Innovations in Modern Ageing

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gcma.net.au

About Us

The Global Centre for Modern Ageing recently opened its doors at the Tonsley Innovation District.

The Centre and its LifeLab facility are the culmination of South Australia's leadership in the Ageing Well space over the past three years:

- Shaping the Future of South Australia – 2016
- Ageing Well Revolution – International conference 2017
- Premier's Ageing Well Entrepreneur Challenge – 2017

GCMA now has more than 1,000 industry players around the globe in its network of contacts.

Vision

By 2021 South Australia will be recognised as a world leader of modern ageing.
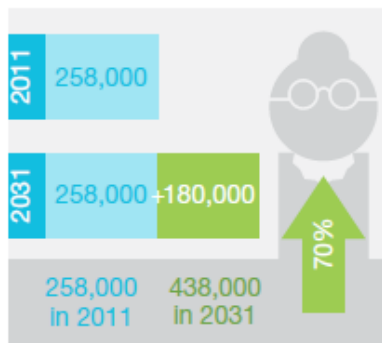
The Global Centre for Modern Ageing will create an ecosystem that empowers people, businesses, researchers and governments to seek and develop solutions that reflect the opportunities for modern ageing.

Objectives

- To shift the existing mindset about ageing so it is seen as an opportunity rather than a burden.
- To be recognised globally as a significant driver in the Modern Ageing network.
- To support businesses to develop products and services for the evolving Modern Ageing market place.
- To establish and operate a best-of-class Modern Ageing LifeLab network that delivers both economic and social projects to the highest global standards.

The context - people and places

As the State Planning Commission consultation paper on draft planning policies says, the number of people in SA over 65 is growing rapidly.

The biggest growth will be in the over 75s – with more than 100,000 extra residents by 2031 or double current numbers.

Older residents have a different household formation than younger people, as these national percentages show:

THE NUMBER OF PEOPLE OVER 65+ IS GROWING

2011: 258,000
2031: 258,000 +180,000

258,000 in 2011
438,000 in 2031

70%

Source: ABS 2011.

We know that younger people require family-size homes and older people live firstly as couples and then more than half of the over 75s are living alone. Combining this fact with ageing of the population and innovations to enable people to live independently for longer will have implications for planning policy.

Living arrangements	Age group			
	25-34	35-44	65-74	75+
Couple family with children	31.9%	58.8%	1.7%	0.6%
One parent with children	6.3%	10.2%	0.6%	0.4%
Couple only	27.3%	10.7%	46.2%	36.1%
Live alone	17.5%	14.8%	34.7%	50.5%

Source: ABS 2523.0, 2017

The context – dollars and sense

Australia is moving toward older people being more self-funded and less government-supported.

This is necessary because the ageing population is changing the dependency ratio:

	1974-75	2014-15	2054-55
Number people age 15-64 per one person aged 65 and over	7.3	4.5	2.7

This change is underpinned by the growth in superannuation, now worth $2.6 trillion.

Figure 1: accumulated superannuation savings, June 1988 to June 2016
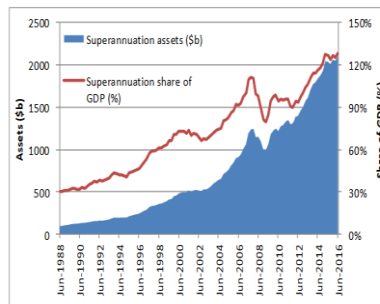
The change in the dependency ratio is important because not only will the peak-working-age cohort need to supply the extra workers to be medical practitioners and carers for the growing population of older people, but their taxes will be spread thinner in funding all of the services provided by government.

While many older people are not well-off and most have limited capacity to cope with increases in the cost of living, the next tranche of retirees will have larger superannuation balances than ever before.

In addition, the Commonwealth's introduction of Consumer Directed Care means older people now have greater choice and agency on how money is spent on them.

Innovation

Ageing of the population is a global phenomenon and innovators are working on multiple fronts to address social issues and business opportunities.

Theme areas include:
- Devices and systems to help older people remain in their homes
- New models for retirement housing
- Mobility aids
- Health and well-being technology
- Improved food options
- Community connections

The pace of advance in innovation across the globe is extraordinary.
This is being driven by the Modern Ageing movement to give older people more options to lead purposeful, productive and healthier lives and assisted by the accelerating development of the digital economy.
Without attempting to be comprehensive, I would now like to highlight some innovations which show the breadth of what is being done.

Innovations - Staying at home
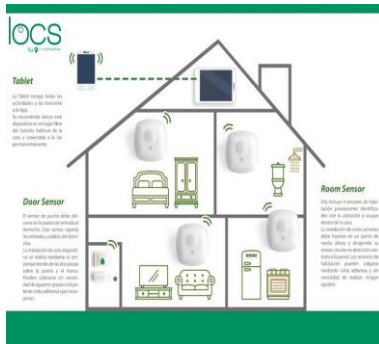
Home monitors – companies such as MimoCare in NZ, Canary Care in the UK and MySphera in Spain have developed monitoring hardware linked to phone apps. The hardware is positioned around the older person's home and monitors movement, door opens/closes, temperature, lighting, cooking appliances, etc in the home. This is linked to a mobile phone app used by a family member or carer who can check on the older person in real time and be send SMS alerts of any unusual activity. The system aims to give the older person and their family peace-of-mind.

At-home carers – health professionals such as nurses and people to assist with the chores of daily living are increasingly visiting people in their homes. Improving productivity in this labour-intensive area is vital. Finnish company E-Hoiva is among innovators achieving this using mobile phones. At the start of their shift, nurses register a mobile phone by touching it with their ID card. This enables the use of that mobile phone as a key to the customer's home. The nursing visits and customer data are automatically updated on the screen. During the work day, nurses can make emergency visits without having to collect the customer's key from the service centre. The location information enables the supervisor to see the location of each nurse, which enables summoning the closest available nurse in an emergency. This means a significant increase in customer safety.

Innovations - Staying at home

One of the common fears faced by older people at home is the risk of a fall.

Innovations tackling this problem include:

* Spanish company Technalia has a wearable device, GEA, which automatically detects falls and triggers an alert.

Innovations - mobility

The global shift to autonomous vehicles has profound implications for older people and planning authorities.
As announced by DPTI in February (http://dpti.sa.gov.au/news?a=422018) – Tonsley company SAGE Automation is working with IBM Watson and US-company Local Motors on the autonomous vehicle Olli.

Autonomous vehicles may make their first inroads in controlled precincts such as retirement villages, education campuses and shopping centres.

Innovations - mobility

People with limited mobility can manage their shopping with an autonomous shopping trolley, the wiiGO. It is an autonomous self-driven shopping trolley, designed to help people carry their purchases. On arrival at the shop, the consumer logs in to a wiiGO which uses image recognition to register that person. It then follows them around the shop.

People with limited or no vision can be assisted by an echo-location device, the Sunu band.
- Using radar and augmented reality, Sunu Band enables people who are low vision and blind to travel with confidence.
It uses sonar or echolocation to detect objects up to 5.5 metres away. Then haptic vibration feedback informs how close (or far away) the person is to obstacles.

Innovations – health and well-being

Many innovations are aimed at improving the quality of life and health of older people.
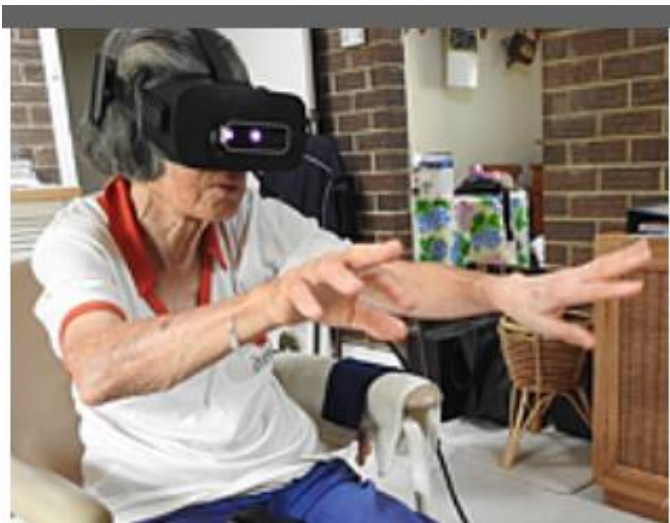

Australian initiatives include:
- **+Life.** An Adelaide-based virtual reality company that designs and creates products for rehabilitation

- **My Platinum Power** – app based product with daily interaction to improve sense of well-being by engaging questions on themes

- **Maggie Beer Foundation**: Appetite for Life – improved products, cooking demonstrations and more for older people

- **CleverTar** - human-like virtual characters who can be programmed to talk to the end user in multiple and complex tree-branching conversations.
It can be used for management of chronic conditions and other applications.
The project is supported by Flinders University, Melbourne University and health providers.

Innovation - robots

The age of service robots to assist people at home or in aged care is only just beginning.

Say g'day to Kompai – and then go for a walk. is a service robot developed by Robosoft, a company founded in India. It can assist with managing medical data, provides information and entertainment, can connect to telephony and be used as a walking aid.
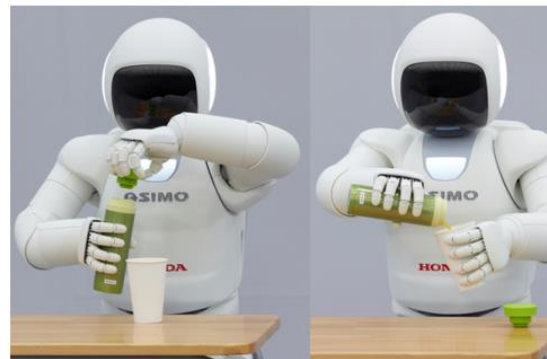
ASIMO – Advanced Step in Innovative Mobility – has been developed by Honda Robotics. It can perform a range of human-like tasks such as serving food and drinks, communicating in sign language and listening to several different people talking at the same time. ASIMO is becoming increasingly autonomous, adjusting its behaviour to changes in behaviour of humans. ASIMO evaluates inputs from multiple sensors that are equivalent to the visual, auditory, and tactile senses of a human being. It can then respond to the movement of people and the surrounding situations. For instance, ASIMO will stop its current action and change its behavior to accommodate the intention of the other party.

Innovation - IoT

Japanese company Seven Dreamers has developed Laundroid – a device which combines image recognition, artificial technology and robotics.

Users load dry washing into the bottom drawer of the Laundroid, about the size and shape of a conventional wardrobe.

The Laundroid sorts the clothes into different types of garment – shirts, blouses, pants, etc – and into whose clothes they are – man, woman, child.

They are then folded and stacked robotically.

Seven Dreamers has now partnered with AirCloset using a phone app. The Laundroid registers how frequently a garment is being used and then employs AirCloset technology to make fashion suggestions about how it might be combined with other garments.

Seven Dreamers is also partnering with Cerevo – an internet-of-things pioneer. A Cerevo device using Google's Alexa will be integrated with Laundroid to command it by voice.

At around $US16,000 a pop and taking 5 to 10min to sort, fold and stack each garment, laundroid is neither cheap nor quick. But it demonstrates the extraordinary advances being made in technology to solve basic household chores and make it possible for people with diminished physical ability to live at home longer.

Innovations - community

Many innovators are developing products which use digital systems to build communities.

Australian examples include:
- **CareApp** – developed in Adelaide, a user employs a mobile-phone app to build their personal network of connected carers, medical practitioners and supporters
- **ACH Group – Exchange** – an on-line community co-ordinating activities, educational opportunities and the like.
- **Cherished Pets Community Veterinary Care** – a web-based network where older citizens can engage veterinarian services, home pet carers such as dog walkers, respite and emergency pet care.
- **Future Smith** – a web-based network of volunteering communities and opportunities.

Community Veterinary Care

Residential options

As well as the sheer increase in numbers of older people requiring accommodation suited to their needs, planning authorities should be aware of changes in business models.

Points to consider include:
- Ownership of Aged Care residential facilities
- Vertical or horizontal retirement
- Community/co-operative housing
- Luxury or basic accommodation

Ownership

Ownership of Aged Care residential facilities is currently highly fragmented but may see consolidation over the medium term.

As at June 2017, Aged Care residential services' ownership nationally was:
- 55% - not-for-profits (charitable, religious, community)
- 40% - private, for-profit organisations
- 5% - government (state, territory and local)

No individual operator held more than a 5% market share and nearly two-thirds of players only operated a single facility.

Private, for-profit organisations are increasing their market share at the expense of not-for-profits.
In the past five years alone, for-profits increased their market share from 36% to 40% and this trend is expected to continue.

The largest player is BUPA, followed by DAC Finance and Regis Healthcare – each with a market share of 3% to 4%.

The industry has revenue of about $25 billion a year and is growing at more than 5% per annum.

Federal government policies aim to increase provision of home-care services and thereby decrease demand for aged-care places.

Source: IBISWorld

Going up

Growth in the proportion of the population choosing to live in apartments rather than detached dwellings is being echoed in retirement and aged care facilities.

Most retirement villages are still horizontal/broad-acre but the mix is changing. In 2015-016, the national picture was:
86% - horizontal; 9% - vertical; 5% - mixed.

Recent vertical development projects include:
Adelaide - U-City - Uniting Communities project on Pitt/Franklin with 41 retirement-living apartments, integrated in a mixed-used, 20-storey building.
Sydney – Aveo at Mosman; Australian Unity at Bondi
Melbourne – Australian Unity at Carlton.

Source: Colliers International

Innovation - high end

Taste luxury aged care at its best

TOUR & FREE MORNING TEA EVERY THURSDAY

"a look and feel in keeping with the surrounding resorts and hotels"
- Architectural firm thomson adsett describing an award-winning Gold Coast development

Growing wealth of cohorts of retirees is increasing demand for luxury aged care.

Household mean net worth by age group

	45-54	55-64	65-74	75+
2015-16	$1.16m	$1.3m	$1.33m	$1m
2005-06	$725,000	$824,000	$666,000	$563,000

Source: ABS, 6523.0

Compulsory super and the rise in the price of real estate has made significant numbers of retiring-age Australians wealthier than ever before.
Median household wealth of over 65s has doubled in a decade.
This has contributed to demand for luxury Aged Care facilities.

Note:
Picture is from website of the Kawana Waters Aged Care Residence on the Sunshine Coast operated by TriCare
Quote is about Cypress Gardens Aged Care Residence on the Gold Coast operated by TriCare

Innovation - Co-housing

The Co-housing business model involves residents intentionally joining together to form a retirement community under their own ownership.
There are many Co-housing projects in Finland, Sweden, Denmark, Germany, United Kingdom, Netherlands, United States

As with conventional retirement villages, there are private and shared spaces – but in co-housing manage their own community, looking after maintenance and development, running finances, and organising shared activities.

Ownership may be through a co-op or company structure rather than having an independent owner or supplier.
Decisions can be made by consensus or by voting power of shares held in the title-holding company.
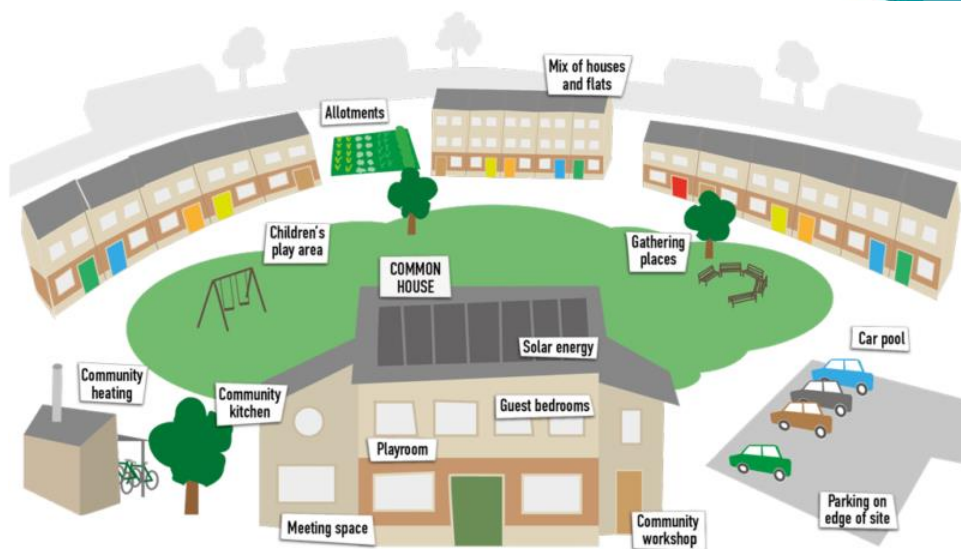
There are a number of co-housing projects around Australia based on communities with shared interests such as eco-sustainability or religious beliefs but this is now expanding into Aged Care. The AGEncy project in Sydney is centred on the inner west suburb of Balmain. Members mostly already own their own homes but are joining together to buy common facilities.

Where we fit in

The Global Centre for Modern Ageing has been established to play a guiding role for governments, businesses, researchers and our older citizens as these changes play out over the next decades.

We will provide:
- Research and co-design capability through LifeLab
- Mapping and networking of the Modern Ageing eco-system
- Business advisory services
- Data analysis
- Advocacy

LifeLab

Tonsley Innovation District

LifeLab @ Tonsley has simulated home or office environments for trialling new products.

- LifeLab provides a competitive advantage for companies to get better value propositions with their products and services targeted to the ageing population.
  - Citizens engaged in all projects
  - Applying state of art research and co-design methods with companies, researchers and users
- LifeLab supports finding exactly the right solutions for innovative new products and services that meet people's needs and improve elderly users' everyday life.
  - Real life of simulated settings to capture high quality data

Pilot projects

The commissioning of the LifeLab facility is well under way, with several pilot projects running with local companies and researchers.

The pilots are a mix of projects that reflect different points in the product development cycle, from idea creation to prorotyoew validation and co-design.

GCMA is working collaboratively with local service providers and researchers to plan and deliver the pilots, in an end-to-end process, which is being peer reviewed.

Project 1: University of Adelaide and Potatoes SA *Healthy Food for Healthy Ageing*

Project 2: A local start up *Rehabilitation Device for Improved Strength in Older People*

A number of large scale commercial projects are in the pipeline.

Engaging citizens

Induction of co-designers

Pilot project in progress

Engaging with boards from not-for-profit organisations

Thank you

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