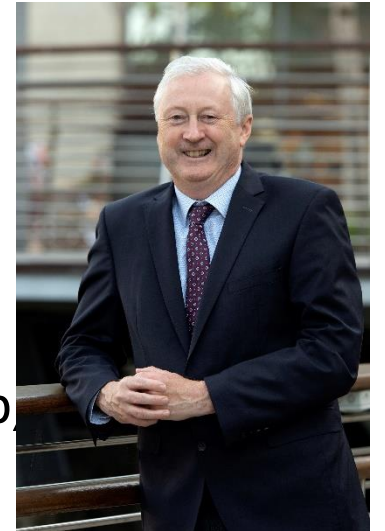


How to digitally transform an Industry in 20 minutes?

Prof. Martin Curley

Co-Founder Innovation Value Institute, Maynooth University
Chair, UN Science Summit Digital Health Leadership Steering Group
Visiting Professor, University of Bath

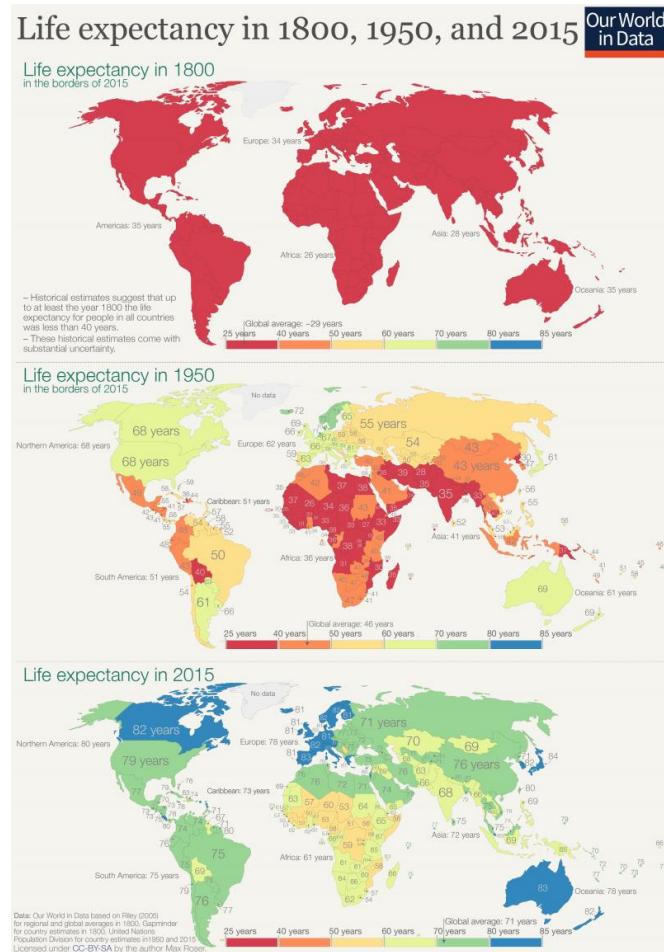




↑ + Stay Left,
Shift Left
10X



Health Paradox



**IF
AIR TRAVEL
WORKED LIKE
HEALTH
CARE**

Do you know the way to San Jose?



Perspective



news.sky.com

sky news

Home > World

It's not just the NHS - Europe's healthcare crisis

Monday 16 January 2023 01:30, UK

It's not just the NHS - Europe's healthcare crisis

sky news

DAILY WITH NIAL PATERSON

00:00

21:17

00:00

21:17

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Services stretched to breaking point, routine operations cancelled and medical workers striking - it's not the UK's health service we're talking about here but those on the continent.

On the Sky News Daily podcast with Niall Paterson, Ana Gimenez, a GP in Spain, and A&E doctor Roberto Cosentini in Italy help to

time.com

TIME

SUBSCRIBE

IDEAS

The Coming Collapse of the U.S. Health Care System

EVERY PATIENT S A VIP

IT

I'M PR IT

BY ROBERT GLATTER AND

JANUARY 10, 2023 3:16 PM

Dr. Glatter is Editor at Large, Emergency Medicine, and Emergency Medicine at Zuckerman School of Medicine at Hofstra/Northwell; Dr. ...

Department of Anesthesiology, University of Rochester Medical Center

IDEAS

4. Hospital CFO Report

BECKER'S HEALTHCARE

LOOKING FOR FINANCE WEBINARS?

Click here to see what's coming up next from Becker's.

Financial Management

Hospitals average 100% staff turnover every 5 years – Here's what that costs

Marcus Robertson - Updated Tuesday, January 3rd, 2023

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Hospitals have been paying astronomical prices for staff turnover, according to the "2022 NSI National Health Care Retention & RN Staffing Report."

The New York Times

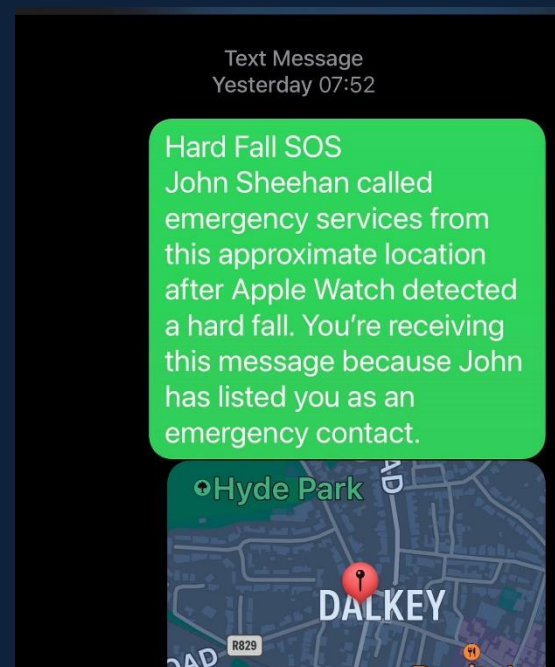
Doctors Aren't Burned Out From Overwork. We're Demoralized by Our Health System.

Feb. 5, 2023

In 2018, for the first time in history, persons aged 65 years or over worldwide outnumbered children under age five. Projections indicate that by 2050 there will be more than twice as many persons above 65 as children under five. By 2050, the number of persons aged 65 years and over globally will also surpass the number of adolescents and youth aged 15 to 24 years.

Division





Shout out and
Accidents will
happen!

Dr John Sheehan,
Director of Radiology, Blackrock Hermitage Clinic

Clinical Vice-Chair, DHLSG

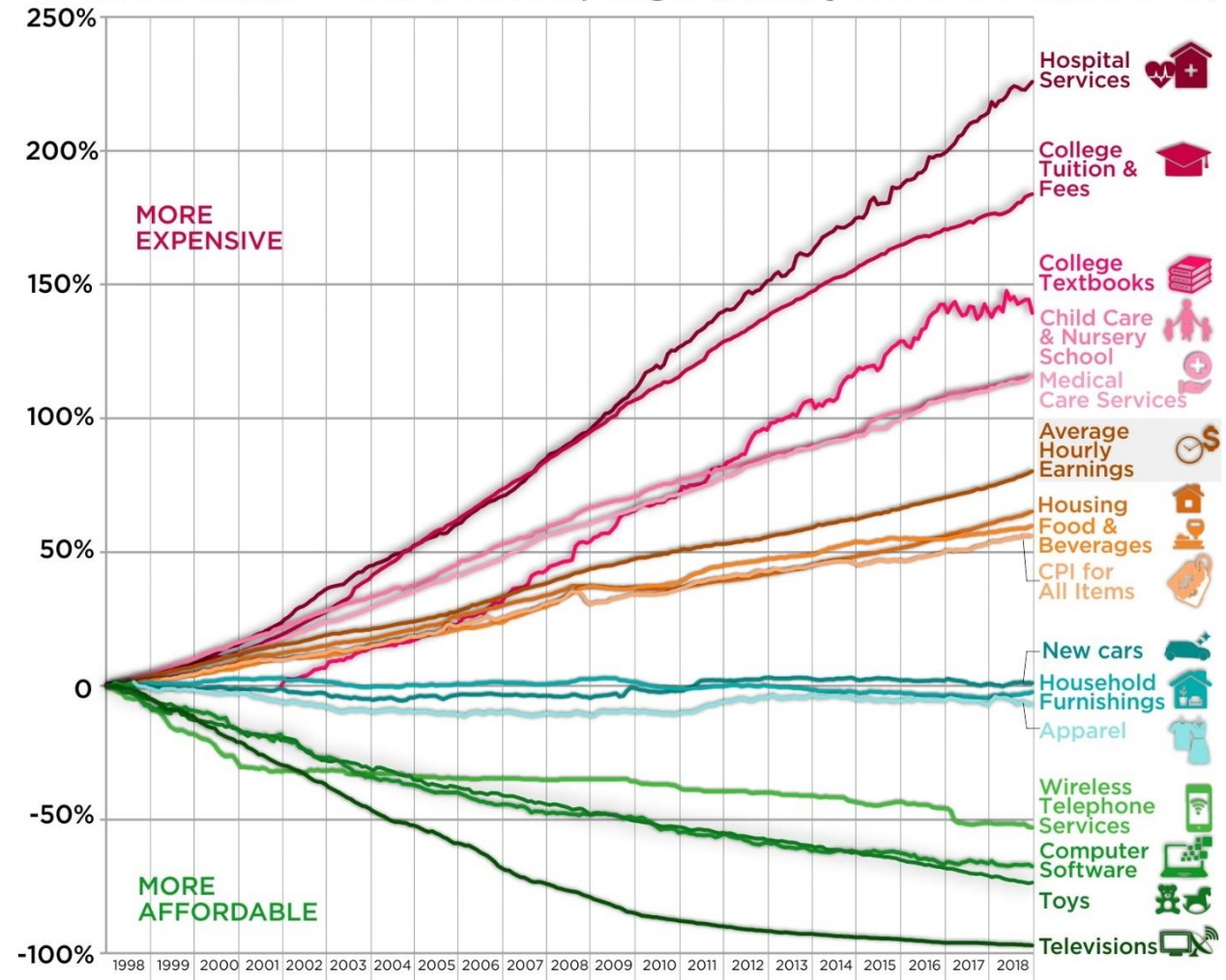
Digital Health Entrepreneur

Patient (14/2/23)

Unsustainable Healthcare Costs

20 Years of Price Changes in The United States

Selected Consumer Goods & Services, Wages (January 1998 to December 2018)



Article & Sources:
<https://howmuch.net/articles/price-changes-in-usa-in-past-20-years>
CPI and other price indices - Bureau of Labor Statistics - <https://data.bls.gov/PDQWeb/cu>
Average hourly earnings - Bureau of Labor Statistics - <https://data.bls.gov/timeseries/CES0500000008>

howmuch.net

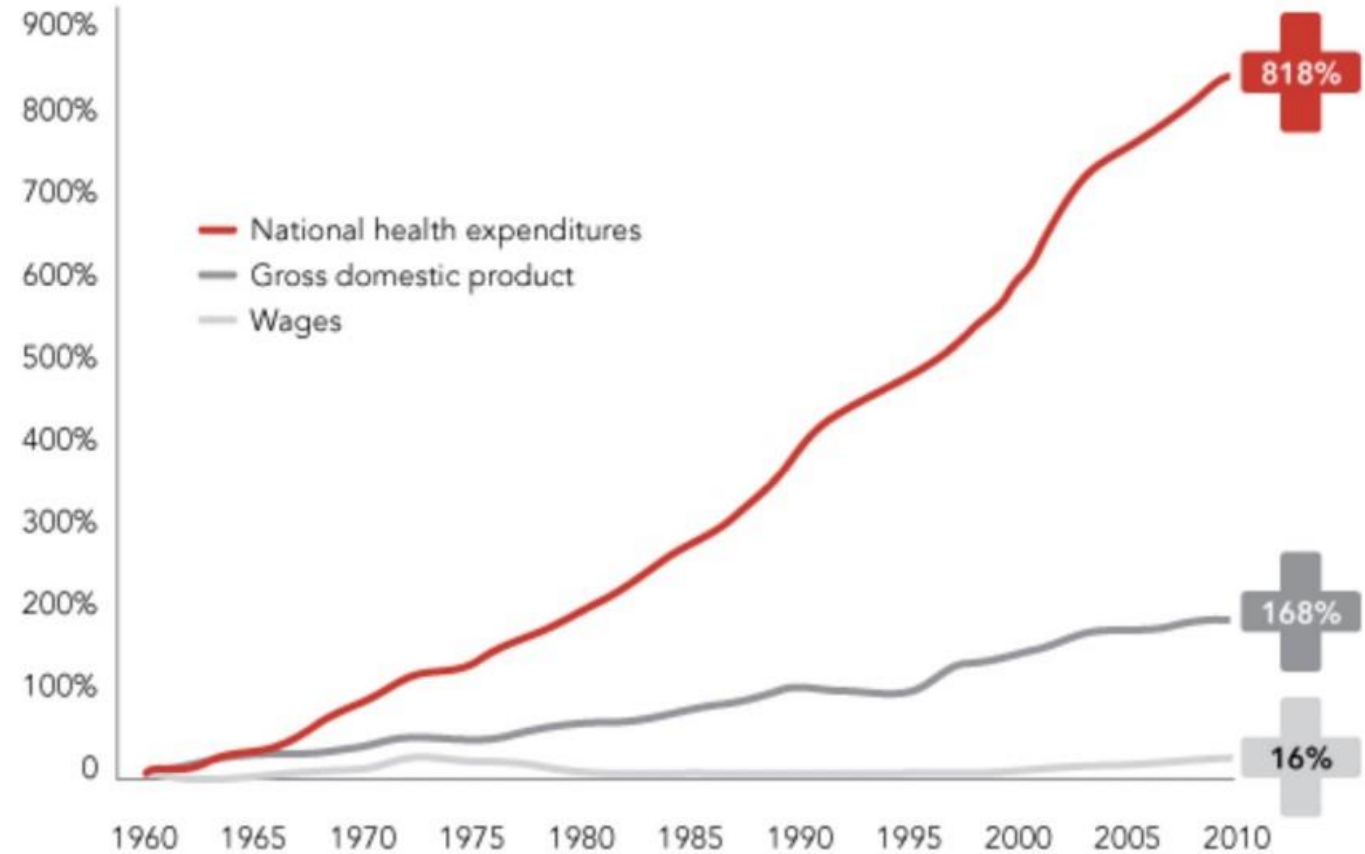
The cost of healthcare is rising,
everywhere.

1960-2010 saw a 818% increase in
USA healthcare spending v 16% in
wages.

An increasing % of GDP is devoted
to Healthcare and this will rise.

An aging population will drive the
cost higher.

19.9% of US GDP devoted to
Healthcare in 2022

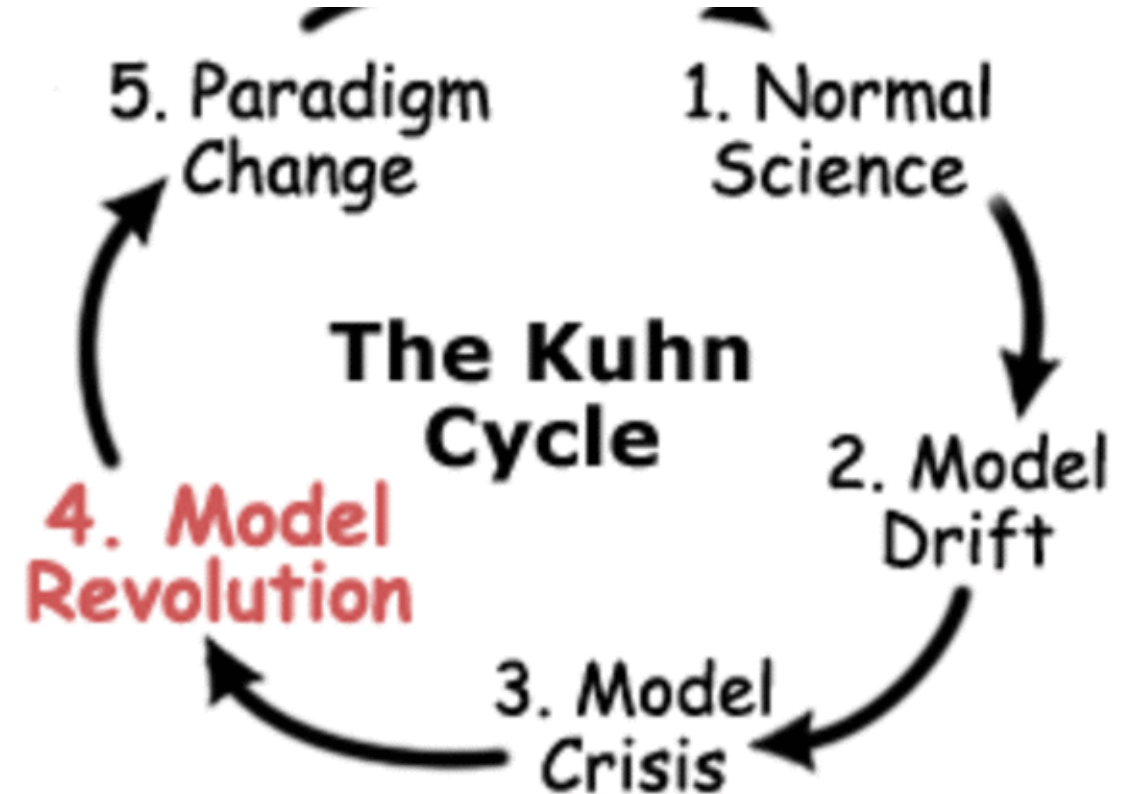


Sources: McKinsey, "Accounting for the Cost of U.S. Health Care" (2011),
Center for American Progress

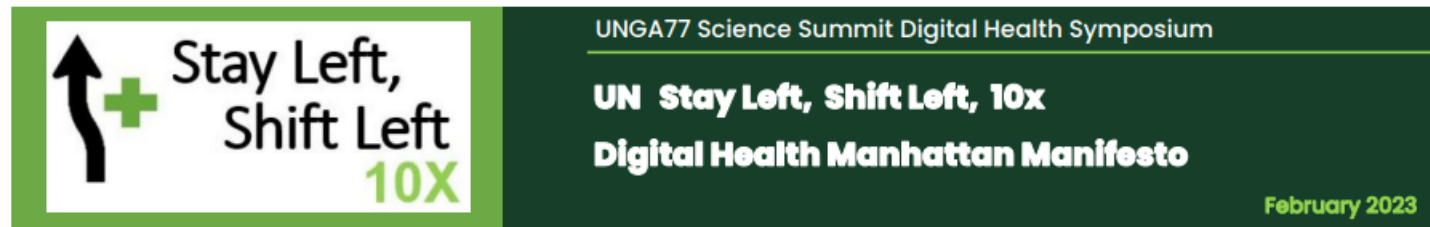
THE HUFFINGTON POST

Healthcare spending rose 4x GDP growth rate over 50 years

Structure of Scientific Revolutions



UNGA 77 Digital Health Symposium



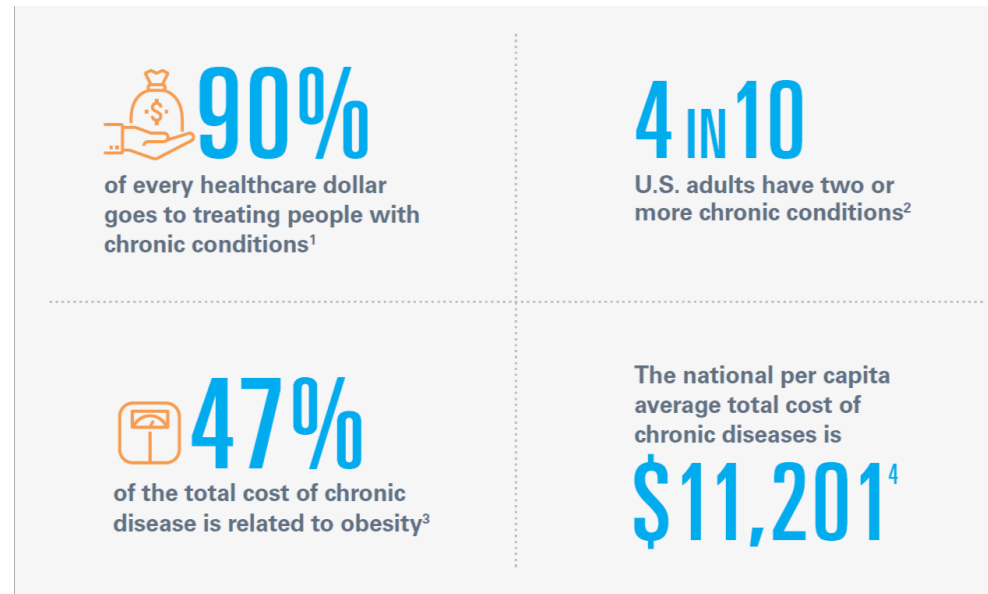
Health

CHAMPIONING A NEW ERA OF DIGITAL HEALTH THROUGH COLLABORATION,
COOPERATION AND CHANGE

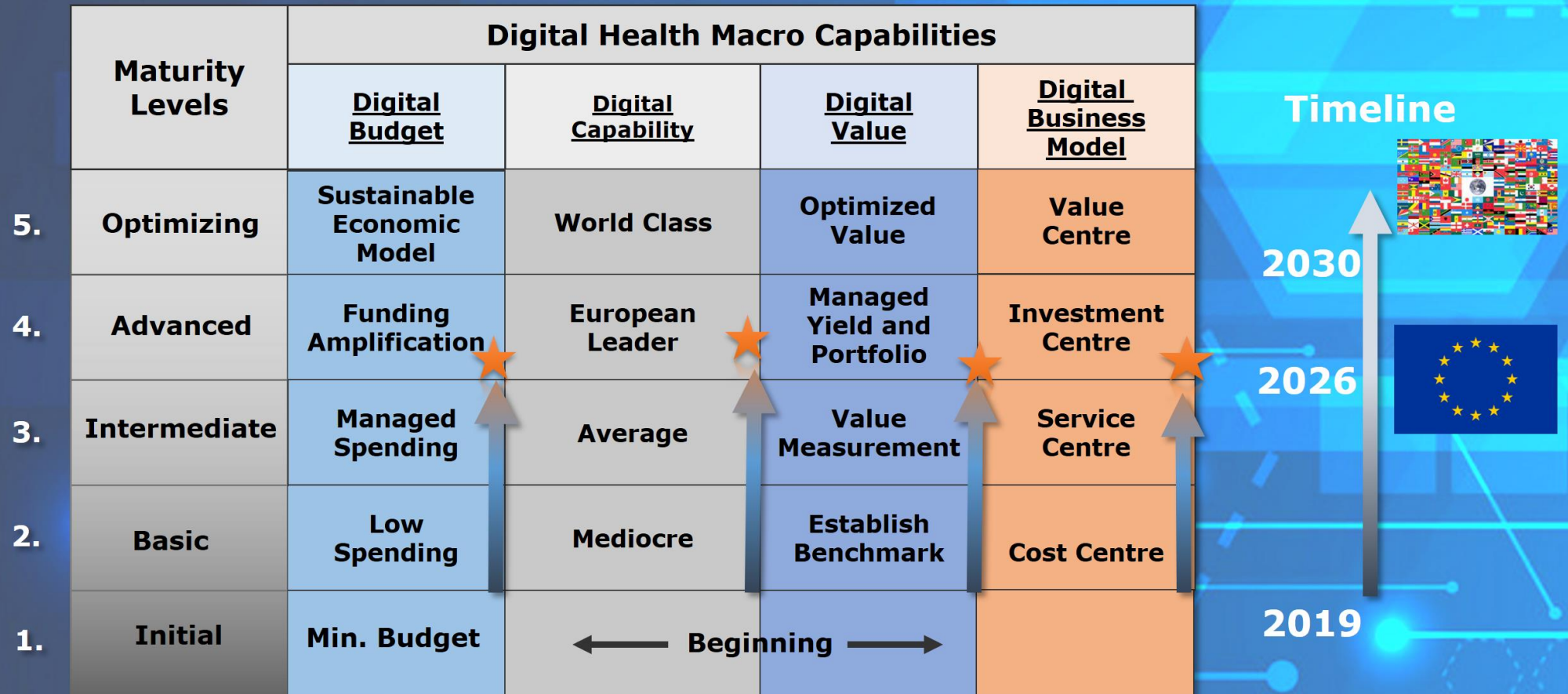


We are declaring WAR on disease

- 70% of Deaths are due to preventable chronic disease
- 90% of healthcare costs



Digital Health Roadmap - Ireland



A New Uber Discipline – Digital Health

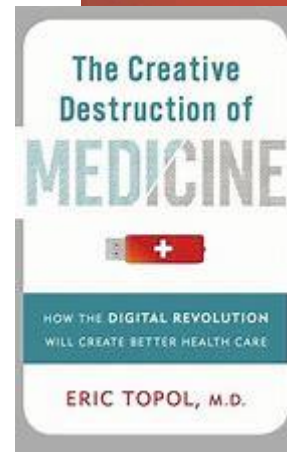
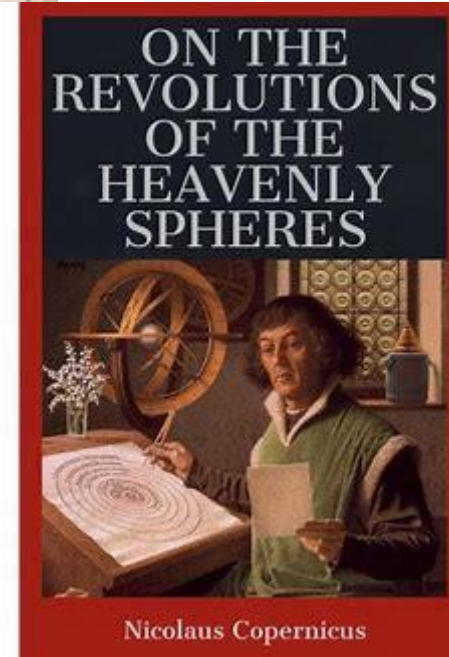
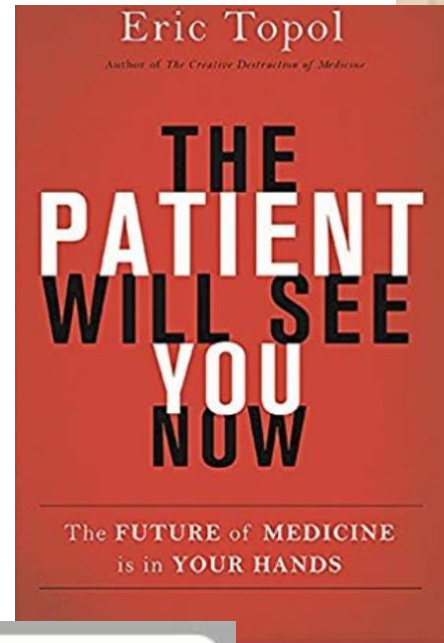
- Health
- Digital
- Economics
- Genomics
- Demographics
- Data Science
- Artificial Intelligence
- Internet of Things
- Mechanistic



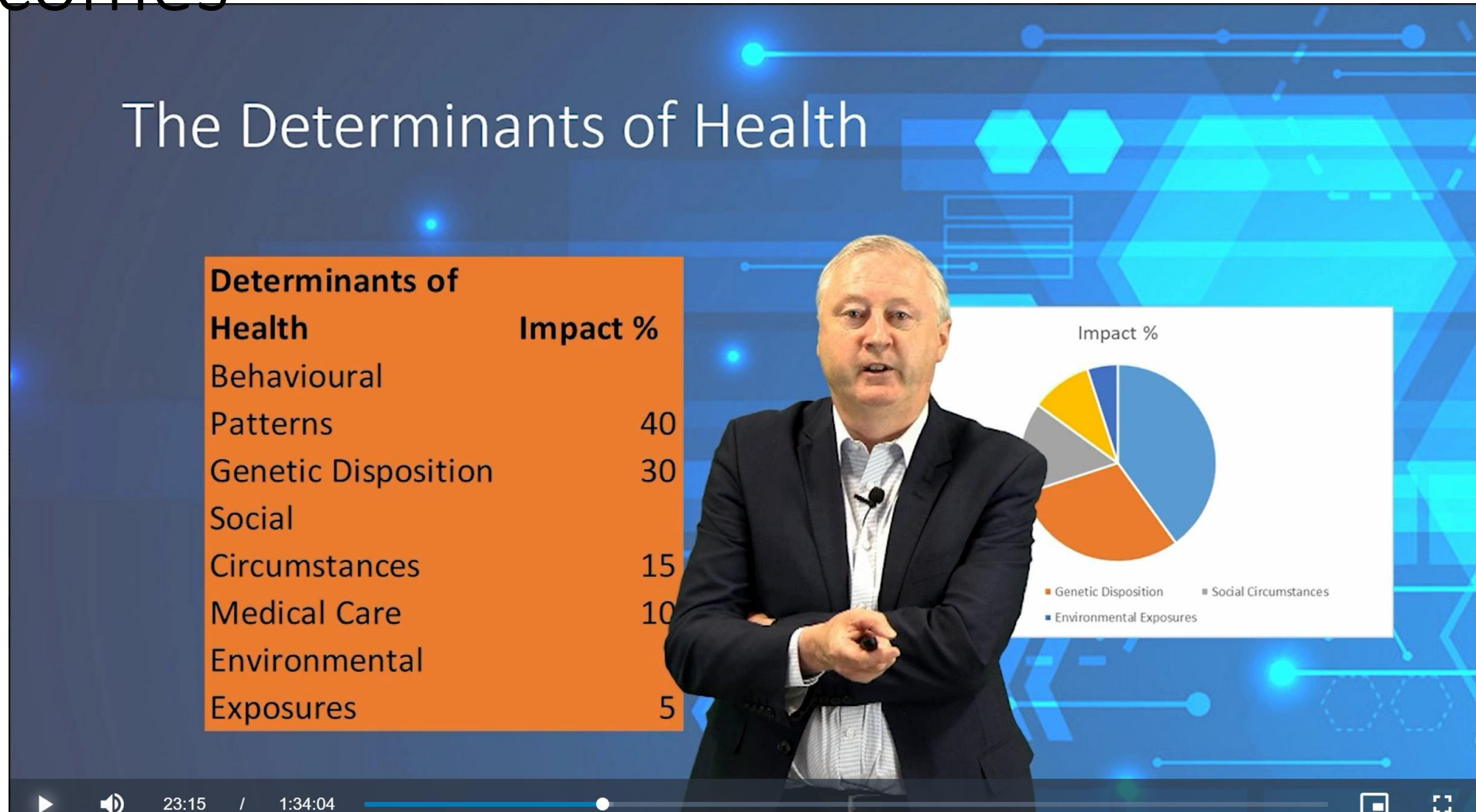
Copernican Shifts

Three Copernican Shifts

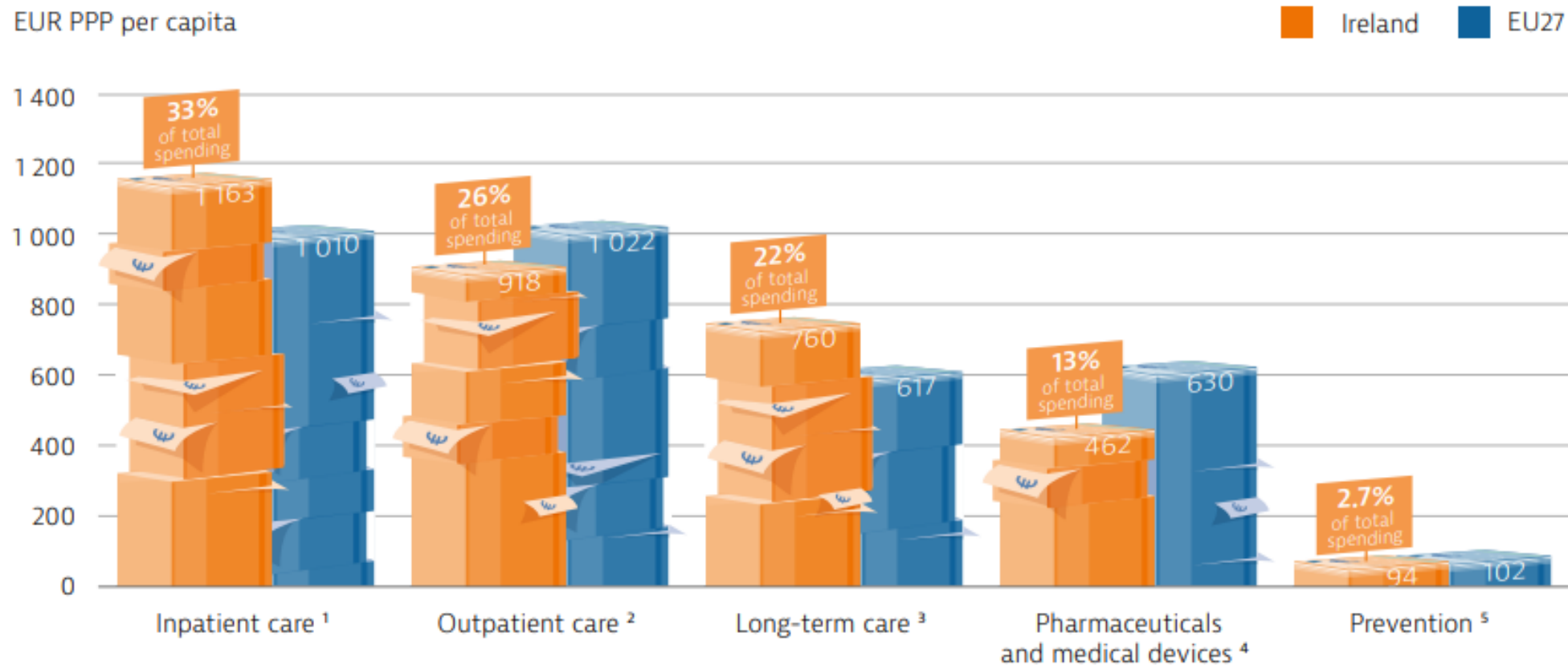
1. From illness to Wellness
2. From Doctor to Patient Knows Best
3. From Hospital to Home



Healthcare spend contributes 10% of health outcomes



EU Average: 97% illness, 3% prevention



Note: The costs of health system administration are not included. 1. Includes curative-rehabilitative care in hospital and other settings; 2. Includes home care and ancillary services (e.g. patient transportation); 3. Includes only the health component; 4. Includes only the outpatient market; 5. Includes only spending for organised prevention programmes. The EU average is weighted.

Sources: OECD Health Statistics 2021, Eurostat Database (data refer to 2019).

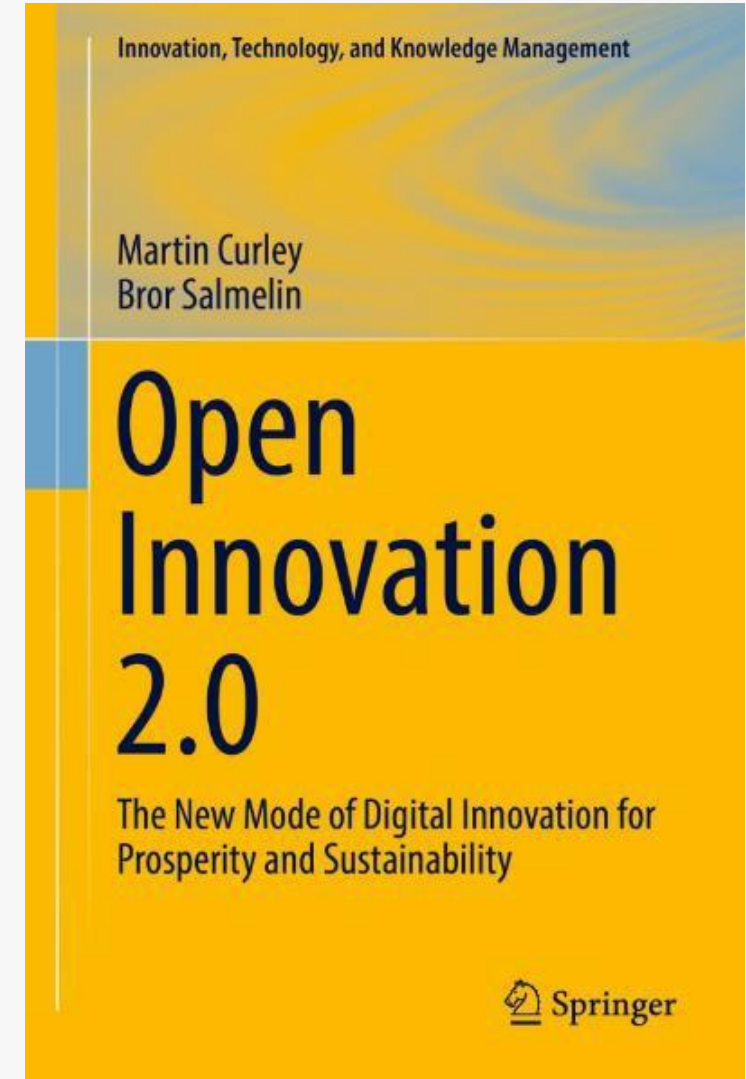
Hospital at Home

- Opportunity to increase Hospital Capacity by 10X using Hospital at Home model

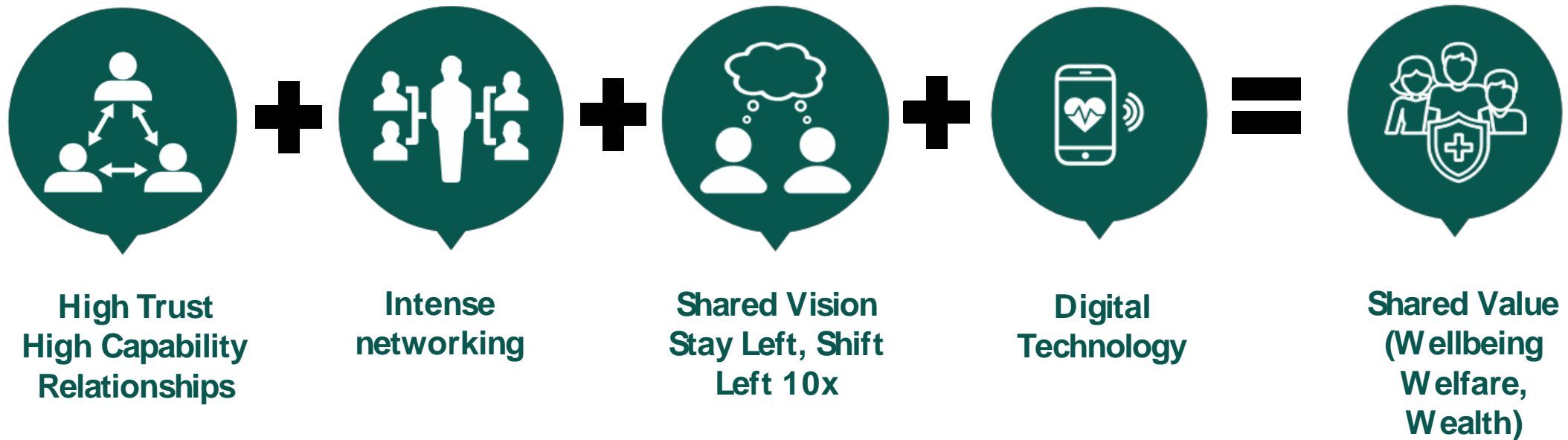


Introducing Open Innovation 2.0; OI2

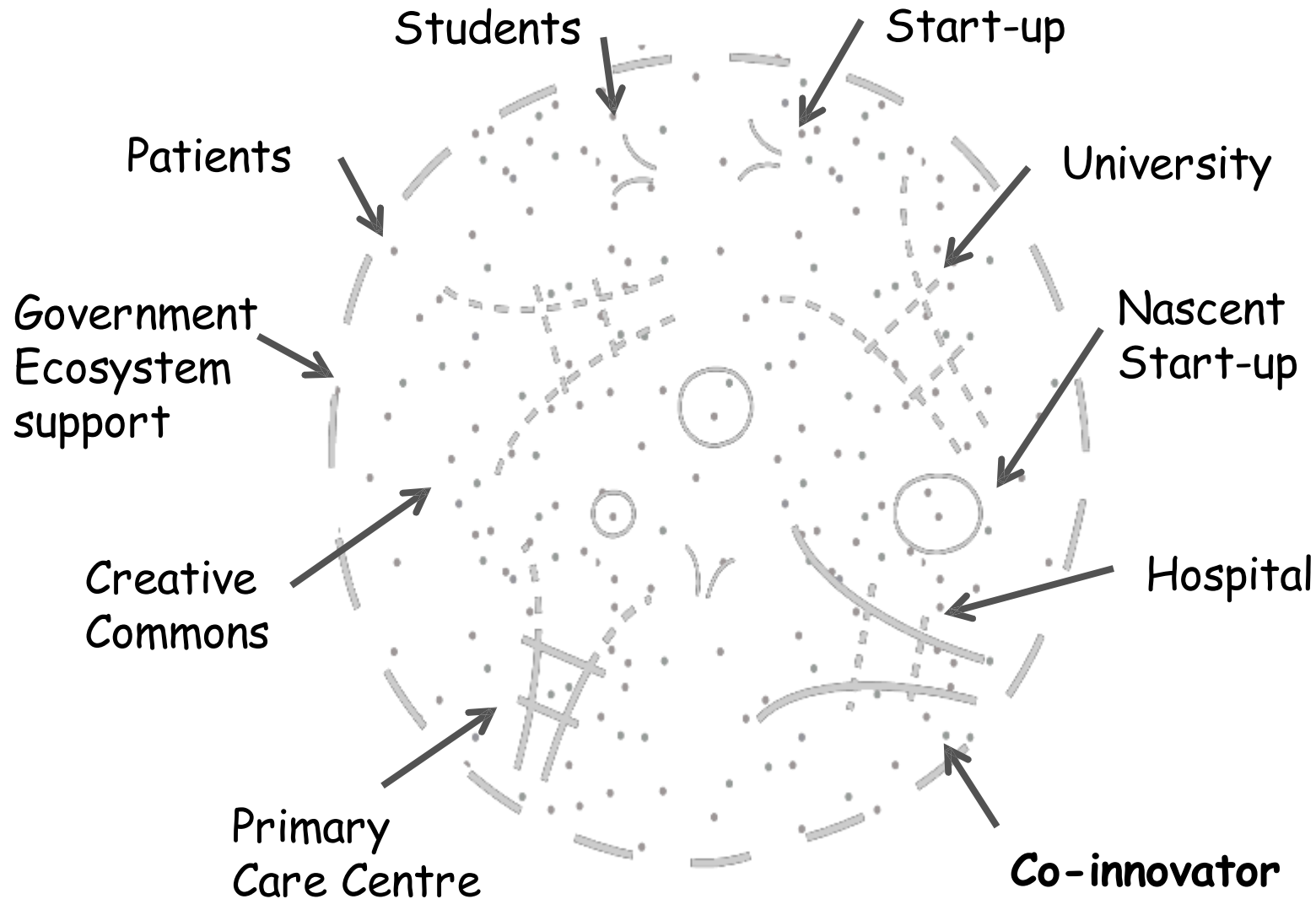
**The way is long if one follows
precepts (rules), the way is short if
one follows patterns - Seneca**



Leapfrog via Open Innovation 2.0

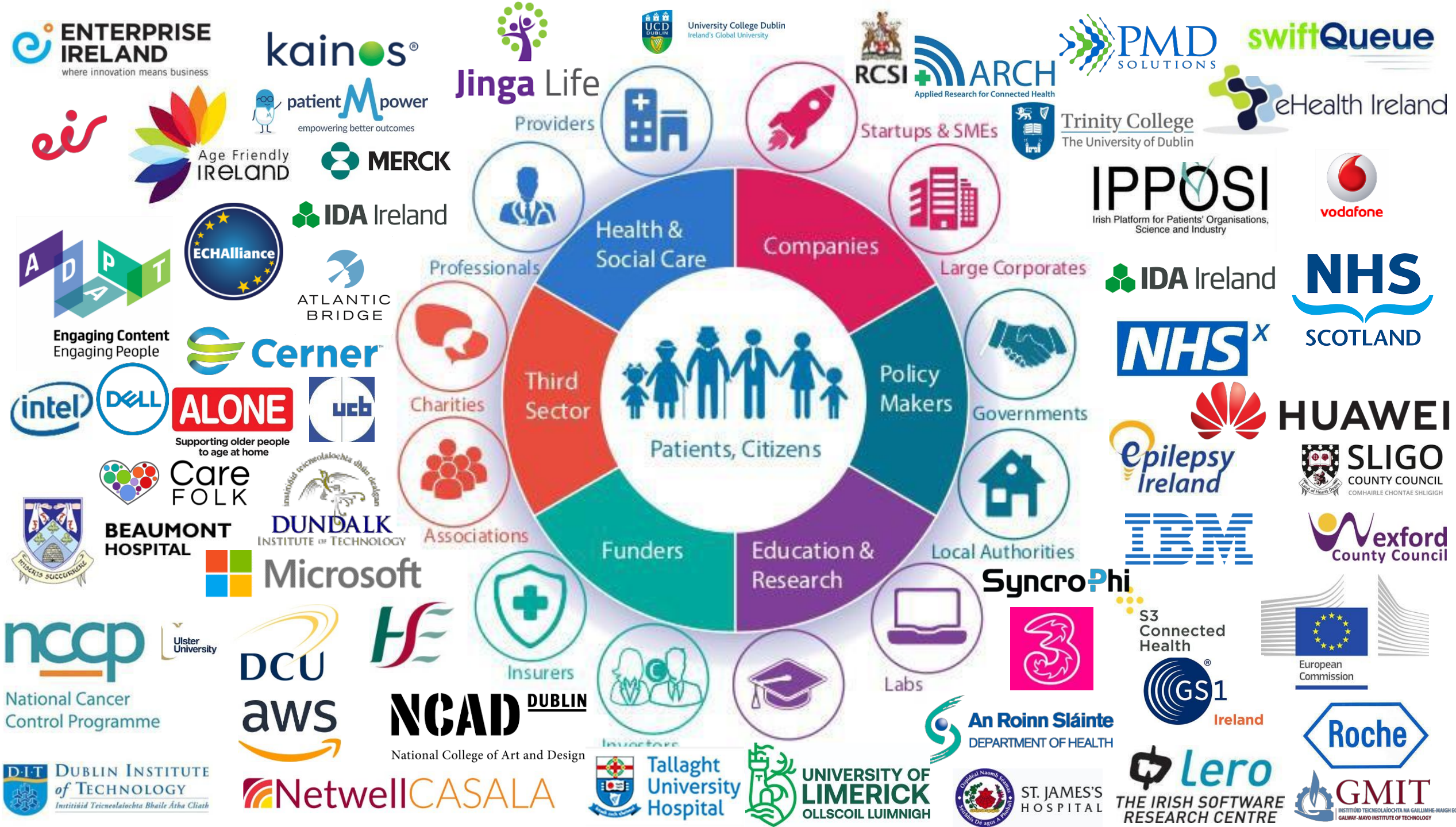


Open Collaborative Ecosystem

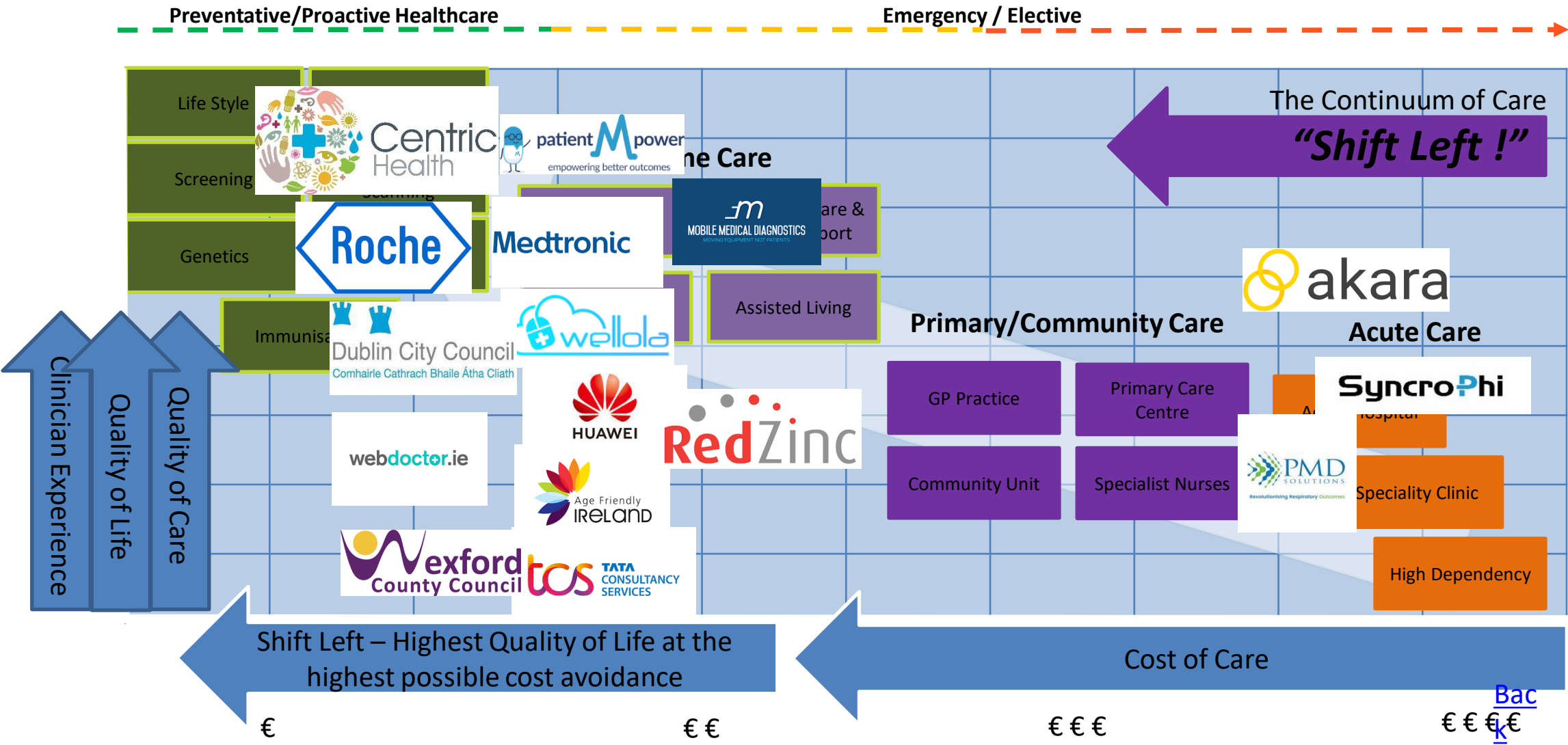


Leveraging Collective Intelligence and Energy; Multiplicative, Synergy and network effects

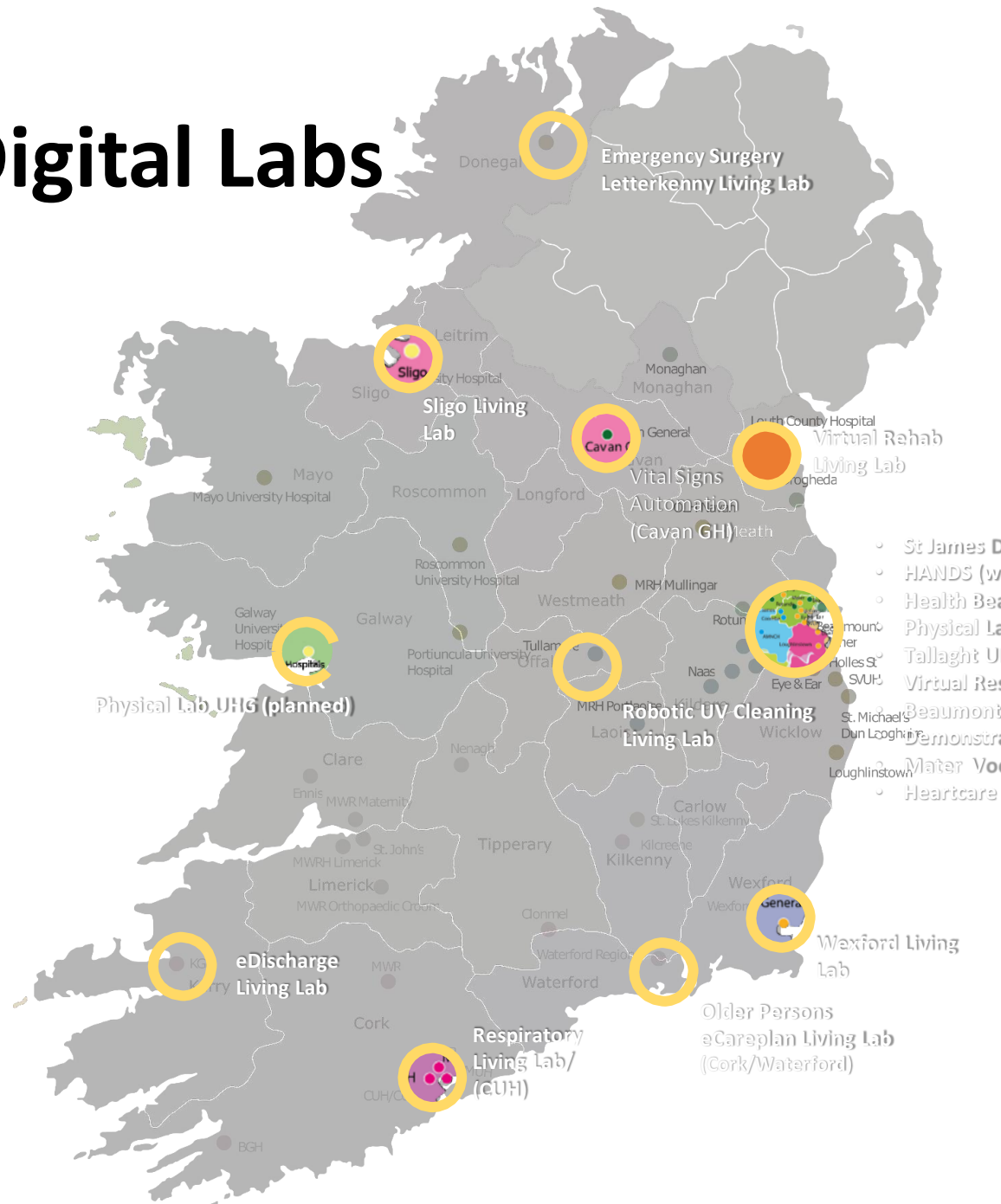
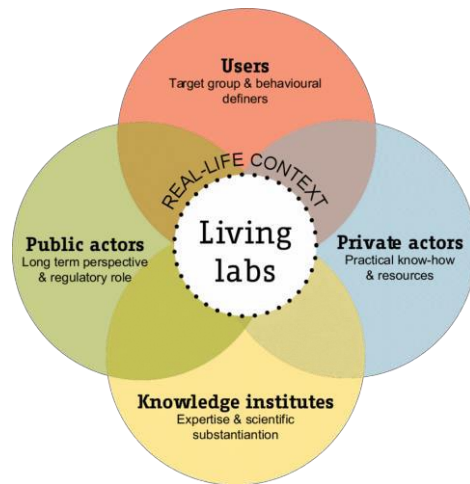




Stay Left, Shift Left – Quadruple Aim



Ireland Digital Labs



SCRUM PRINCIPLES



Empirical Process Control

Scrum prescribes making decisions based on observation and experimentation rather than detailed upfront planning.



Self-organization

Scrum believes that today's workers have much more knowledge to offer than just their technical expertise and that they deliver greater value when self-organized.



Collaboration

In Scrum, product development is a shared value-creation process that needs all the stakeholders working and interacting together to deliver the greatest value.



Value-based Prioritization

Delivering the greatest value in the shortest amount of time requires prioritization and selection of what could be done from what should be done.



Time-boxing

Time is treated as a limiting constraint and time-boxing is used as the rhythm to which all stakeholders work and contribute.



Iterative Development

The customer may not always be able to define very concrete requirements. The iterative model is more flexible in accommodating changing requirements.

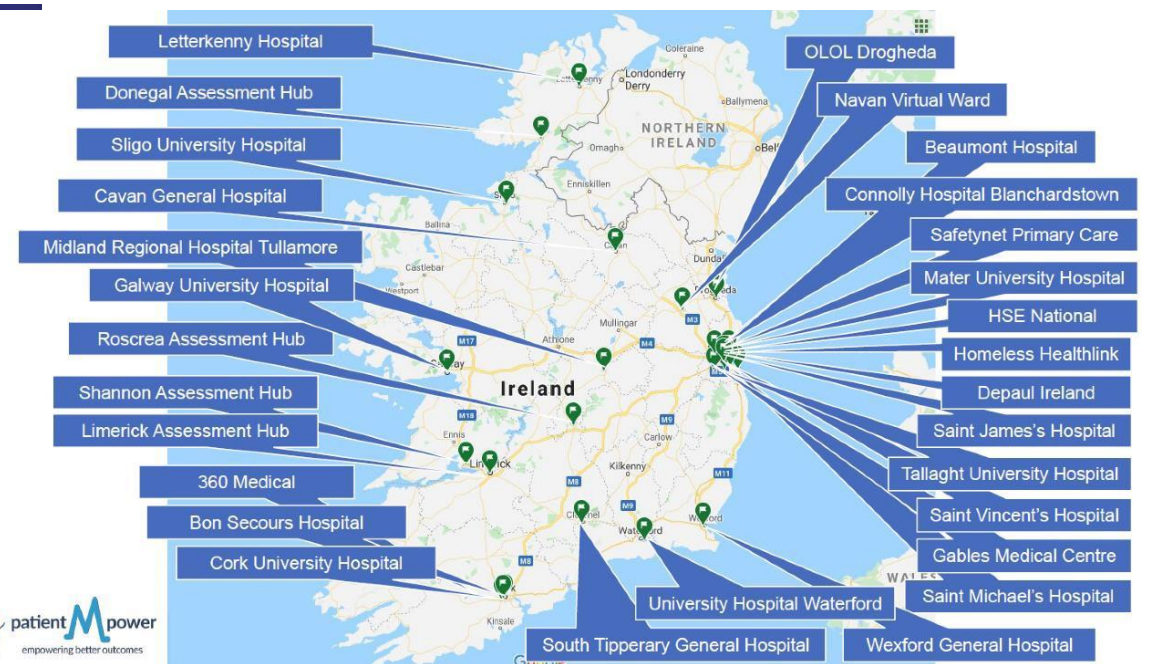
[Back](#)

11 March 2020 – IIEA,

30 April 2020



Updated / Monday, 9 Mar 2020 06:26



ROI > 8000%



patientMpower Virtual Care Platform

Aggregating patient data, integrating to hospital systems

For patients

- Integrated Devices
- Symptom tracking & Health questionnaires
- Medication reminders, Activity tracking & educational content



For HCPs



- Triage & Automated alerts for physiological parameters
- Integrations to electronic health records & other data systems



Example

RespiraSense
In-patient

- OTS tablet device
- Android
- Disposable sensor
- Respiratory rate monitoring
- Continuous monitoring
- 7 days battery life
- All comm's data

RespiraSense Implementation

- RespiraSense Installed (Sum)
- RespiraSense installation ongoing
- Engaged with the hospital (Sum)



Respiratory

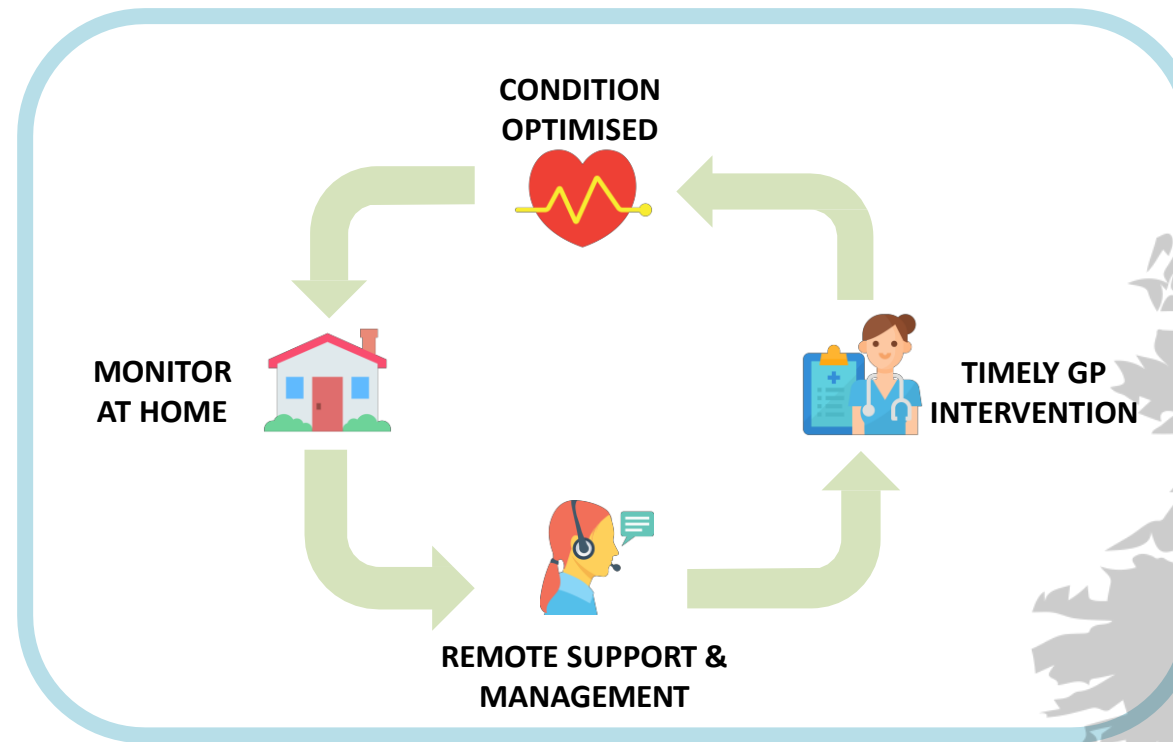
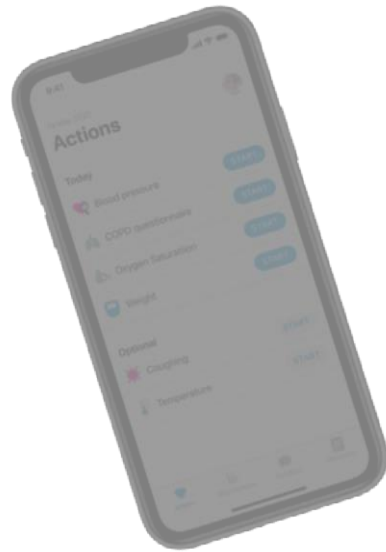


ROI ≥ 900%

Example 10X Innovations – Heart Failure

Cardiac Living Lab: Heart Care at Home

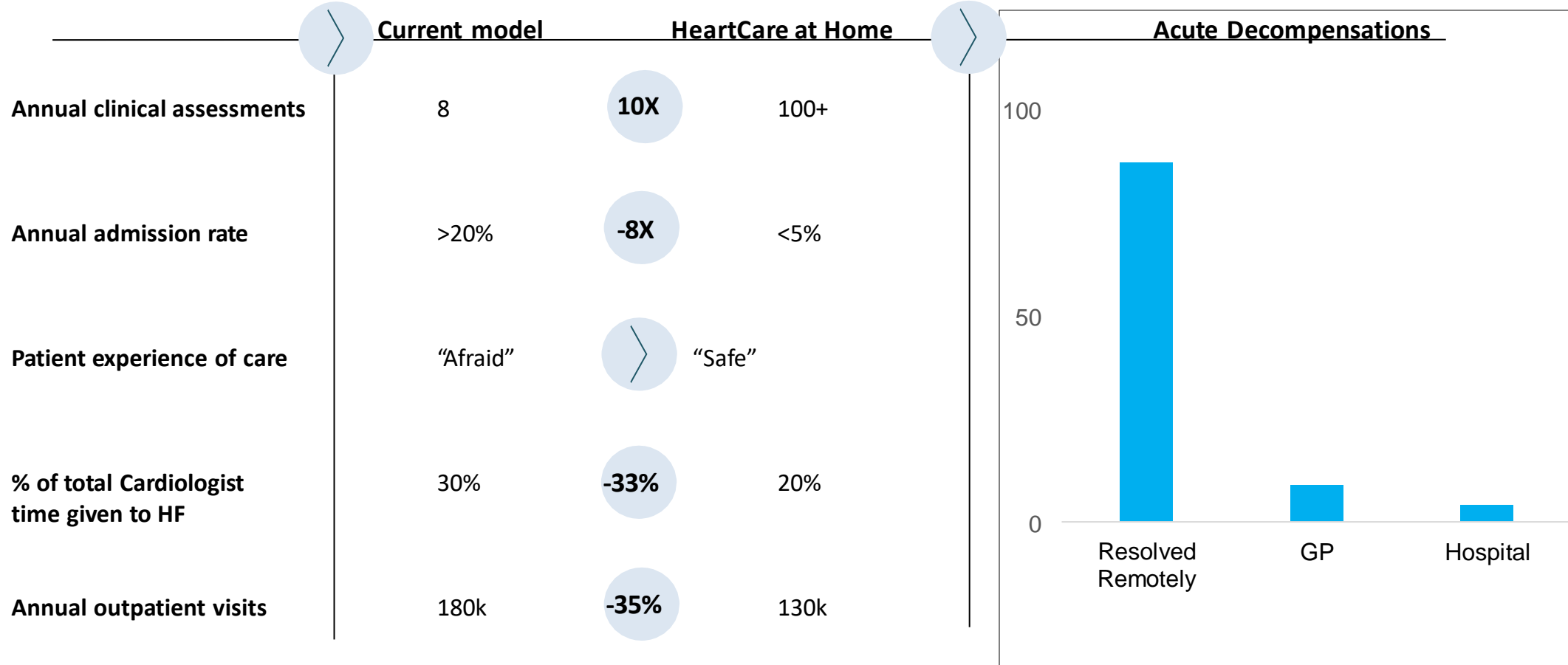
CONSTANT DIGITAL
PORTAL ACCESS



*“This programme has
given me my life back”*

Heart Care at Home patient

150 patients with Heart Failure managed remotely for more than 1 year



Improved patient experience, reduced admissions, and halved total cost of care demonstrated.
Cardiology Team capacity could be redirected to clear waiting lists within 12 - 15 months.

Problem: Bed Capacity- Vital Signs Automation



Ward Central Station



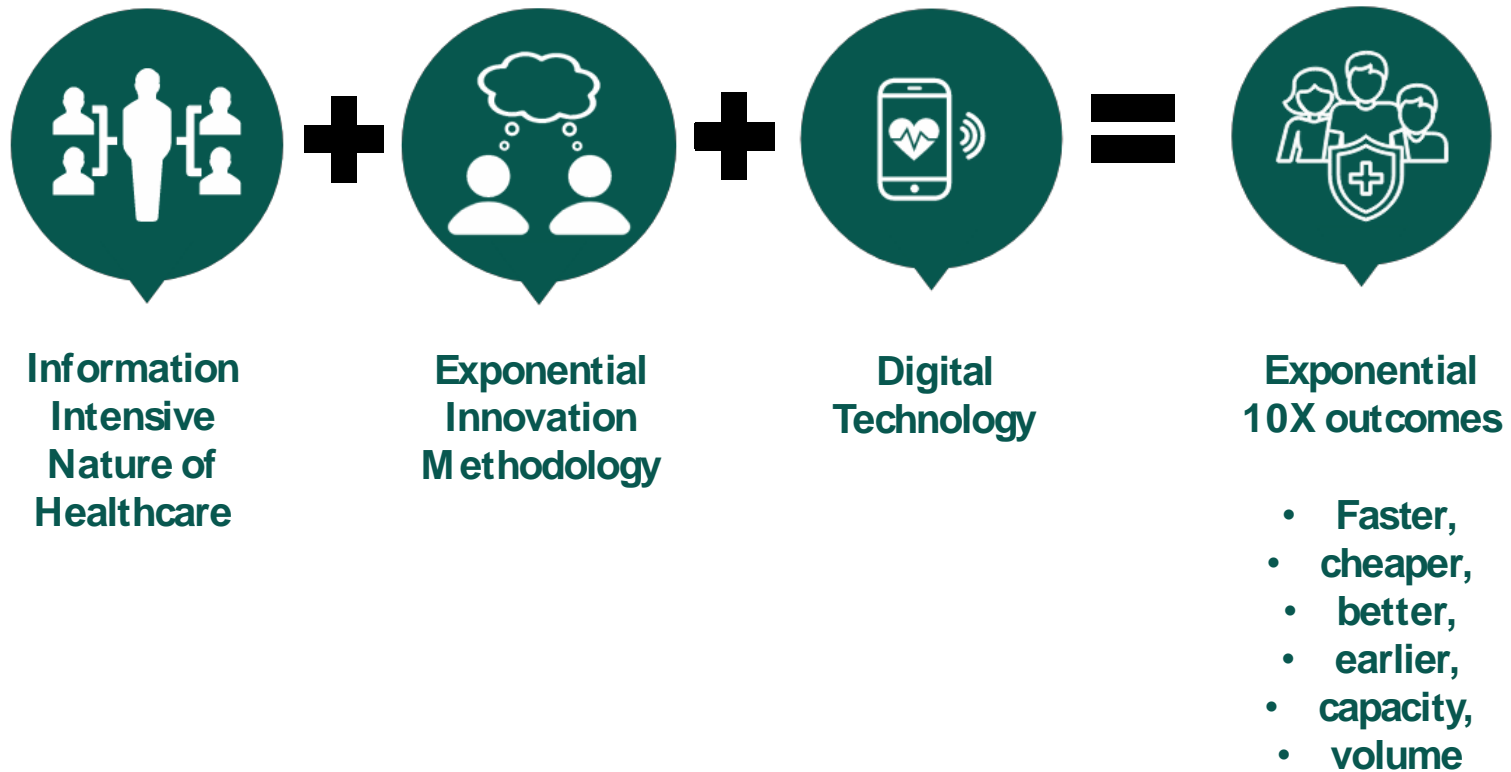
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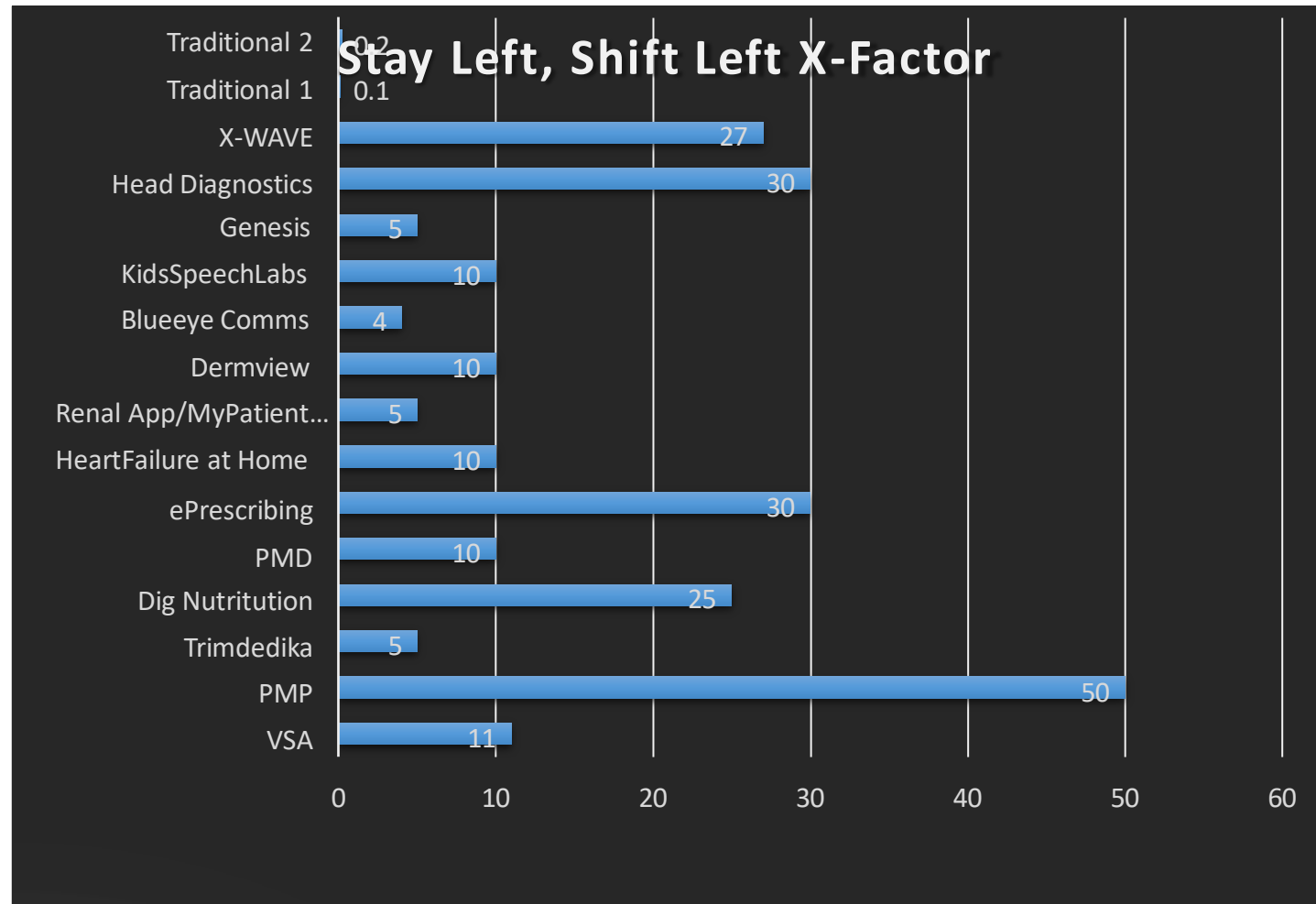


IRR = 1100%

Curley's Law



Curley's Law – Multiple 10X returns



Curley's Law – standing on the shoulder of giants



Humphrey's
Law



Metcalfe's
Law



+



Gilders's
Law



+



Moore's
Law



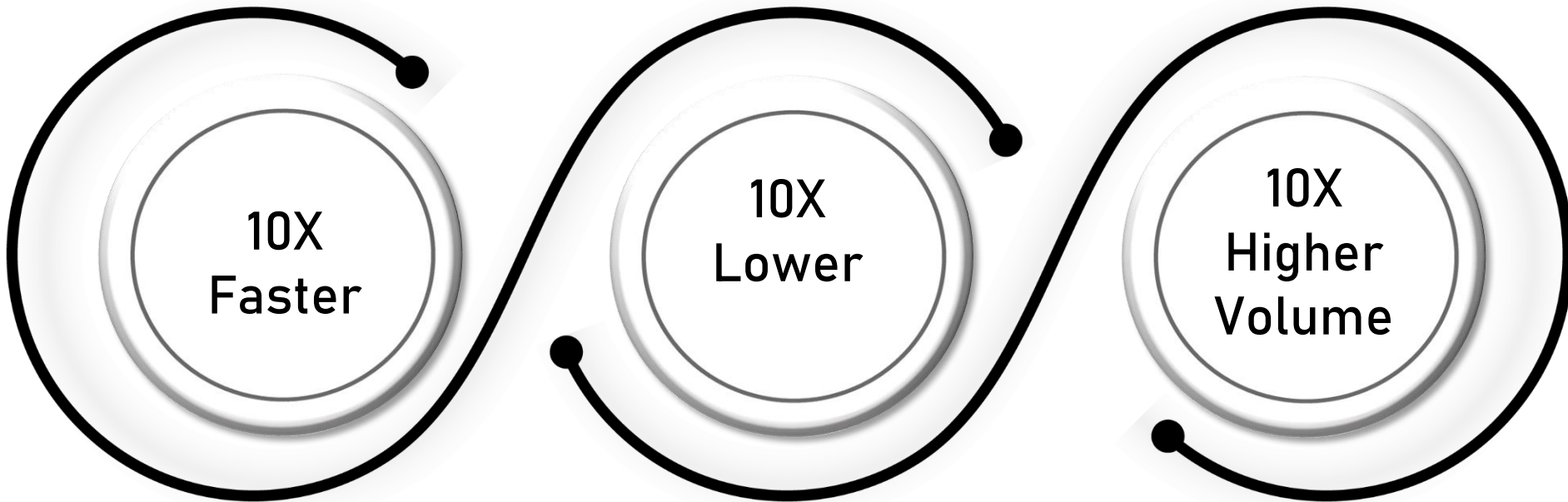
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Curley's Law



Curley's Law – 10X benefits



10X Faster Diagnosis of Rare Disease
10X Faster ID of Chronic Disease
10X Faster Cleaning using UV Robot

Virtual Ward 10X Lower Cost
10X Lower Admission – Heart Failure
10X reduction in Death Skin Cancer

10X bed capacity increase using Hosp at Home
10X Higher Screening rates using Digital Assist
10X Increase in Monitoring Rate of Patients

Intel VP Martin Curley – digital is the best medicine for our sick health systems (video)

by John Kennedy

🕒 18 SEP 2012 📌 SAVE ARTICLE

Silicon Republic, 2012



LATEST NEWS



 This Irish scientist is helping us

Stay Left, Shift Left, 10x Digital Health Manhattan Manifesto

CHAMPIONING A NEW ERA OF DIGITAL HEALTH
THROUGH COLLABORATION, COOPERATION &
CHANGE



► Policy needs to embrace an “all-of-government” approach which incentivizes all participants in healthcare to improve essential health services at all stages of life through investment in digital and data strategies by:

- Enabling universal access to integrated shared health records.
- Move to an outcome-based healthcare model integrating high-quality data.
- Allocate financial and regulatory resources toward achieving digital transformation.



↑+ Stay Left,
Shift Left
10X



Maynooth University
National University
of Ireland Maynooth



Stay Left, Shift Left 10x Manhattan Manifesto



The Manhattan Manifesto

People are at the centre of healthcare.
Empower people, their families and communities to achieve health and wellness.

Health is "Whealth"
Healthcare is an essential contributor to economic wellbeing & growth.

Recognize and address the unique challenge faced by women and girls in accessing health care

Seek Government commitment to allocate 6% of public healthcare spending to digital health

Provide leadership through a national digital health body that is outcomes oriented.

Embrace the Health Data Governance Principles as a step towards global standards.

Be agile. Be rapid. Drive the step change.

Align funding instruments to support value-based healthcare for people, communities and populations.

Improve access to globally available data to provide evidence for personalised healthcare.

Utilise digital technology and data to improve the quality of acute care and reduce harm

Drive towards eliminating disparities in health care delivery and inequity in health outcomes.

Embrace justice.



- ▶ Putting people at the centre
- ▶ Empowering people
 - ▶ Use Digital Health
 - ▶ Evolve services
 - ▶ Move from reactive to proactive



People at Centre



▶ **Health is**

- ▶ We n
patie
- ▶ Hea
- ▶ Hea
- ▶ Healthc



Health is Wealth



3

- ▶ Recognise girls in

en and



Empowered for Wellness



6%



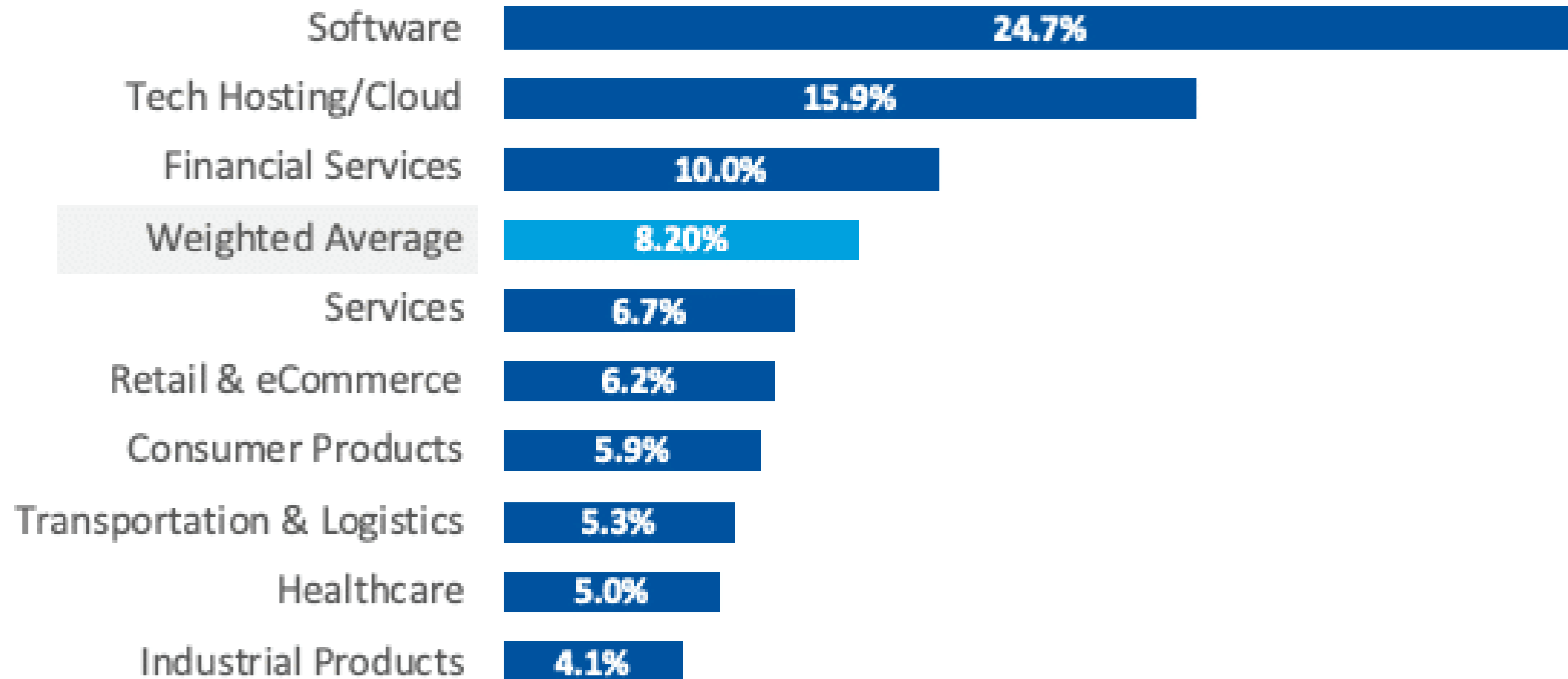
Funding Digital Health

- ▶ Government spending
- ▶ Invest in health
- ▶ Legal structure support region
- ▶ Move part of
- ▶ Align funding investment



IT Spend by Industry

% of revenue



5

► Provide
outcomes

OUTCOMES ORIENTED



NATIONAL
DIGITAL HEALTH
BODY

It is

Active
Participation

Integrated

Leadership thru National Digital Health



Building a 10X Mobile Health Ecosystem

Published on November 7, 2022



(c)HSE Ireland. www.ufinitylife



HSE Digital Transformation

↑ + Stay Left,
Shift Left
10X

care⁺PLUS
PHARMACY



FULLHEALTH
MEDICAL



PATIENTS KNOW BEST[®]
THE PATIENT'S COMPANY

Google



eurofins



fitbit





**HSE Digital
Transformation**

navi
GROUP

**Health Elevator
Living Lab**

**Rapid Health
Assessment**

care+PLUS
PHARMACY





Stay Left,
Shift Left

10X

- “In an unstable complex system, small islands of coherence have the potential to change the whole system.”

Ilya Prigogine

Russian/Belgian physical chemist and
The Nobel Prize winner in Chemistry 1977

