

Innovating Healthcare: Surprising Business Opportunities in a Rapidly Aging Global Population

Today's Presenter



About the Presenter

Dani Bradnan

Research Associate

Dani leads the Digital Transformation team's coverage of Digital Health and Wellness. In this role, she provides intelligence and recommendations to clients through the publication of syndicated research and direct inquiry response.

Additional Information

QUESTIONS?

Use the questions box on your screen

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Today's webinar will begin shortly

Innovate Smarter & Grow Faster With Lux

The Lux Experience



ACCESS THE
LUX PLATFORM



ENGAGE WITH
EXPERT ANALYSTS



WORK WITH LUX
CONSULTANTS

ADDRESSING FOUR KEY THEMES

Emerging Digital Technologies

Foundational emerging digital technologies

Foundational technologies like AI and IoT evolve fast, and tracking evolution and differentiation here is hard. We focus on understanding what is possible with these technologies – and what's not, in order to separate the promising from the hyped.

Smart and connected products and services

AI and IoT can unlock new value from the products we build. Sensing and connectivity add a valuable data stream to products, and analytics and AI can create additional value and generate new business models. We focus on how emerging digital technologies integrate with products and the powerful value that can emerge.

Industry 4.0

Emerging digital technologies promise efficiency, cost reduction, and flexibility. Extracting ROI from these technologies is challenging, while simultaneously meeting the varied demands of customers. We track the players and solutions for technologies that move quickly from idea to value.

Innovation transformation

R&D and innovation is in the midst of a transformation. From NLP to informatics, digital tools can help us find whitespace, understand trends and key players, and iterate towards the right solution more efficiently. We examine what's possible and worth deploying.

Innovating Healthcare

Surprising Business Opportunities in a Rapidly Aging Global Population



Dani Bradnan

Agenda

- 1 | **Aging populations represent a growing business opportunity**
- 2 | Using the healthcare spectrum to identify specific opportunities
- 3 | How to develop solutions for aging populations

The world is getting older on average, with the rise of the 'super-aged' society (20% population aged >65)

Rank	Country	2015	2030
1	Japan	26.4	30.7
2	Germany	21.4	28.2
3	Italy	21.7	26.8
4	South Korea	13	23.4
5	France	18.7	23.2
6	Switzerland	18.2	21.9
7	UK	18.1	21.7
8	US	14.7	20.1
9	Australia	15	19.2
10	China	9.5	16.2

Addressing aging populations has built in growth

Your addressable market size is only expanding!

2030
30.7
28.2
26.8
23.4
23.2
21.9
21.7
20.1
19.2
16.2

A photograph of a healthy elderly woman with short grey hair and glasses, wearing a straw hat and dark overalls over a white t-shirt. She is smiling broadly and adjusting her hat with both hands. The background is a blurred outdoor setting with green foliage.

HEALTHY

A photograph showing the lower half of a person in a light blue hospital gown, standing on a wooden floor and using a silver metal walker. The person is barefoot. A portion of a grey hospital bed frame is visible on the right side of the image.

VERY ILL




This binary hides the real business opportunity

Most are healthy well over their 70s

Most are only sick towards the last 10-11 years of their lives.

Few solutions to cater to their needs in their everyday lives



Location	Median Life Expectancy	Healthy Years	Years in Ill Health
Singapore	84.8	73.6	11.2
Japan	84.0	73.2	10.8
Spain	83.0	72.6	10.4
Switzerland	83.2	71.9	11.3
Italy	82.3	71.8	10.5



This binary hides the real business opportunity

Most are healthy well over their 70s

Location	Median Life Expectancy	Healthy Years	Years in Ill Health
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Hundreds of billions, if not trillion dollar opportunity

their everyday lives

Switzerland	83.2	71.9	11.3
Italy	82.3	71.8	10.5

Agenda

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- 2 | **Using the healthcare spectrum to identify specific opportunities**
- 3 | How to develop solutions for aging populations

Applying the spectrum to aging populations

As we move from left to right on the spectrum, we see decreasing independence and mobility, and increasing symptoms of disease



**Do current
tech
solutions
address this
spectrum?**

Five different digital technologies dominate the innovation landscape for elderly care today



The Digital Toolbox

**Wearable
Devices**

**Smart
Textiles**

AR/VR

**Smart
Homes**

**Artificial
Intelligence**

Technology 1 in our toolbox: Wearable Devices



The Digital Toolbox

**Wearable
Devices**

Smart
Textiles

AR/VR

Smart
Homes

Artificial
Intelligence



Wearable devices are arguably the most mainstream of digital health tools today

Wearable devices can play a big role for elderly care as well

Smart clips and smartwatches are used mostly for senior monitoring

Go LiveClip
The Netherlands



The GoLive Clip is a wearable activity tracker from Gocety Solutions that clips on to clothing, and is also equipped with fall detection capabilities

Source: Gocety



Greatcall
San Diego, CA



Greatcall is a digital health tech company with a focus on senior demographics – it's acquisition of Lively's fall detection wristband added a wearable to the portfolio

Source: Greatcall



Mapping wearables on the health spectrum



Technology 2 in our toolbox: Smart Textiles



The Digital Toolbox

Wearable
Devices

Smart
Textiles

AR/VR

Smart
Homes

Artificial
Intelligence



Smart textiles can track various parameters in an everyday form factor

Smart textiles can monitor signs of deviation from the norm in elderly

SMART TEXTILES

Smart textiles come in a variety of form factors

SensingTex

Redmond, WA



SensingTex creates a mat that can be placed in a bed to detect ulcer hot spots. Applications such as vital sign monitoring for respiration and cough are being integrated into COVID-19 monitoring

Source: SensingTex



Sensoria

San Diego, CA



Sensoria makes garments with embedded sensors, including award winning socks that can be used to detect diabetic ulcers, location, and falls

Source: Sensoria



Mapping smart textiles on the health spectrum



Technology 3 in our toolbox: AR/VR



The Digital Toolbox

Wearable
Devices

Smart
Textiles

AR/VR

Smart
Homes

Artificial
Intelligence



AR/VR use cases are mostly in gaming

In elderly care, AR/VR can be used for emotional well-being and mental health

Virtual Reality

Virtual Reality lets elders share experiences

Rendever

Cambridge, MA



Rendever develops a VR program specifically to give elders the ability to engage with others, and experience travel

Source: Rendever



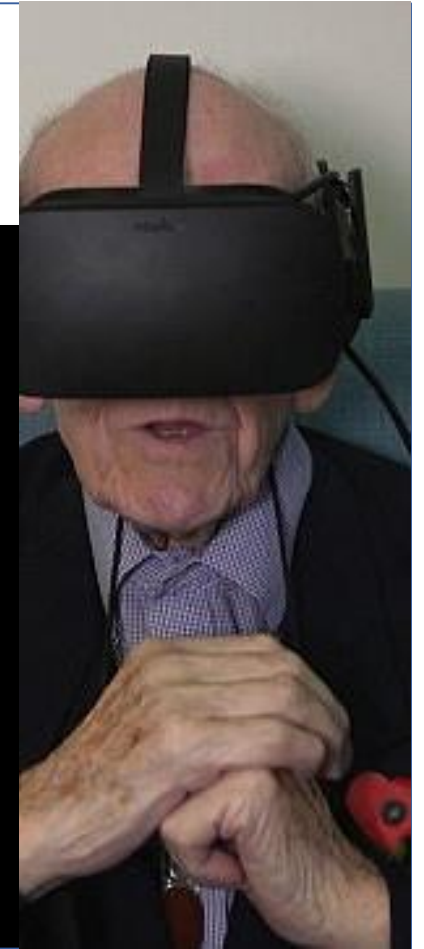
TribeMix

Hertfordshire, UK



TribeMix offers a soothing therapeutic for individuals struggling with dementia

Source: TribeMix



Mapping the five key digital health tools on the health spectrum



**Do current
tech
solutions
address this
spectrum?**

We are not applying the spectrum to aging populations

We are succumbing to a binary that does not serve the entirety of a population and blinds us to opportunity!



Healthy



At-risk



Pre-disease



Disease



Severe
disease

Agenda

- 1 | Aging populations represent a growing business opportunity
- 2 | Using the healthcare spectrum to identify specific opportunities
- 3 | How to develop solutions for aging populations**

**How can we
address the
whole
spectrum?**

Aging is not a problem, but a life stage that transcends clinical care

If '70 is the new 40', seniors are pretty much living like everyone else and have the same needs

- Careers/jobs
- Social needs
- Autonomy and mobility
- Food and nutrition



Keep focus on the left of the care spectrum

- Majority of this segment are not experiencing symptoms
- Largely independent
- Early support and diagnosis makes for better long term outcomes

Healthy

At-risk

Pre-disease

Disease

Severe
disease

**What does a
winning
strategy
look like?**

Pick a healthcare vertical

Often, ironically, this looks like a disease, but the trick is to not think in terms of solving the disease. Instead, focus on **providing the support necessary for prevention**

- Dementia
- Diabetes
- Respiratory Conditions
- Arthritis
- Blindness
- **Mental Health**
- Chronic Pain

Mental Health

- Mental Health represents a huge market, in the hundreds of billions if not trillions
- The market is largely under represented
- Mental health is an almost universal comorbidity

Solutions to Mental Health

Support a healthy lifestyle

- Nutrition
- Exercise
- Sleep
- Safety

Prevent and prolong healthy years

SUPPORT A HEALTHY LIFESTYLE

Nutrition

STRATEGY NOW:

Using available information, food options can be crafted for seniors in terms of taste preferences and nutrition requirements

STRATEGY LATER:

Develop -omics type solutions to develop elder specific nutrition needs based on genomics and the microbiome

KEY PLAYERS



Healthy

At-risk

Pre-disease

Disease

Severe
disease

SUPPORT A HEALTHY LIFESTYLE

Exercise and Sleep

STRATEGY NOW:

Smart bedding offers the ability to monitor sleep in terms of recovery, and in terms of monitoring sleeping patterns

STRATEGY LATER:

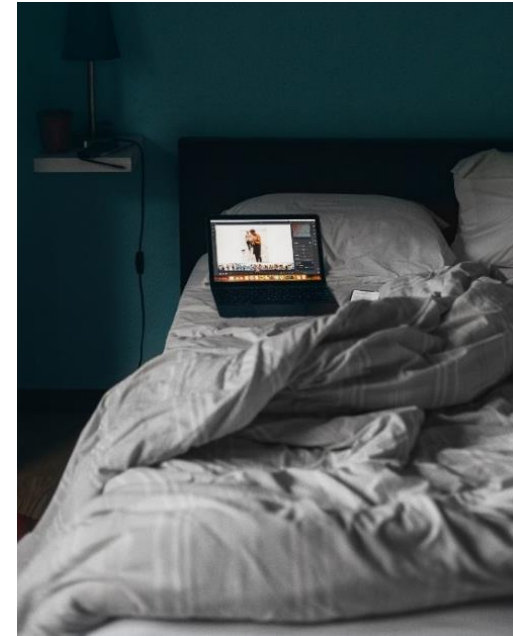
Develop smart textiles further as they aren't ready yet, and develop a solution that uses wearables input to inform nutrition choices

KEY PLAYERS

ohmatex



HEXOSKIN
HEALTH SENSORS & AI



Healthy

At-risk

Pre-disease

Disease

Severe
disease

Solutions to Mental Health

A black and white photograph of an elderly man sitting at a small wooden table outside a shop. The shop window behind him is filled with oranges and has a sign that says "SWEETENERS". The man is wearing a light-colored jacket and trousers, and is looking down at something in his hands. The text "Support a healthy lifestyle" is overlaid on the image.

Support a healthy lifestyle

A color photograph of two people sitting on a rocky shore, looking out at the ocean. One person is standing and wearing a hat and a patterned shirt, while the other is sitting in a chair. The ocean is visible in the background with waves breaking on the shore. The text "Prevent and prolong healthy years" is overlaid on the image.

Prevent and prolong healthy years

- Early detection
- Prevention
- Early Treatment

PREVENT AND PROLONG HEALTHY YEARS

Early Detection

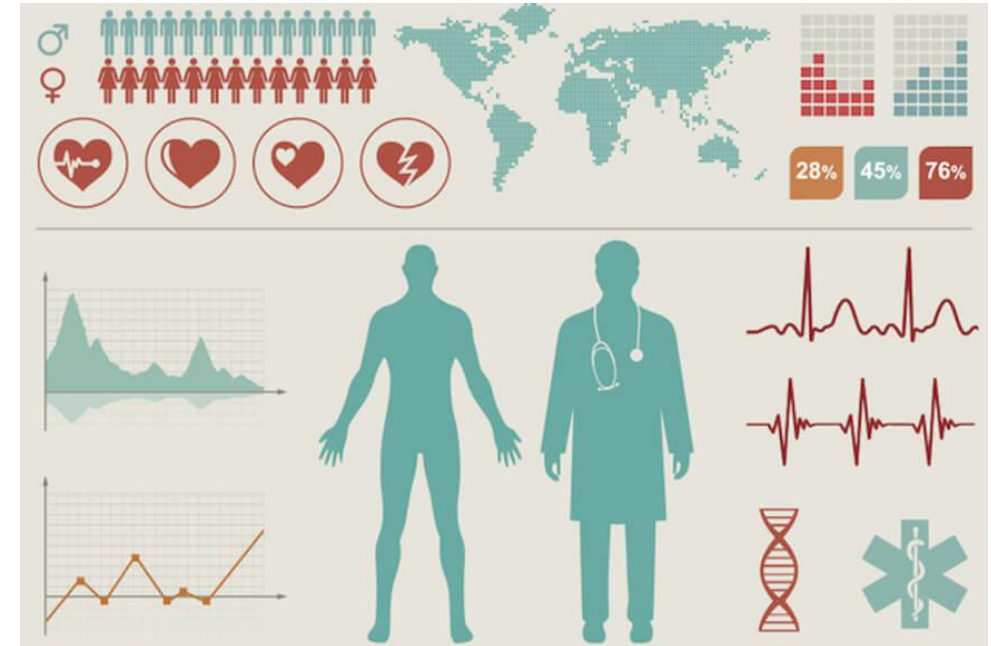
STRATEGY NOW:

Use existing AI technology to improve diagnostic protocols, leveraging companies like Winterlight Labs

STRATEGY LATER:

Invest in developing more sensitive digital biomarkers that can move the needle even earlier for diagnosing difficult to identify conditions

KEY PLAYERS



Healthy

At-risk

Pre-disease

Disease

Severe
disease

PREVENT AND PROLONG HEALTHY YEARS

Early Treatment

STRATEGY NOW:

Leverage current digital therapeutics to provide remote treatment for mental health conditions

STRATEGY LATER:

Develop new digital therapeutics and combine them with digital biomarkers for a “one stop shop” of diagnostics and therapeutics

KEY PLAYERS

Dthera
SCIENCES



Litesprite

oxfordvr



Healthy

At-risk

Pre-disease

Disease

Severe
disease

**Where are
we headed?**

Panasonic's Fujisawa City

This city has been designed to cater specifically to the needs of elders – integrating many of the technologies described here



The town covers 19 hectares, the size of four Tokyo Domes.

※The above is a conceptual image.

Healthy

At-risk

Pre-disease

Disease

Severe
disease

Key Takeaways

1

Older adults represent a significant business opportunity

Most solutions for the elderly today tackle the extreme ends of the spectrum – either diseases or healthy.

2

Current solutions do not address elders along the entire spectrum of care

Our data indicate preventive and predictive care is an untapped opportunity – focus your efforts here as you think about finding new unexplored areas to operate

3

Develop solutions that plug into senior need specific ecosystems

To win big, think beyond healthcare. Aging is not purely a healthcare matter, and holistic solutions that looks to address all of these will emerge as winner

Thank You



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