



Development of Serious Games for the Elderly People

(Hoseo World Class 2030)

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Speaker : Kyung Sik Kim (Kane)



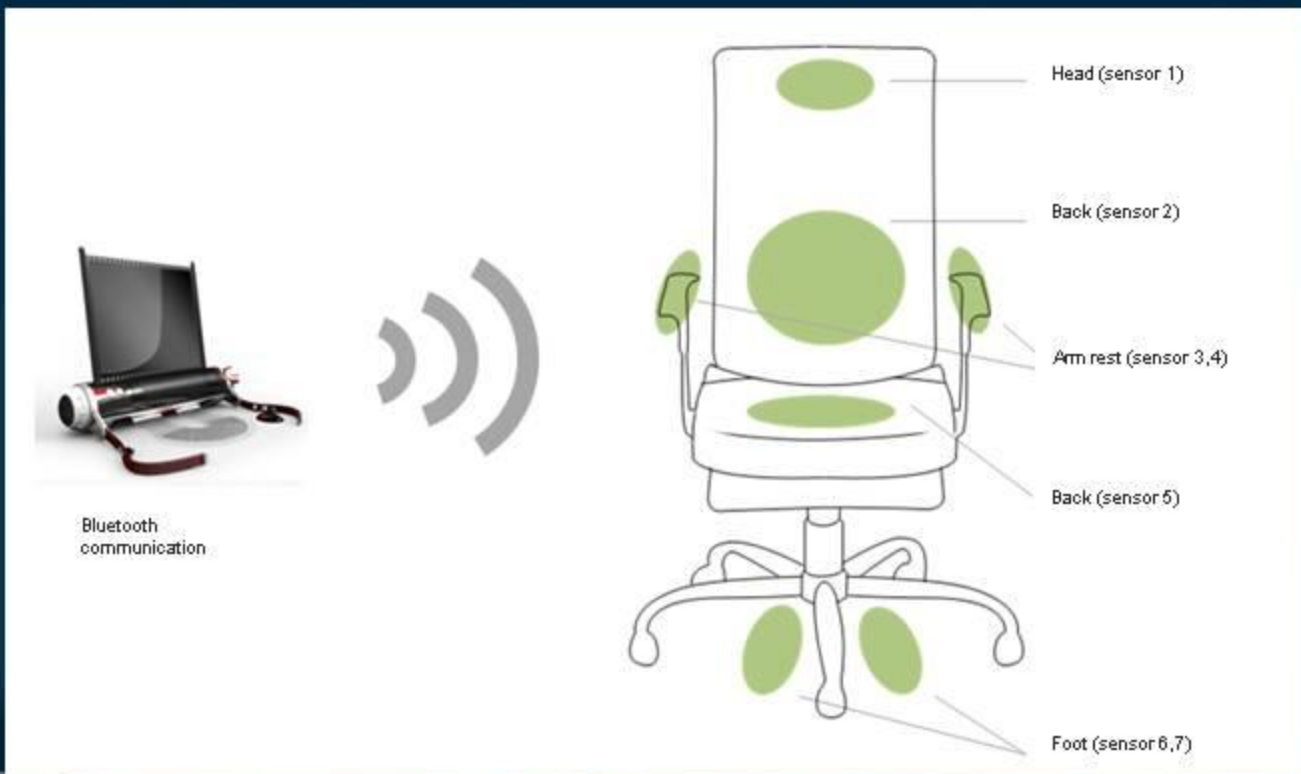
Contents

- 1 Games on the Chair
- 2 Games on the Table
- 3 Games with Neuro Headset
- 4 Games for Mild Cognitive Impairment
- 5 Development of Game Interfaces
- 6 State of the Art of Senior Industry



1. Games on the Chair

- The chair have been equipped with sensors to work as controller like the mouse
- Easy control in the sitting position





1. Games on the Chair

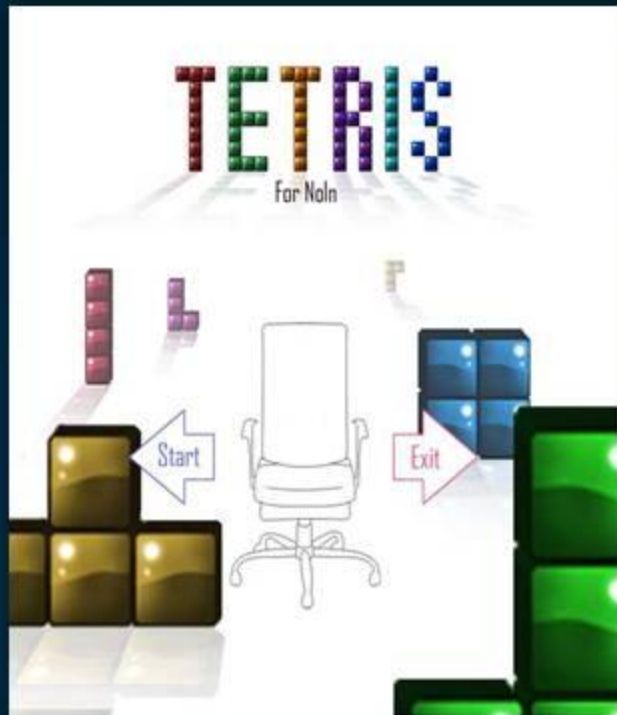
- **Player can control with arm stays and heap and foot board**
- **Effect:**
 - **Improve balancing by left & right movement**
 - **Improve leg muscles by sitting up and down**





1. Games on the Chair

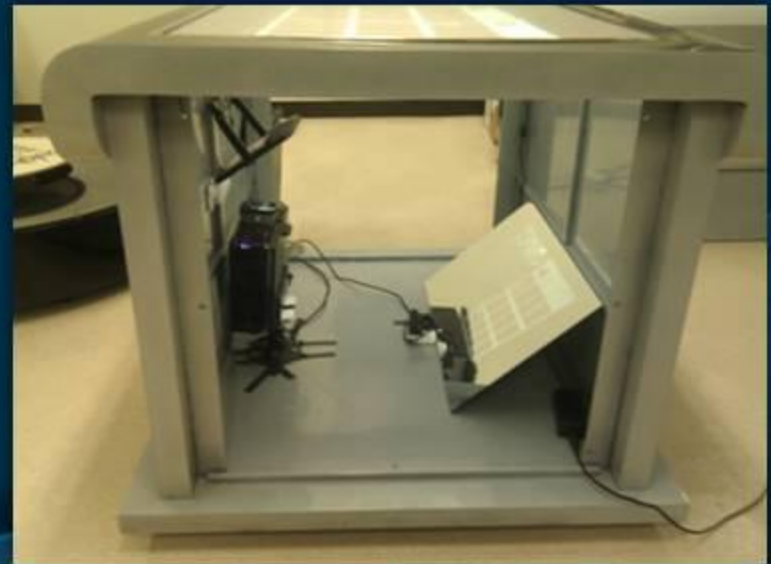
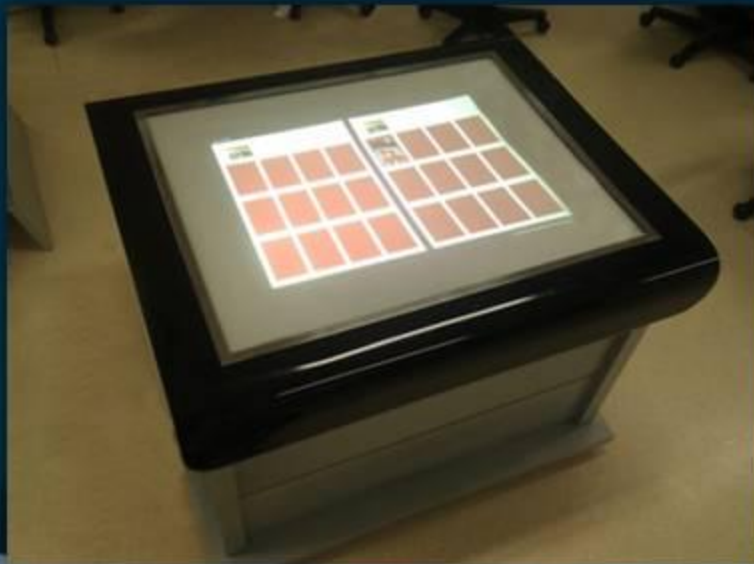
- Game 1: TETRIS – controlled by the chair
- Game 2: Gulleong Iron (an old game in 1960s in Korea)





2. Games on the Table

- **We have developed an intelligent touch table to access computer with 3 games**
- **Effect:**
 - **Easy access by tapping finger on the screen**
 - **Cooperation with people around the table**



2. Games on the Table



- Game 1
 - Instantaneous reactionary force
 - focusing intention
 - improvement of memorization



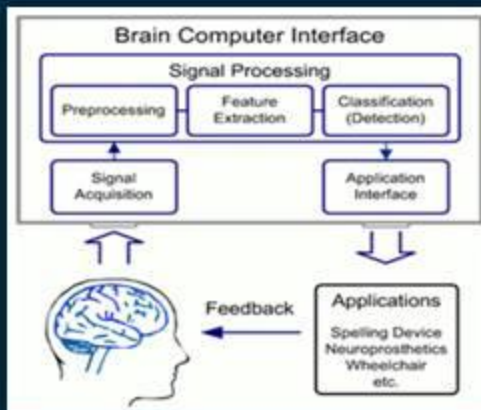
- Game 2
 - concentration by memorization



- Game 3
 - improvement of concentration and ability of memorization

3. Games with Neuro Headset

- The neuro headset gives 2 signal values of alpha for the concentration and beta for the calmness of body
- The games are controlled by these 2 signals



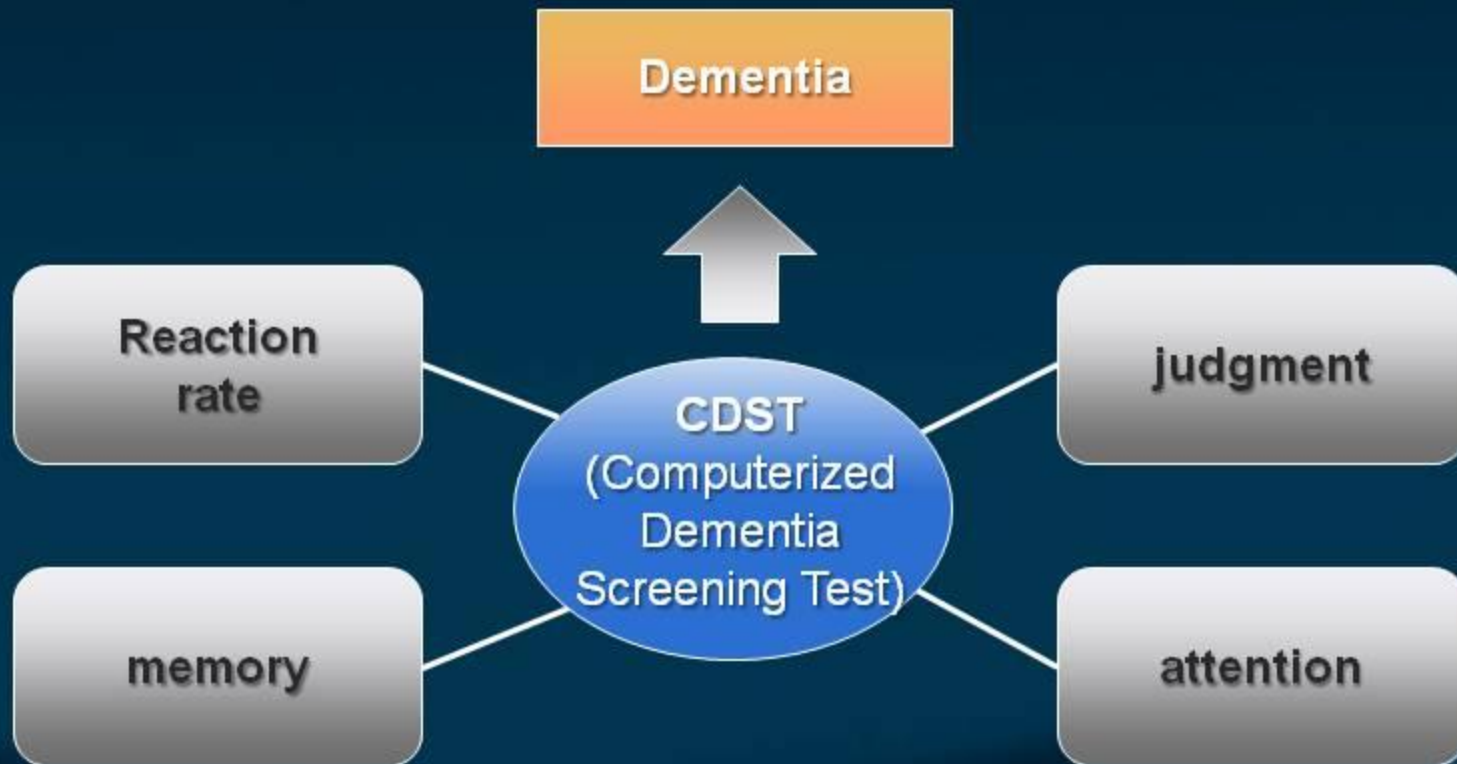
3. Games with Neuro Headset

- The games are controlled by mind and thinking
 - **Archery**: Shooting an arrow in concentration
 - **Ski Jump**: Speed with concentration upto jumping
Landing with calmness



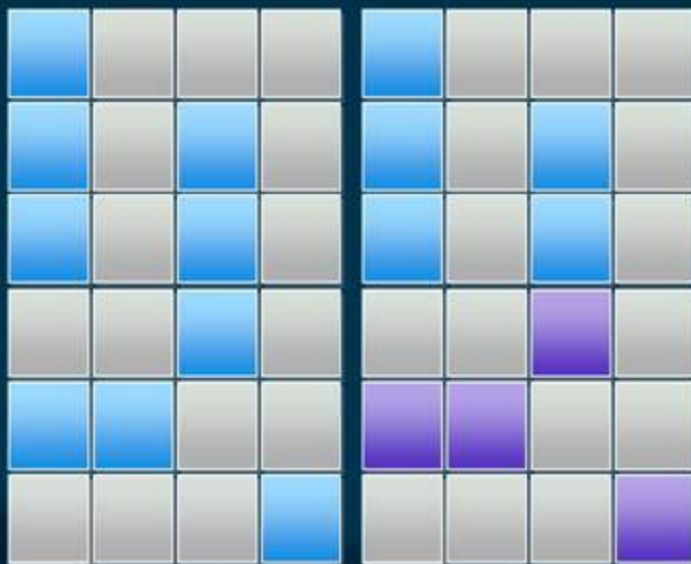
4. Game for Mild Cognitive Impairment

- We are using computerized dementia screening test



4. Game for Mild Cognitive Impairment

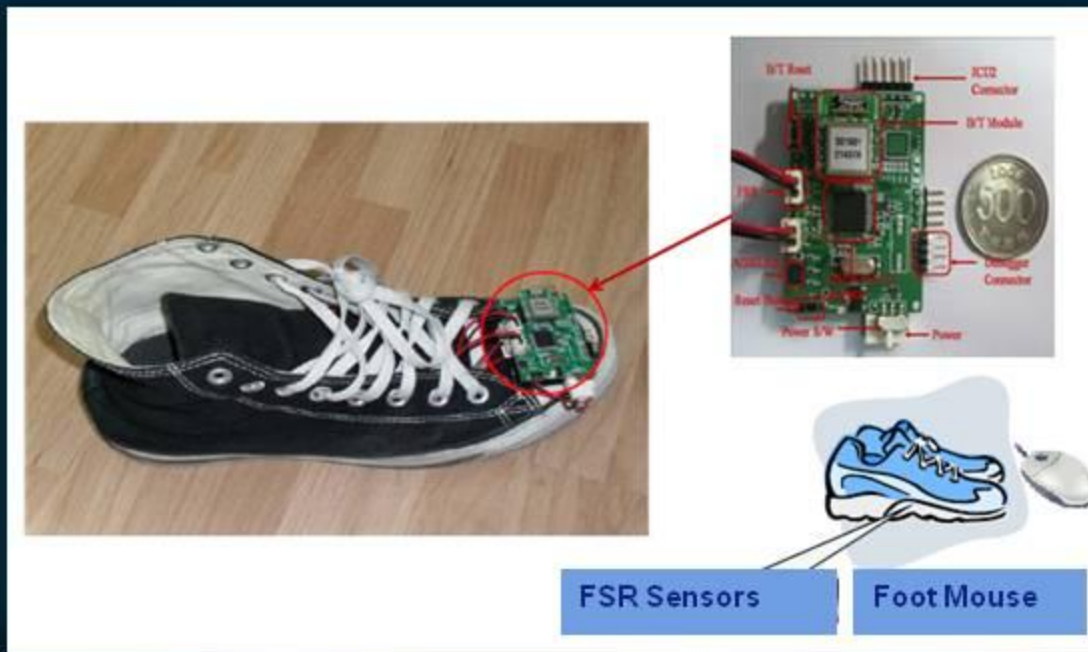
- **Test using touch screen**
 - **Reaction speed**
 - **Ability of memorization**
 - **Ability of perception**
 - **Ability of attention**



5. Development of Game Interfaces

■ Intelligent Smart Shoes

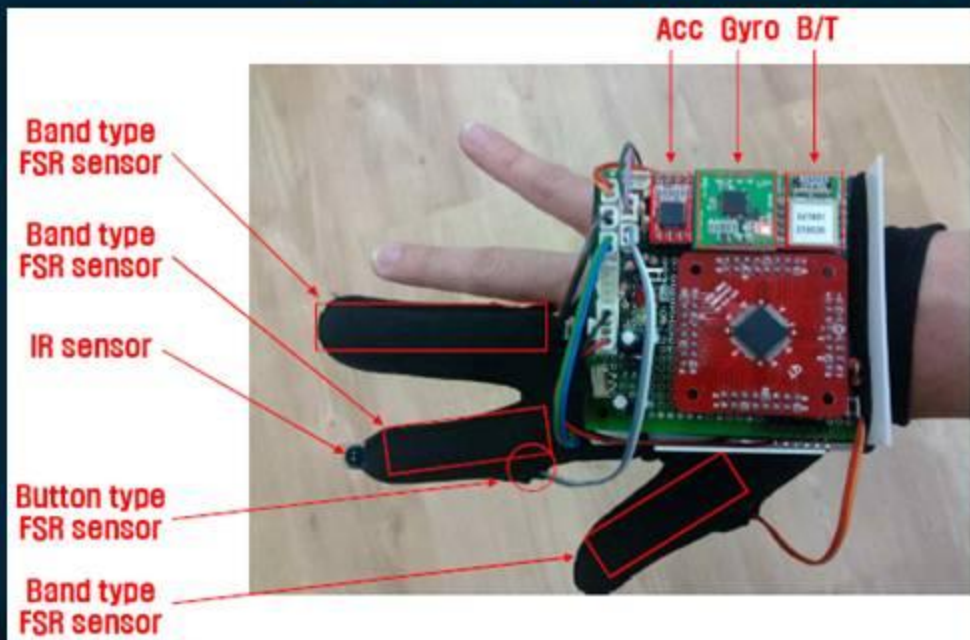
- Can sense foot gestures using an accelerometer and FSR sensors



5. Development of Game Interfaces

■ Magic Hand

- **Glove with multiple sensors such as IR, FSR, accelerometer and gyroscope**





6. State of the Art of Senior Industry

- **Older Population in Korea**
 - **It is growing rapidly year by year since 1990**
 - **It went beyond 7% which means an aging society**

	1960	1970	1980	1990	2000	2002	2019	2020
Total population (thousand)	25,012	32,241	38,124	42,869	47,008	47,639	50,618	50,650
Over 65 years old (thousand)	729	991	1,456	2,195	3,395	3,772	7,314	7,667
Senior rate (%)	2.9	3.1	3.8	5.1	7.2	7.9	14.4	15.1

6. State of the Art of Senior Industry

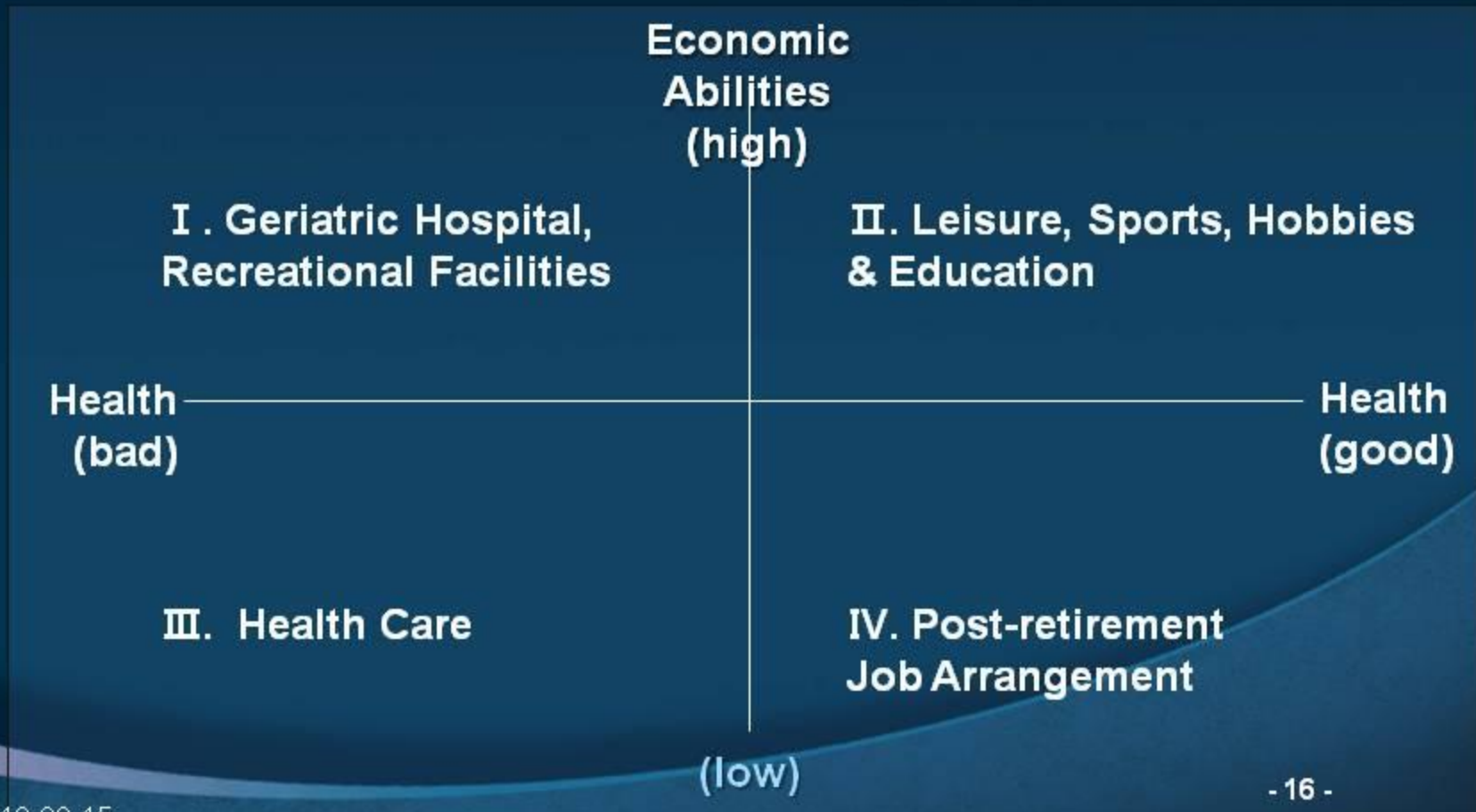
- **Senior Industries in Korea**

- **Total revenues were 25 thousand million USD in 2005**

Area	Service	Class	Items
Housing	Institutional Service	Residential Facility, Home Care service	Private Nursing Home, 3-generation House, Care service, Meal Service, Welfare Equipment
Health	Medical Supply	Hospital, Pharmaceuticals,, Medical information, Dispatch	Geriatric Hospital, Senile Disorder Medicine, Hospital Management, Medical Information, Medical Personnel Dispatch
Entertainment	Entertainment Service	Social Activity, Asset Management	Employment, Educational Sports, Entertainment
Finance	Financial Service	Annuity insurance, Asset management	Public Insurance, Private Insurance, Long-term care Insurance, Trust, Annuity Insurance, Real Estate Management
Living	Living Goods	Apparel & Foods, Living Goods	Casual Clothing, Formal Clothing, Patient Gown, Health Food, Favorite Food, Home Appliances, Commodities

6. State of the Art of Senior Industry

- **Senior Industry Market**
 - **Division for economic abilities and health**





Thank You !