis of Depression and Evaluation of Drug Therapy Effectiveness | RIKEN, Riken

Sanderson, Haley. "Reporting on the Latest Innovations Impacting Seniors." Robots | Senior Tech News, SeniorTech

"Find out More about Pepper." SoftBank Robotics Homepage, Softbank Robotics, 25 May 2018

"PARO Therapeutic Robot." PARO Therapeutic Robot, PARO

Penny The Penguin

Polar Dynamics