

Health is our future

Tech users day

TUANZ

Dr Lloyd McCann

Aug 21

What we'll cover

Introductions

Health – you don't know what you've got till its gone

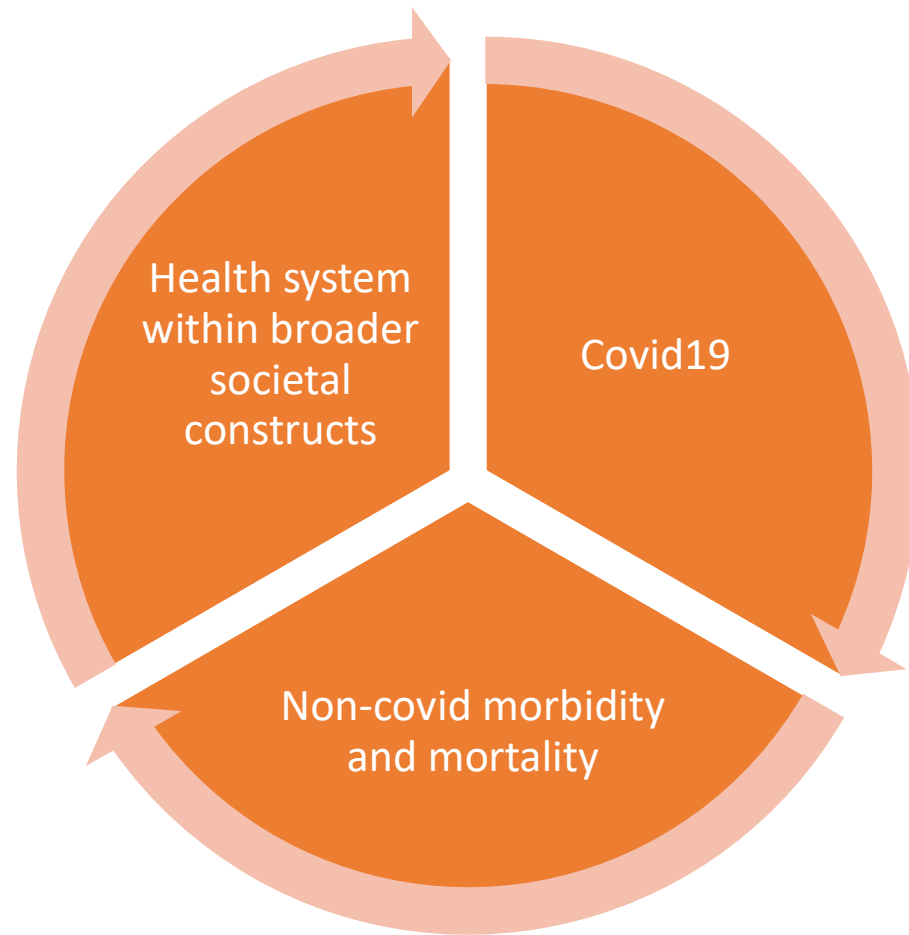
Digital evolution or transformation?

Health and Digital – what do we need to do?

What next?



Introductions



Most of countries now in recession

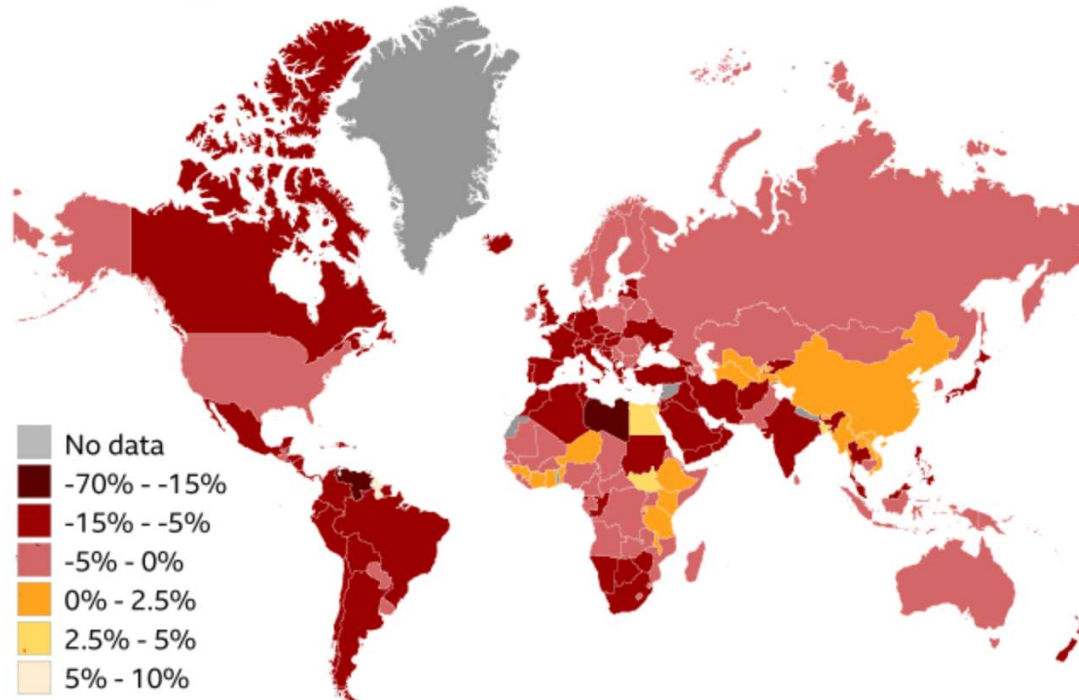
If the economy is growing, that generally means more wealth and more new jobs.

It's measured by looking at the percentage change in gross domestic product, or the value of goods and services produced, typically over three months or a year.

The IMF estimates that the global economy shrunk by 4.4% in 2020. The organisation described the decline as the worst since the Great Depression of the 1930s.

Majority of countries in recession

Real GDP growth



Source: International Monetary Fund



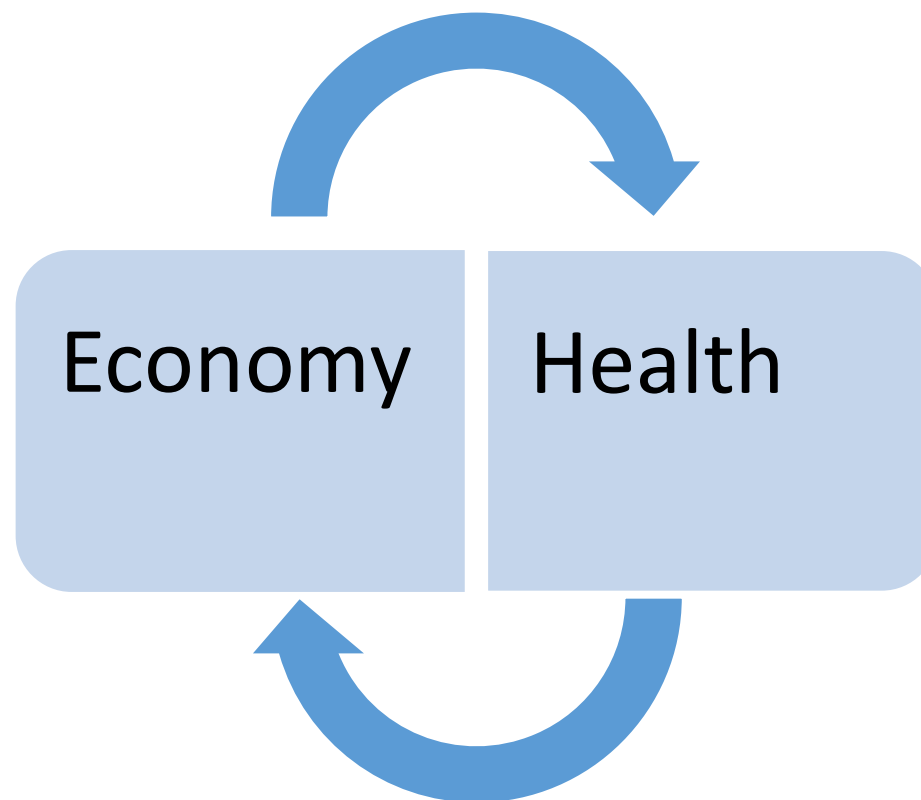
The only major economy to grow in 2020 was China. **It registered a growth of 2.3%.**

The IMF is, however, predicting global growth of 5.2% in 2021.

That will be driven primarily by countries such as India and China, forecast to grow by 8.8% and 8.2% respectively.

Recovery in big, services-reliant, economies that have been hit hard by the

Tightly coupled



Why?

Covid

Consumerism

Value-based care

Ageing population and burden of chronic disease

Workforce

Affordability and sustainability

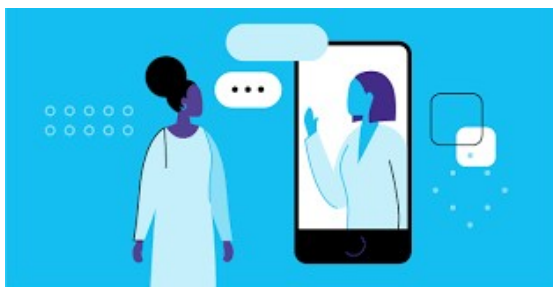
Equity

Digital (Adoption, disruption, creaking, transformation etc)

NZ Health and Disability System review / Health reforms

We live in an imperfect world...

Change... but it's difficult



Telehealth



Contact tracing



Hand hygiene / Vaccination





Home > Our work > Digital health > Other digital health initiatives > National health information platform

Digital health

Digital Health Strategic Framework

DHB digital systems landscape

Maturity assessments

Monthly reports

Regional IT foundations

Vision for health technology

Other digital health initiatives

Decommissioning of faxes

Patient portals

National health information platform

Sponsored Data initiative

eMedicines

Telehealth

Digital health sector architecture, standards and governance

Health ICT investments

Data & Digital update

News and updates

Digital health stories

Digital enablement

Hira (National health information platform)

Better data, better access, better sharing, better health and wellbeing

A Ministry of Health team is working in partnership with consumers, the health and disability sector, and technology providers to deliver an ecosystem of data and digital services known as Hira.

Hira is a te reo Māori word that means 'to have a significant bearing on future events', and to have a 'widespread effect'. The name speaks to the Hira promise of enabling better health outcomes for all New Zealanders.

Hira will enable a whole new way for a person's health information to be accessed and updated. It will transform the way people interact with health services and use their health information.

Consumers will be able to access and control their health information through their choice of website or application using a digital device such as a smartphone, tablet or computer. Change and adoption is a significant focus for the programme and we will also consider what options exist for people who don't have access to, or prefer not to use, technology.

Hira is a critical enabler of the Government's upcoming reforms of the health and disability system. The scope for Hira will be continually reviewed as planning for the implementation of the reforms continues.

Better access to health information – anywhere, anytime

Hira will enable access to a virtual electronic health record by drawing together a person's latest health data from trusted sources.

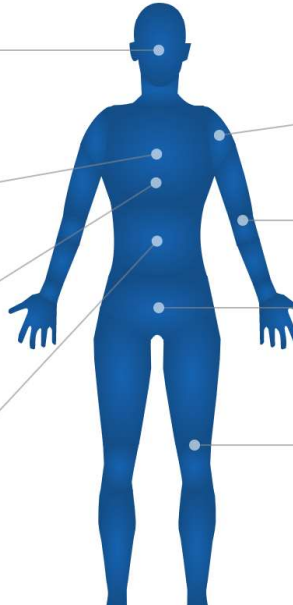
Hira is focused on:

BOOK AN APPOINTMENT

Single Scan Multiple Scans / Body Parts

- X-Ray
- Ultrasound
- CT**
- MRI
- Mammography
- Bone Density/DEXA
- PET CT
- Nuclear Medicine
- Radioligand Therapy
- Biopsy
- Image Guided Injection
- Fluoroscopy

Select a body part



Head and Neck
Brain
Facial Bones
Temporal Bones
Sinuses

+ Chest
+ Spine

Head, Neck, Chest, Abdomen & Pelvis
Neck, Chest, Abdomen & Pelvis
Chest, Abdomen & Pelvis

Abdomen & Pelvis
Pelvis (MSK)
AAA/Angiography

+ Shoulder
+ Arthrogram

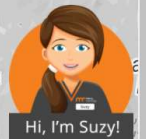
+ Elbow
+ Wrist
+ Hand

+ Renal/Kidneys
Adrenals
Enterography
Colonography

Legs
+ Knee
+ Ankle
+ Foot

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New smart contact lens for diabetics introduced

Date: February 22, 2018

Source: Ulsan National Institute of Science and Technology (UNIST)

Summary: A team of researchers has developed a new biosensing contact lens capable of detecting glucose levels in patients with diabetes.

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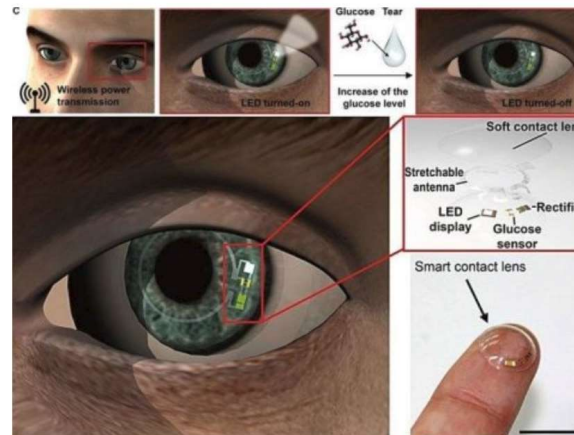
Health & Medicine

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- > Diseases and Conditions

Matter & Energy

- > Consumer Electronics
- > Civil Engineering
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- > Optics

FULL STORY



The new smart contact lens, capable of monitoring glucose levels in tears.

Credit: Usage Restrictions

A team of researchers, affiliated with UNIST has recently introduced a new biosensing contact lens

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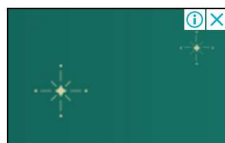


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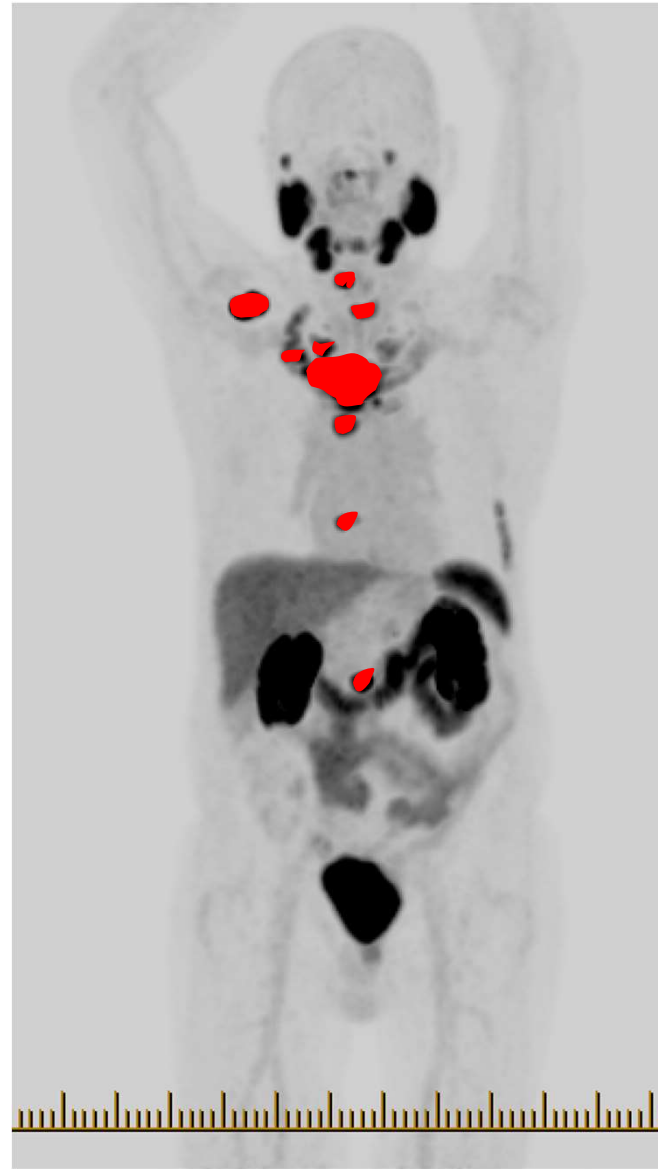
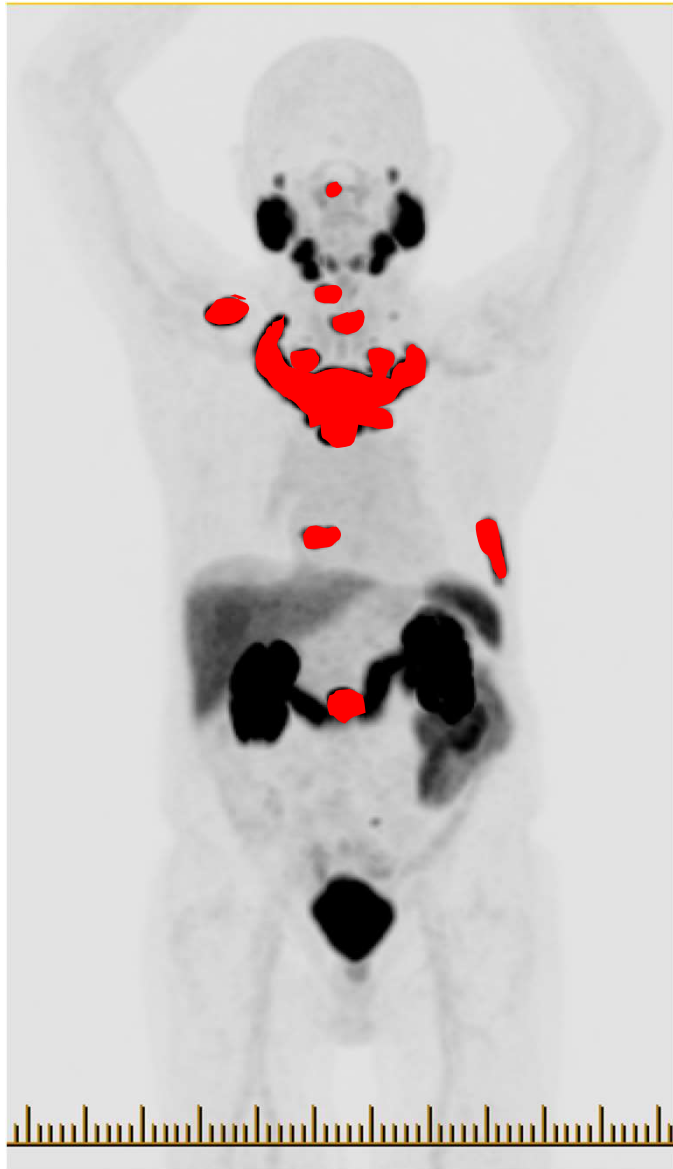
A battery pack worn as a backpack powers the exoskeleton for up to eight hours.

A battery pack worn as a backpack powers the exoskeleton for up to eight hours. An app can be used to track the patient's walking data. SuitX has mainly worked with patients with spinal cord injuries, who can use the Phoenix to walk again.

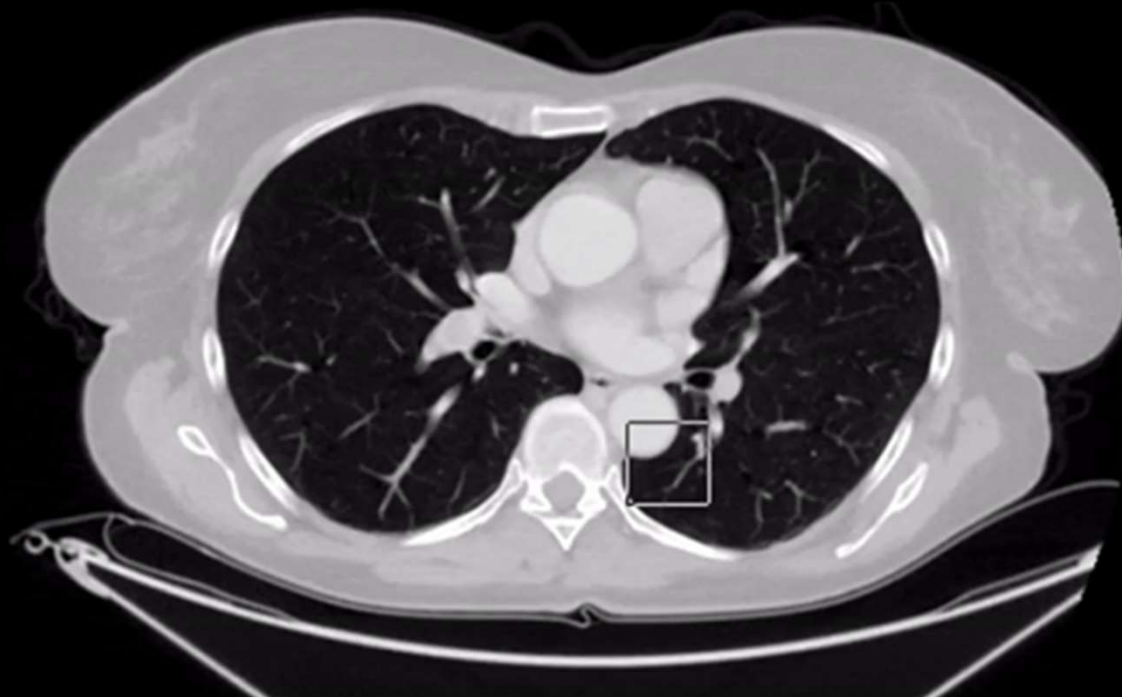
Theranostics, PROMs and Digital Tx

- Novel / emerging treatment for men with advanced prostate cancer
- Targetted / personalised therapy
 - Lu-177
 - PSMA
 - Cancer cells identified through PSMA expression and targeted by Lu-177
- PROMs to monitor impact / quality of life





Example Finding



Indication: Screening study.

Correlation: None. Technique: 80mls Omnipaque 350 was given intravenously.

FINDINGS:

Thoracic nodes: No lymphadenopathy.

Lungs: No suspicious mass or nodule.

Pleura/pericardium: No effusion.

Hepatobiliary: Innumerable hypoenhancing liver masses are consistent with metastases. For reference, the largest metastasis in segment 5 measures 4.6 x 4 cm. There is no biliary tree dilatation. The portal vein is patent.

Spleen/Pancreas/Adrenal glands: Unremarkable.

Renal tracts: No solid renal mass. 1.8 cm simple cyst in the superior pole of the left kidney. No hydronephrosis. The bladder is unremarkable.

Abdominopelvic nodes: A 3 x 1.7 cm portocaval lymphadenopathy. No other size significant

GI tract/peritoneum: There is a large 7 x 6 x 7 cm heterogeneously enhancing mass involving the proximal ascending colon, immediately above the ileo-caecal junction. There is evidence of extramural extension with marked surrounding peritoneal fat stranding. There is circumferential submucosal oedema in the caecum. No evidence of bowel obstruction. There are innumerable diffuse peritoneal nodules within the mesentery and moderate free intraperitoneal fluid mainly within the pelvis, in keeping with peritoneal carcinomatosis.

Pelvic organs: Unremarkable.

Musculoskeletal: No suspicious destructive osseous lesion.

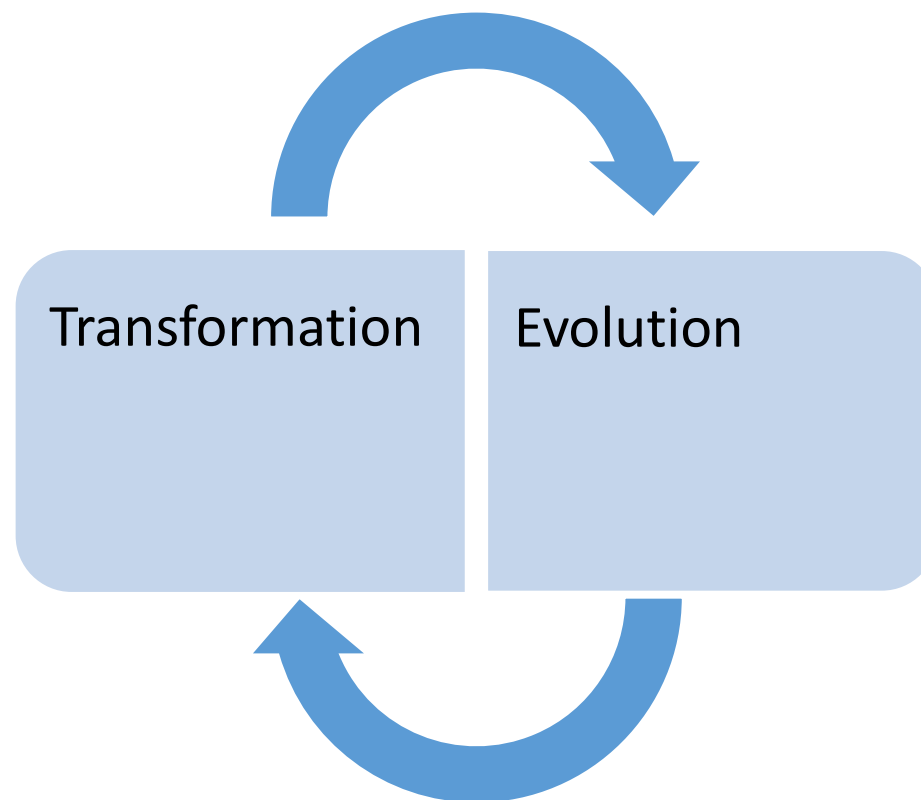
IMPRESSION: A 7 cm mass in the proximal ascending colon is in keeping with a malignant primary neoplasm, most likely adenocarcinoma. There is evidence of peritoneal carcinomatosis, diffuse liver metastases and a portocaval lymphadenopathy.

Bionic approach

Best of human

Best of digital & technology

Simultaneous action



So what do we need to do?

Journal List > Mhealth > v.3; 2017 > PMC5682364



Mhealth, 2017; 3: 38.

PMCID: PMC5682364

Published online 2017 Sep 14; doi:10.1186/s12911-017-0368-7

PMID: 29184890

Digital health is a cultural transformation of traditional healthcare

Bertalan Mészáros,^{1,2} Zsófia Drobni,³ Éva Bényei,⁴ Bence Gergely,⁵ and Zsuzsanna Csécsé,²

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Abstract

Go to:

Under the term “digital health”, advanced medical technologies, disruptive innovations and digital communication have gradually become inseparable from providing best practice healthcare. While the cost of treating chronic conditions is increasing and doctor shortages are imminent worldwide, the needed transformation in the structure of healthcare and medicine fails to catch up with the rapid progress of the medical technology industry. This transition is slowed down by strict regulations; the reluctance of stakeholders in healthcare to change; and ignoring the importance of cultural changes and the human factor in an increasingly technological world. With access and adoption of technology getting higher, the risk of patients primarily turning to an accessible, but unregulated technological solution for their health problem is likely to increase. In this paper, we discuss how the old paradigm of the paternalistic model of medicine is transforming into an equal level partnership between patients and professionals and how it is aided and augmented by disruptive technologies. We attempt to define what digital health means and how it affects the status quo of care and also the study design in implementing technological innovations into the practice of medicine.

Keywords: Digital health, medical technology, self-tracking, paradigm shift, digital transformation

Formats:

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callaghaninnovation.govt.nz/news-and-events/scaleup-nz-place-covid-19-recovery

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Access to experts | Technology and product development | Innovation skills | R&D funding | Scale-Up NZ

News and events

Scaling up NZ's COVID-19 recovery

This article was published on 30 June 2020

In a little more than a year, Scale-Up NZ has become a vital tool in connecting

If your business wants to take innovation to the next level, get in touch.

TECH'S SLINGSHOT

tin100.com/nzs-post-covid-19-recovery/

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HARNESSING TECH'S SLINGSHOT EFFECT FOR NZ'S POST COVID-19 RECOVERY

7 recent responses from big tech

beckershospitalreview.com/healthcare-information-technology/7-recent-responses-from-big-tech-for-covid-19-recovery.html

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7 recent responses from big tech for COVID-19 recovery

Jackie Drees - Thursday, May 14th, 2020 Print | Email

From launching contact tracing technologies to backing virtual research studies, tech giants Google, Apple, Amazon and Microsoft have made several recent moves in response to the COVID-19 pandemic.

Google and Apple partnered in April to develop a COVID-19 tracking system that uses Bluetooth technology and application programming interfaces to make iOS and Android devices interoperable. The system, which is expected to launch in mid-May, will allow third-party developers and public health agencies to create apps that are compatible with both types of software so they can track and notify people who have been in close proximity to someone who tested positive for COVID-19.

Here are some of Google and Apple's other tech initiatives as well as Amazon and Microsoft's responses to

Once New Zealand emerges from COVID-19 lockdown, the technology export sector presents one of the most robust opportunities to sustain NZ's economic momentum in the face of the decline and uncertainty surrounding tourism, says TIN Managing Director, Greg Shanahan.

Over the past five years, the gap in offshore income between international tourism and tech exports has narrowed as TIN-surveyed companies have hit their stride and hundreds of millions of dollars of foreign and local investment has poured into emerging Kiwi tech businesses.

In 2019, tech exports came in at just under \$9B and grew at 11% per annum, while international tourism was plateauing at just over \$11B. In the face of a global economic downturn, irrespective of the cause, the tech export sector is likely to be less affected than other sectors – so it's fair to say that in the coming year the sectors will trade places in terms of global revenue brought to New Zealand.

“Our success will not be defined by predictions from televised economists but by the actions we take collectively to support and celebrate our thriving tech sector in the coming months and years.”

TIN companies typically operate in the 'business to business' space and are therefore: 1) less sensitive to declines in consumer spending, 2) provide essential operational infrastructure, 3) have locked in recurring revenue as part of their service business model and 4) are increasingly large and profitable.

Last year was the second consecutive year that revenue grew for the TIN200 (the 200 largest tech exporters) by over \$1B. Last year, fifty TIN companies had revenues over NZ\$50m, eight

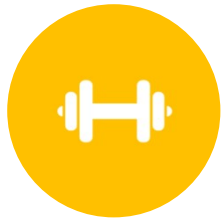
Key shifts



Bionic



Appetite for risk



Design for equity



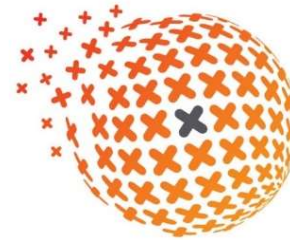
Design for value



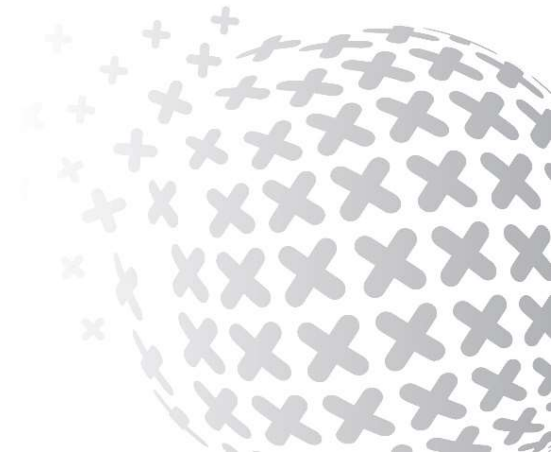
Cultural
transformation



Social
determinants



Healthcare[™]
HOLDINGS



And if you have been.....

Thanks for listening

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