LEE LI MING PROGRAMME IN AGEING URBANISM

Video Games for Seniors

Recreational Initiatives for Seniors[1]

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The first generation of video games appeared in the 1970s, and as games have evolved with technological advances, so too have their market audience. Older people are taking up video gaming as a way to keep mentally, physically, and socially active. About 26% of gamers in the United States are over the age of 50. Gamers aged 65+ play more frequently compared to gamers aged 18-64, with 36% of seniors reporting daily or near daily gaming activity compared to 19-20% in the younger group. On the other side of the globe, 49% of Australians aged 50+ play games with the primary goal of keeping their mind active.

[1] This is an evolving database. We will be adding more examples and cases over time.

Realigning Target Demographics

Video Game Centres as Social Hubs in Japan

Video game centres and arcades in Japan have seen their traditional customer base – children and teenagers – shrink. The industry attributes the decline to falling birth rates and the rapid spread of smartphone games. However, the industry has been on the uptick in recent years thanks to interest from senior citizens.

Older people are looking beyond conventional past-times such as *shogi* chess and origami art, choosing instead to spend time (and money) at video game centres. For some seniors, playing video games is a way to combat boredom. For others, video games are an accessible activity that affords opportunities for socialisation.

Kazuko Matsuo, now in her 80s, started playing when she stumbled upon a game centre. She had stopped playing gateball a decade ago after hurting her back, and had been looking for a new hobby ever since. Matsuo enjoys giving the prizes she wins from games to her neighbours. Teruo Kataoka spends about 6 hours at the arcade every other day to stimulate his mind. He enjoys playing the more analogue games, which resemble Las Vegas slot machines. It is a preference shared by many older gamers.

Box 1 provides some practices which the video game industry has adopted to serve their new customer base better.

Box 1: Practices for Adapting the Games Industry to an Older Audience

- **Replacing game prizes** – Prizes such as stuffed toys and sweets have been replaced with products including agricultural produce such as sweet potatoes and cooking oil.
- **Learning about the elderly** – Capcom, a major game software developer, has been sending its managers to visit nursing care facilities to learn how to handle wheelchairs and teach seniors how to use game machines.
- **Creating social spaces** – The Rakuichi Rakuza chain has benches set up in their arcades so customers can sit and chat, preventing them from becoming too absorbed in playing games alone.
- **Going low-tech** – Sega Corporation, another major game developer and publisher, uses paper cards to collect stamps from frequent players, instead of electronic data points on smartphones.
- **Senior Days** – Sega arcades have senior days in a bid to actively court older players.

Source: *Video game centers becoming social hubs for Japan's elderly;* http://www.japantimes.co.jp/news/2015/12/29/national/social-issues/video-game-centers-becoming-social-hubs-japans-elderly/, Accessed 25 May 2017; *Japan's older generation turns gamers*, http://edition.cnn.com/2012/02/08/world/asia/japan-older-gamers/, Accessed 6 June 2017.

Day visitors to Kaikaya – a nursing home in suburban Tokyo – can choose from a range of activities including physiotherapy, lunch, and a selection of arcade and video games. Facility staff post leader boards on the walls and run competitions every few months to see who is the "most vigorous". Kaikaya is wholly owned by Namco Bandai Games, the company behind the hit 1980s arcade game PacMan.

Developing Games for a New Purpose

While seniors have been taking up games designed for youth, researchers and developers see the potential in developing "exergames". These are lower cost and higher entertainment value games which aim to promote physical or cognitive function.

Dokidoki Hebi Taiji II *(Thrilling Snakebuster II) by Namco Bandai and Kyushu University Hospital – Japan*

One such game is *Dokidoki Hebi Taiji II* (Thrilling Snakebuster II), a life-size version of the game Whack-A-Mole. Seated players use their lower limbs to stamp on cartoon-like snakes that pop up around them. The motion helps to strengthen leg and hip muscles, which is important for reducing fall risk. Kyushu University doctor Shinichiro Takasugi says it also increases cerebral blood flow, which may delay the onset of cognitive impairment.

Although there is limited empirical evidence about physical health benefits, the team behind the game say that the psychological benefits are undeniable. The games help to enhance seniors' moods or keep them engaged while doing rehabilitation exercises.

Rehact by Keizo Sato, Tohoku Fukushi University, Japan

Rehact was developed by physical therapist and lecturer Keizo Sato in collaboration with two software companies. The game uses Microsoft's Kinect video game motion sensor and aims to provide seniors with a high-quality exercise alternative for those who are

unable to access specialised medical facilities due to distance or cost.

Rehact players can choose from four games, each of which targets specific muscle groups. The game is designed to be enjoyable while demonstrating proper execution of exercises without the need for a therapist.

*MoCHA by A*Star's Institute of High Performance Computing – Singapore*

MoCHA stands for "Monitoring Cognitive Health using Apps" and comprises a suite of tablet games aimed at detecting cognitive decline. One such game tests the player's memory as they move around a 1970s-themed town to complete errands. Due to the built-in psychometric measures, players' performance on the game over time can provide indications about the cognitive health of players.

*Project for a "brain-computer interface" by A*Star's Institute of Infocomm Research – Singapore*

Another team at A*Star's Institute of Infocomm Research is developing a "brain-computer interface" which targets memory, concentration and other cognitive functions. The trial involves seniors going to a community centre where they wear headgear embedded with electrodes to track their attention span while playing computer games. Preliminary results were encouraging, showing enhanced memory and cognitive functioning in pilot studies.

Neuroracer by University of California San Francisco – CA, USA

Neuroracer was launched in 2008 as a custom-designed, closed-loop video game where players are challenged in a high-interference 3D environment requiring multitasking abilities. Adaptive algorithms challenge players on two tasks simultaneously. Results from a series of studies involving older adults showed cognitive improvements in vigilance and working memory after a month of gameplay. The game is currently undergoing development and clinical trials for use as a diagnostic tool for Alzheimer's disease and as a therapeutic treatment for ADHD, depression, cerebrovascular dementia, autism and traumatic brain injury.

Sources:

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