

20. EBITEN SAMURAI - "We-care"



1. Executive Summary

As the aging population is rapidly increasing in Japan, patients with Alzheimer's and Dementia are increasing with 1 in 5.4 elderly people having such symptoms [1]. There are family nursing problems such as an 15.3% increase in family members quitting jobs to care for their elderly parents [2], while 50.2% of Dementia patients live alone from the lack of caretakers [3]. In addition, Japan faces young caregiver issues where 80% of young caregivers take care of disabled people and Dementia patients [4]. Thus, we have designed a product that attempts to support and take care of elderly people with Alzheimer's and Dementia using AR, GPS, and blockchain technologies. Our product is a pair of glasses with AR technology, synced with a smartphone application.

2. Mission

Our company will solve young caregiver issues, family members' job quitting issues due to caring elderly, and the lack of care elderly people with Alzheimer's and Dementia receive when living alone, while increasing their independence.

3. Product/Service Description

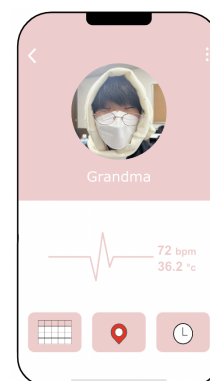


I-care glasses aim to be an extension of one's body, providing a device that helps protect and support the elderly with Alzheimer's and Dementia. We offer this through two functions: 1) Gamified Daily Activities and Medical Assistance care (*I-care* glasses), and 2) the connection to family through the *U-care* App.

The latest AR technology allows one to see a gamified reality, where the world we see is enhanced through a game-like experience. It provides the user with reminders of things they need to do in the form of tasks or missions, giving the user incentive to work on them. The notifications and checkups that they get depend on the location they are in within the house such as "Turn off the fire" when the individual leaves the kitchen area through the GPS technology in the glasses. It asks the individual "What should you do?" before giving them an instructive notification so that the individual goes through their own memories and thoughts, to prevent the worsening of Alzheimer's or Dementia.

Medical Assistance is achieved with medicine notification and safety check features. Medicine notifications are given through AR as 52.5% of people with Alzheimer's or Dementia experience forgetting to take prescribed medication [5]. The safety check features are GPS detection, Heart Rate and Temperature Monitoring, and Automatic Fall Detection through the sensor on the temple tips of the glasses. When an emergency such as heart failure or a fall is detected, a notification is sent to the family through the *U-care app* as well as a call to the ambulance. If so, the glasses will automatically display the user's Non-Fungible Digital Identification Data(NFDID) so that the individual can receive the right assistance with the arrival of an ambulance. This information is stored in blockchain technology to keep the individual safe from cyber hacking.

I-care is paired and linked with the smartphone *U-care app*, allowing family members of the user to monitor their GPS and set up tasks and objectives that they need to complete at a given time. The notification and setting can be matched to the individual and the severity of their memory impairment. The GPS technology allows the family to get notified when the users leave the house to prevent the common issue of the disappearance of people with Alzheimer's or Dementia.



4. Target Customer/Marketing

The target market is family members who have elderly relatives with onset Alzheimer's and Dementia. In Japan, the elderly make up 29.8% of the population, which is expected to rise due to a decrease in the birth rate. This will require the younger generation having to look after their parents or grandparents on a daily basis [6]. Thus, we will appeal to and advertise to the Japanese younger generation through social media by ensuring that they will be able to look after their parents from a distance, while the elderly will continue living on their own without becoming overly dependent on their families. Unlike smart watches and other wearable products, this product that enhances user experience through AR will be at an advantage as there are no products in the elderly product market where AR or smart glasses are in use at the moment [7].

5. Financials

JPN ¥			
Price	49,800		
Target Audience	4,000,000		
Market Penetration Rate Per Year	0.10%		
JPN ¥	yr 1	yr 2	yr 3
Revenues	¥199,200,000	¥398,400,000	¥597,600,000
Start Up Cost	¥122,400,000	¥0	¥0
Software Development Cost	¥122,400,000	¥0	¥0
Expenses	¥171,600,000	¥295,600,000	¥419,600,000
Hardware Material Cost	¥60,000,000	¥120,000,000	¥180,000,000
Units sold	4000	8000	12000
Unit price	¥15,000	¥15,000	¥15,000
Hardware Manufacturing Cost	¥60,000,000	¥120,000,000	¥180,000,000
Unit price	¥15,000	¥15,000	¥15,000
Maintenance Cost	¥51,600,000	¥55,600,000	¥59,600,000
Profit/loss before tax	-¥94,800,000	¥102,800,000	¥178,000,000
Income tax	¥0	¥30,840,000	¥53,400,000
Net profit	-¥94,800,000	¥71,960,000	¥124,600,000
Funding required	¥100,000,000	¥0	¥0
Cash balance	¥5,200,000	¥71,960,000	¥124,600,000

The number of target audience is calculated based on the population of Mild Cognitive Impairment (onset Alzheimer's and Dementia) patients in Japan [8]. Software development cost includes labor cost for system engineers and blockchain engineers. The cost will be reduced by outsourcing the manufacture of hardware. We will make a profit from the

second year and will require funding of ¥100,000,000.

6. Conclusion

Our system will help prevent Alzheimer's and Dementia from exacerbating while lessening the pressures and the burden of caregiving including the constant attention that the families are required to give.

By adopting this system, we can achieve one of the Sustainable Development Goals: Good Health and Well-Being for all. We will be able to create a society where the Quality of Life increases for the elderly. The elderly generation will be able to be more capable of taking care of themselves, and lessen the societal and familial pressure on the younger generation and allow them to raise their QOL as well.

7. References

- [1] “認知症はどれぐらい?” 公益財団法人生命保険文化センター, lifeplan/lifesecurity/.html
- [2] “介護の離職率が高い? その理由と働きやすい職場を見分けるポイントを解説!” きらっコノート, <https://kiracare/article>
- [3] “一人暮らし認知症高齢者の生活状況等の実態に関する研究.” 川越雅弘, 南 拓磨, <http://mhlw-grants.jp>
- [4] “【若年介護者へ調査 | 深刻化するヤングケアラー問題】8割超が、認知症や障がいを持つ家族の介護により「やりたいことが制限されている」と回答.” 株式会社アニスピホールディングス, <http://prtimes.jp>
- [5] “高齢者の内服に関する実態調査” status-of-drug-administration
- [6] “統計からみた我が国の高齢者—「敬老の日」にちなんで—.” 総務省統計, <https://www.stat.jp>
- [7] “How Smart Glasses Could Change Healthcare Delivery.” Doug Bonderud, <http://healthtechmagazine.net>
- [8] “認知症とは”, 健康寿命ネット <http://www.tyojyu.or.jp>