

Digital Transformation – Bootstrapping your way to success

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SOCIAL SERVICE SUMMIT 2025

Transforming the Future of Social Service through Talent and Technology



About Me

SAF



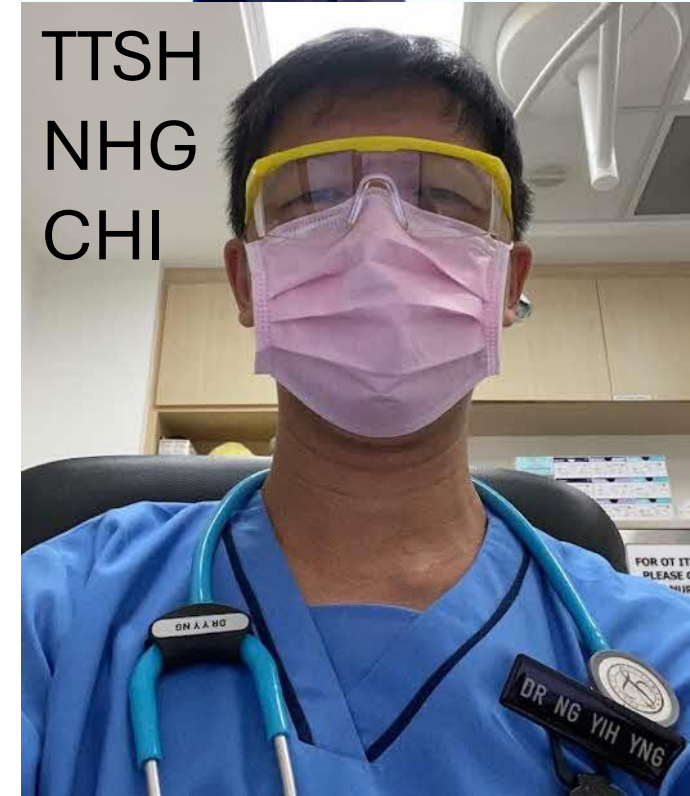
SCDF
MHA



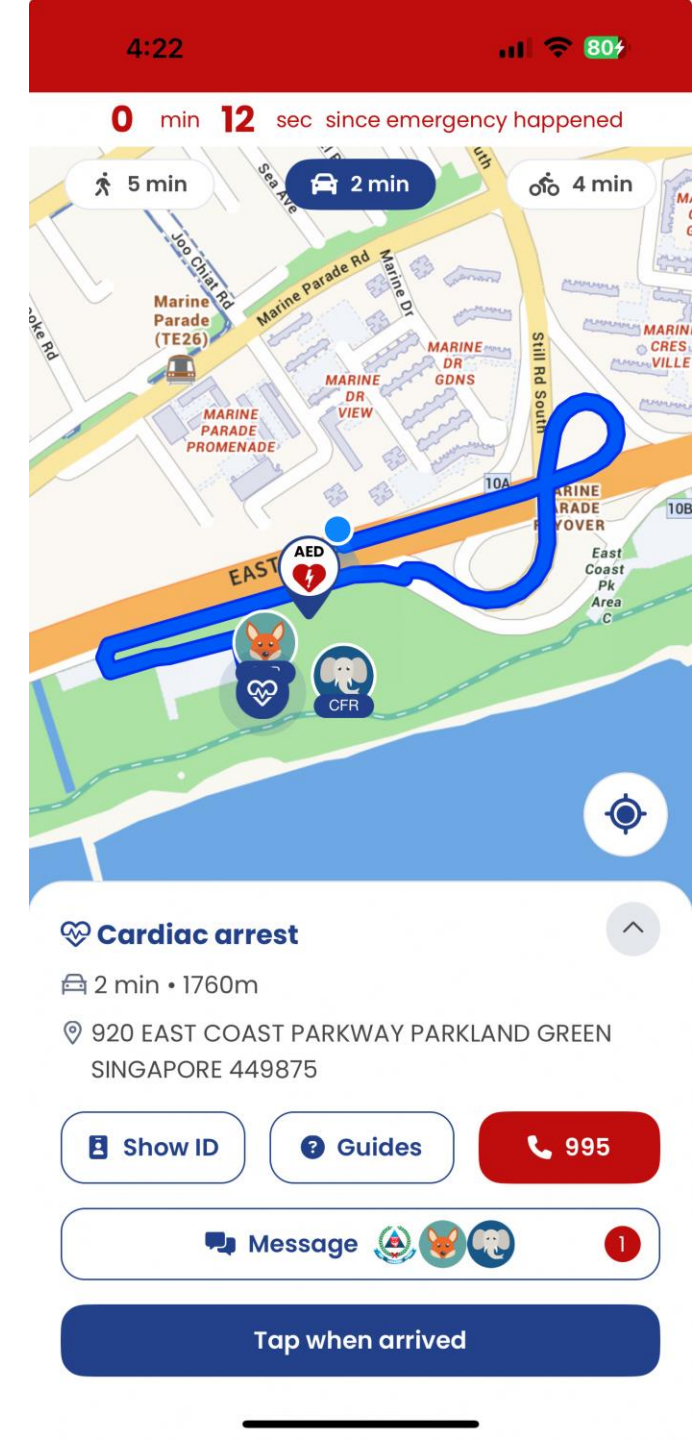
MOH
Duke-NUS
SSHPH
NTU



TTSH
NHG
CHI



A couple of examples of my work



SERVING CITIZENS AND BUSINESSES BETTER THROUGH TECHNOLOGY

- Initiatives that make Citizens' lives better
- Initiatives that create opportunities for Businesses
- Initiatives that build a better home and community

MyTransport.SG

- 140,000 commuters enjoy one-stop, personalised journey planning daily

PayNow

- 2.3 million registered mobile and NRIC registrations for instant funds transfers

Business Grants Portal

- 19,000 business grants applied through this one-stop portal
- 15% savings in businesses' time and opportunity costs

MyInfo Business

- 220,000 SMEs benefiting from ease of pre-filling business data at UOB, OCBC and DBS

Networked Trade Platform

- Under 1 hour to process trade permits, down from several days
- Single platform for managing trade permits than across multiple Declaring Agents
- 1,400+ businesses having one-stop access to trade financing and supply chain management services

MyInfo

- 5 minutes to apply for bank accounts and credit cards with pre-filled information and instant approvals, down from 3 days

SingPass Mobile

- 190,000 users seamlessly logging in without need for passwords

Healthy 365

- 1.7 million sign-ups walking to a healthier lifestyle through tech-enabled National Steps Challenge™

Moments of Life

- 2,000+ births electronically registered without queuing and manual form-filling since 2018
- Child immunisation records accessible on-the-go

Parking.sg

- 15 million coupon-free parking sessions and \$3.3 million in refunds since 2017

myResponder

- 39,000+ citizen life-savers around you
- 13 heart attack victims saved

Dementia Friends

- More than 40 missing seniors with dementia assisted through app community

OneService

- 90% of 290,000 municipal cases resolved within 11 days, down from 16 days

Smart Gravitraps

- About 50,000 traps deployed in HDB estates to monitor Aedes mosquito population

*Thank you to our citizen volunteers, innovative companies and all who have contributed to our Smart Nation!



FACEBOOK



TWITTER

YOUR TIP-OFFS



FREE STARHUB GO

with 1 Gbps fibre broadband

Sign Up >



LIFELINE: Madam Michelle Lim meeting Mr Ken Gong for the first time yesterday since his cardiac arrest last month.
TNP PHOTO: PHYLLICIA WANG

WOMAN HELPS SAVE MAN USING NEW SCDF PHONE APP

PHONE APP HELPS WOMAN SAVE CARDIAC ARREST VICTIM

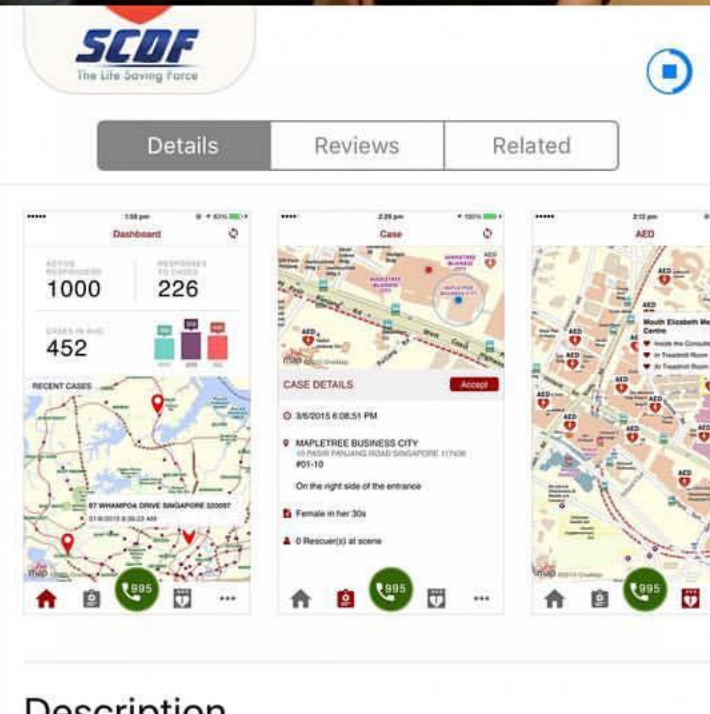
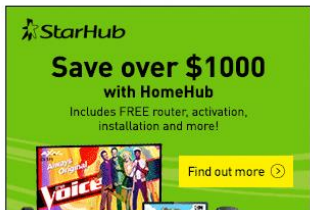
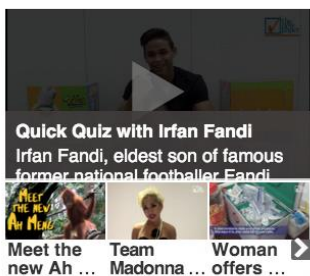
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Feb 19, 2016 6:00am

BY NABILAH AWANG

A woman who teaches cardiopulmonary resuscitation (CPR) helped save the life of a cardiac arrest victim after being alerted to him by a phone app.

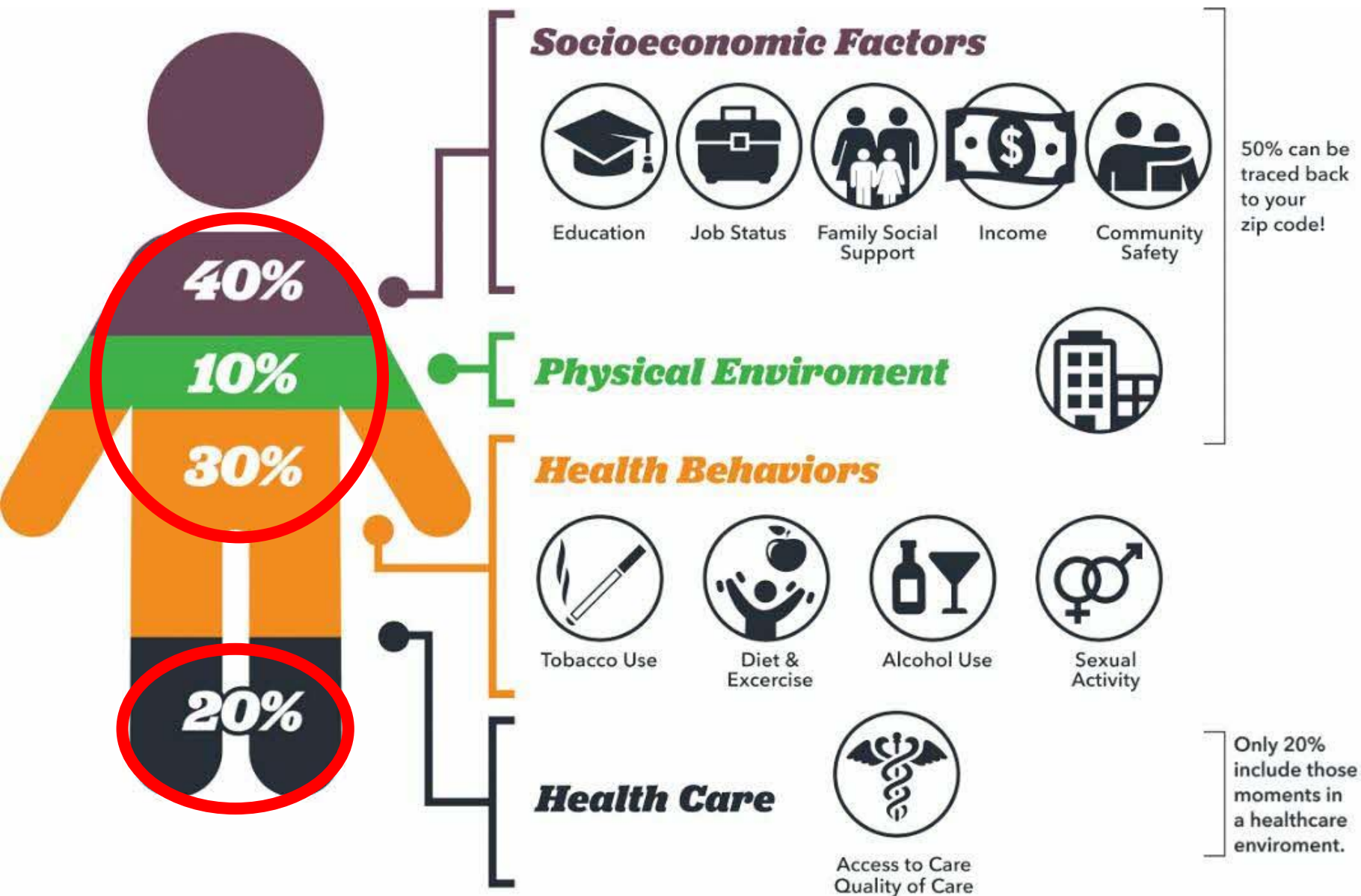
96% FAILED this test
Can you answer it?
How many matchstick are there?



Description

Why we do the things that we do





Social Determinants of Health

- Income and social protection
- Education
- Unemployment and job insecurity
- Working life conditions
- Food insecurity
- Housing, basic amenities and the environment
- Early childhood development
- Social inclusion and non-discrimination
- Structural conflict
- Access to affordable health services of decent quality.

Health and Social Sector Challenges



Limited
Funding

Legacy
Systems

Inertia
to
Change

Low
Digital
Literacy

Siloed
Systems

Data
Privacy
and
Security

Digital
Exclusion

Money no enough...



We are very good at following rules

“....If it's not written in the Government
I.M. it can't be done. ...” – Sterotype No.13

<http://mothership.sg/2014/04/17-types-of-civil-servants-you-meet/>

Digital Determinants of Health

“**literacy** in *information* and *communication technologies* and **access** to *equipment, broadband* and the *internet*” — <https://www.who.int/docs/default-source/documents/gd4dhdaa2a9f352b0445bafbc79ca799dce4d.pdf>.

#DigitalDivide

5 Elements of Digital Inclusion



Internet

Affordable, robust, broadband internet service



Training

Access to digital literacy training



Support

Quality technical support



Content

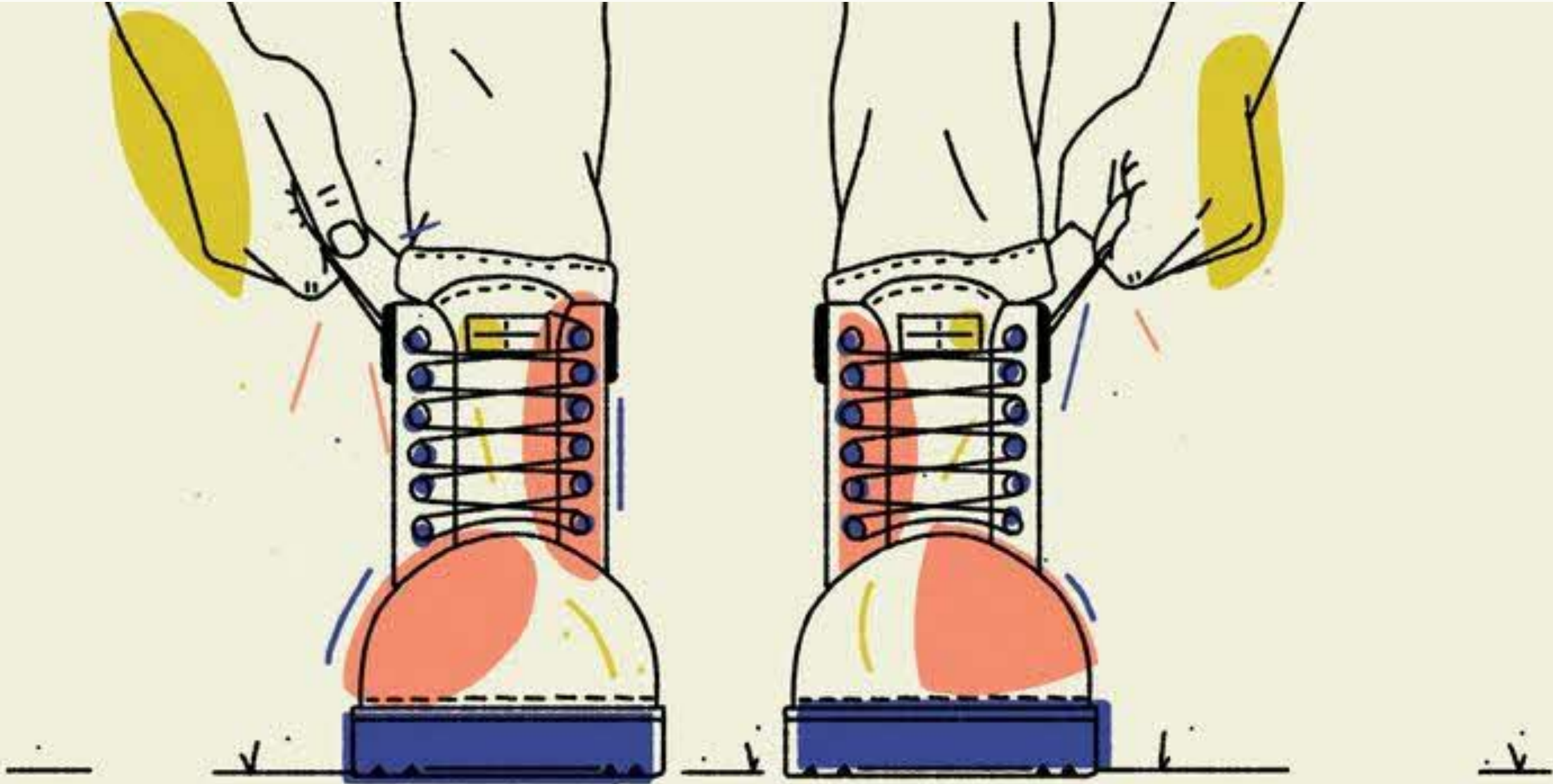
Content designed to enable self-sufficiency, participation and collaboration

Devices

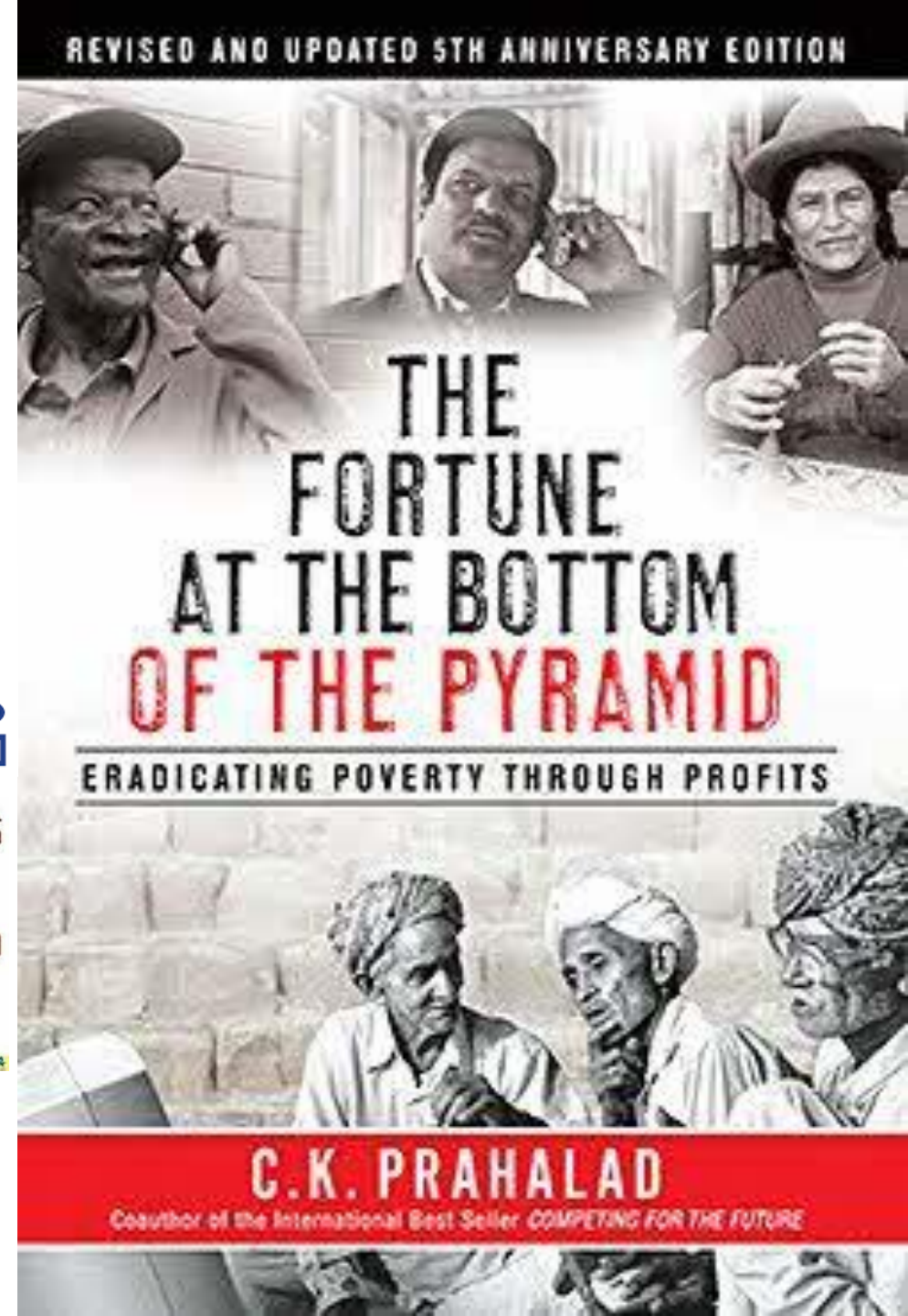
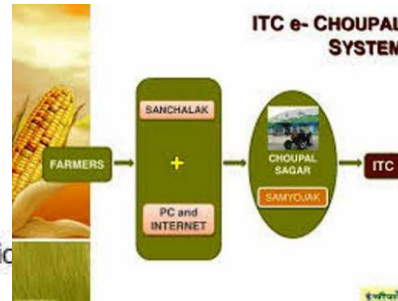
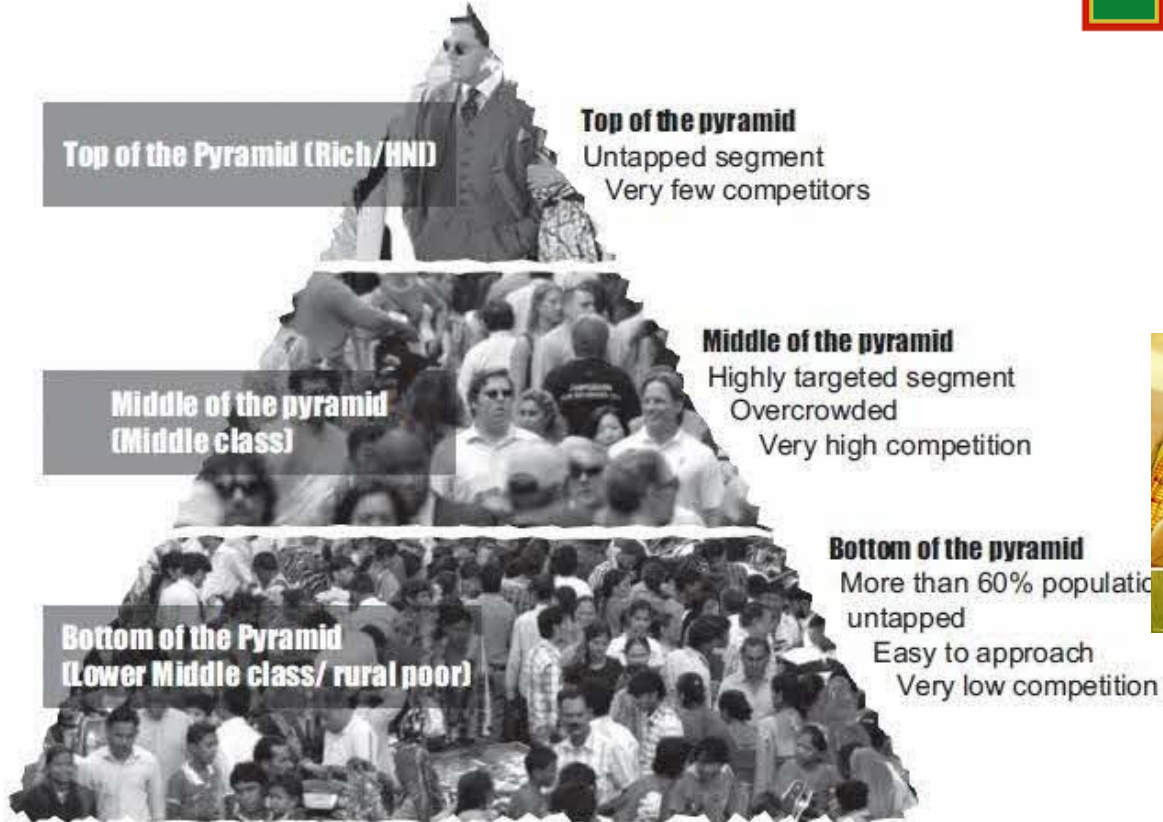
Internet-enabled devices that meet the needs of the user



Bootstrapping



Business models that works well in the hospital will struggle to work in the community



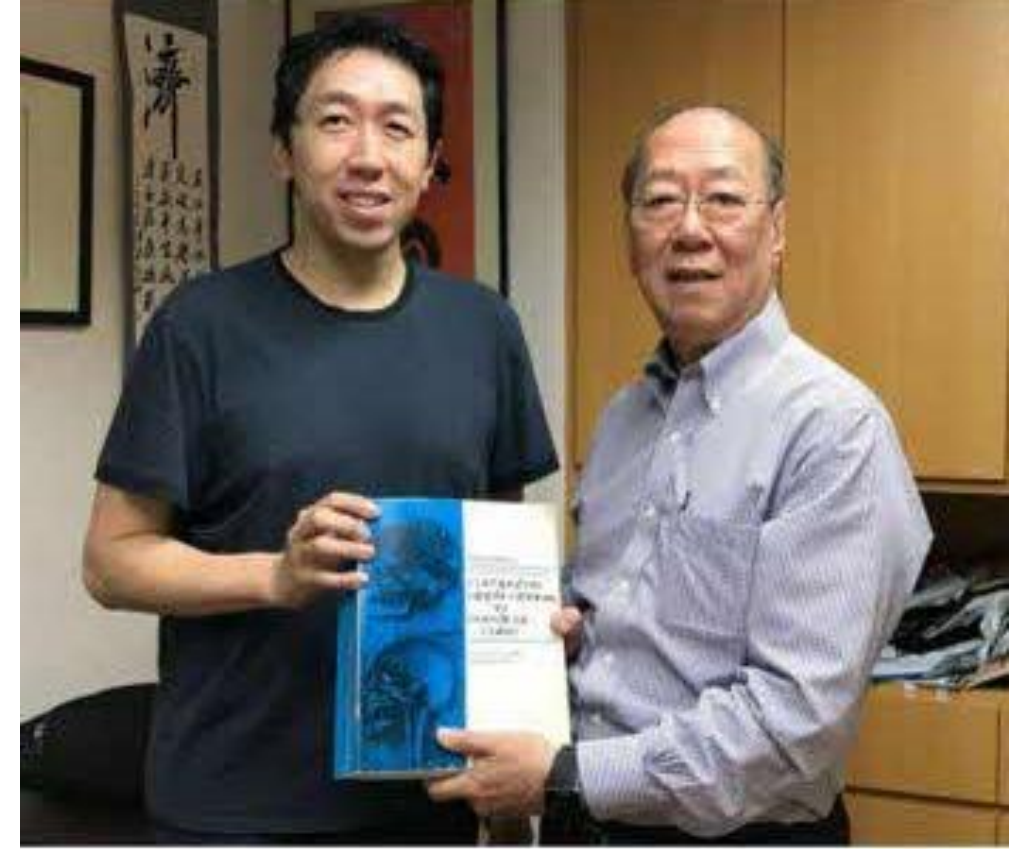
Learning for Free!

The Coursera logo, featuring the word "coursera" in a bold, blue, sans-serif font. The "c" is stylized with a circular element.

UDACITY



<https://www.ricemedia.co/culture-people-after-son-cofounded-coursera-became-earliest-student-completed-146-courses/>



Ronald Paul Ng, 78 years old haematologist is the father of Andrew Ng, founder of Coursera. He has completed 146 courses!

Learning AI is more and more accessible





5 Courses

- Introduction to Healthcare
- Introduction to Clinical Data
- Fundamentals of Machine Learning for Healthcare
- Evaluations of AI
- Applications in Healthcare
- AI in Healthcare Capstone

Stanford
ONLINE

Feb 5, 2024

Joseph Polizzi

has successfully completed the online, non-credit Specialization

AI in Healthcare

Artificial intelligence (AI) has transformed industries around the world, and has the potential to radically alter the field of healthcare. In this specialization, we discuss the current and future applications of AI in healthcare with the goal of learning to bring AI technologies into the clinic safely and ethically. This specialization is designed for both healthcare providers and computer science professionals, offering insights to facilitate collaboration between the disciplines.

The online specialization named in this certificate may differ in material from courses taught on-campus, but the included reports are not equivalent to on-campus courses. Participation in this online specialization does not constitute enrollment at this university. This certificate does not confer a University grade, course credit or degree, and it does not verify the identity of the learner.

Verify this certificate at
<https://coursera.org/verify/PB3KULPSXJF4>

Have you used your SkillsFutureSG?



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Attitude | Skills | Knowledge

WHAT IS SKILLS*future* SG?

An Essential Guide for Singaporeans



There is innovation to be found in any environment



Enhancing SAF's emergency medical support system with MobileMET

Report by Rachael Lim | Photos by Benjamin Lee

What happens when a soldier collapses in camp or during training?

The Singapore Armed Forces Medical Corps' (SAFMC's) three-tier emergency medical support system, adopted from international resuscitation protocols, kicks in immediately.

The soldier's buddy or any military personnel nearby immediately calls the medical centre and performs Cardio-Pulmonary Resuscitation or CPR on the casualty, while waiting for the medics to arrive. This first tier is termed Buddy Aid.

After assessing the soldier's condition, the medics provide Basic Life Support by applying the Automated External Defibrillator (AED) to determine if the soldier has a shock-able heart rhythm and if so, administer AED shocks on-site. Air is also introduced into the casualty's lungs and CPR continues. This is the second step.



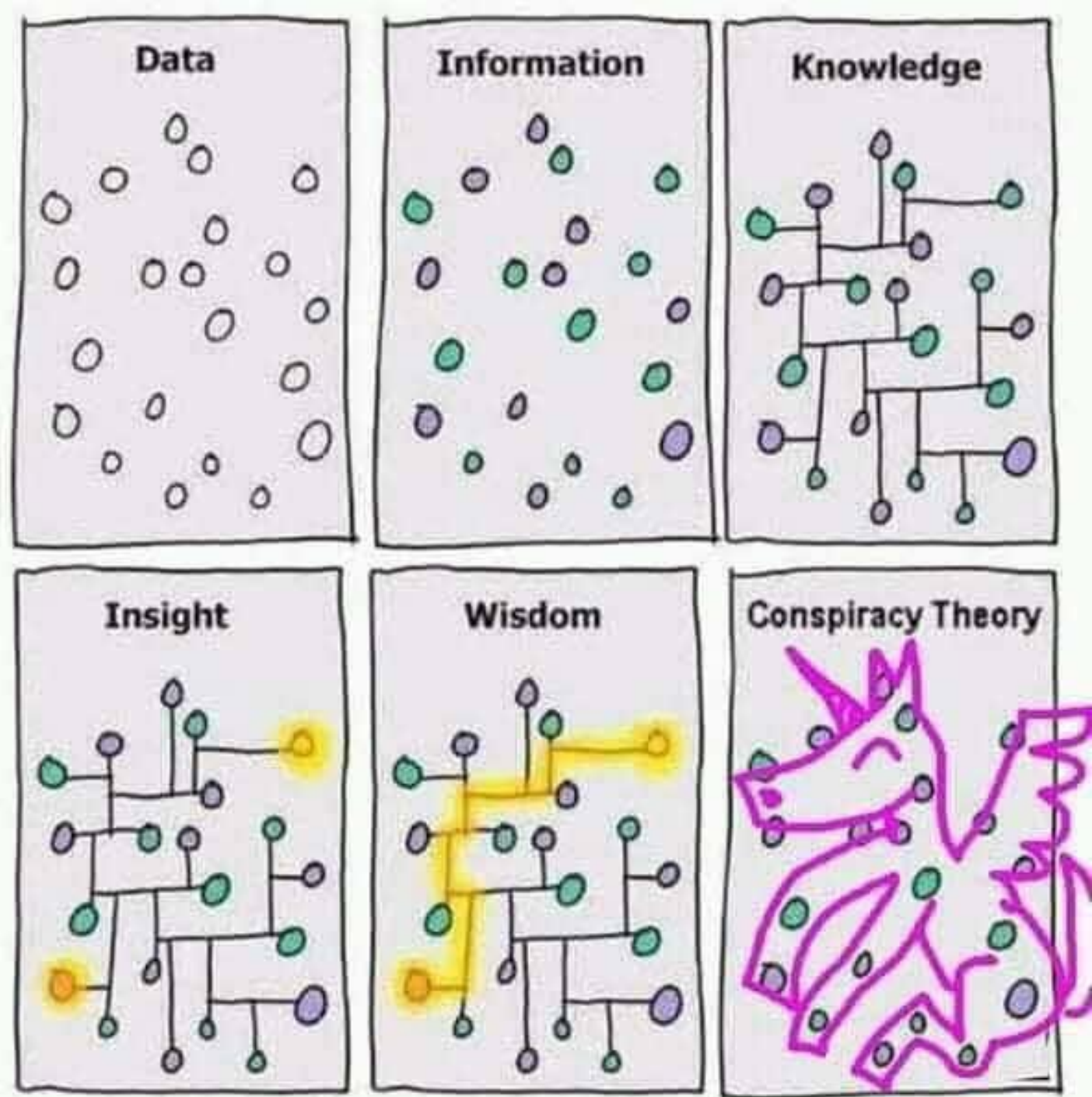
Basic Life Support is administered in this simulated emergency situation. While one medic (left) applies AED, the other medic (right) introduces air into the casualty's lungs. The buddy (centre) continues CPR while the stretcher (background) is prepared to send the casualty to the medical centre.

A lot of
innovation is
simply applying
existing ideas to
a different
context



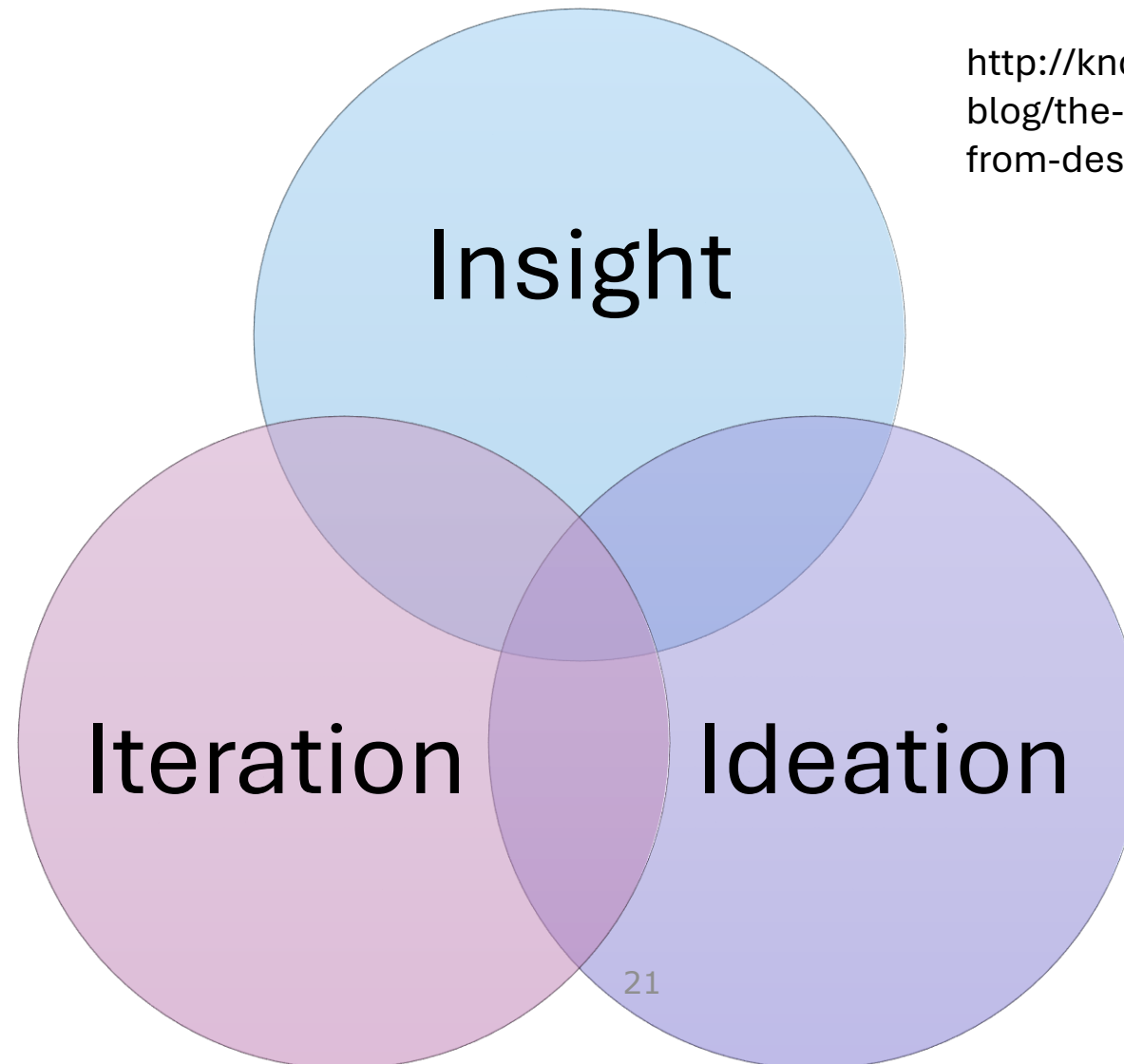
What is an innovation mindset?

- Is it just the ability to connect dots?
- Why do some people do it better than others?
- How can you be better at it?



(NOT A) Secret Formula for Innovation

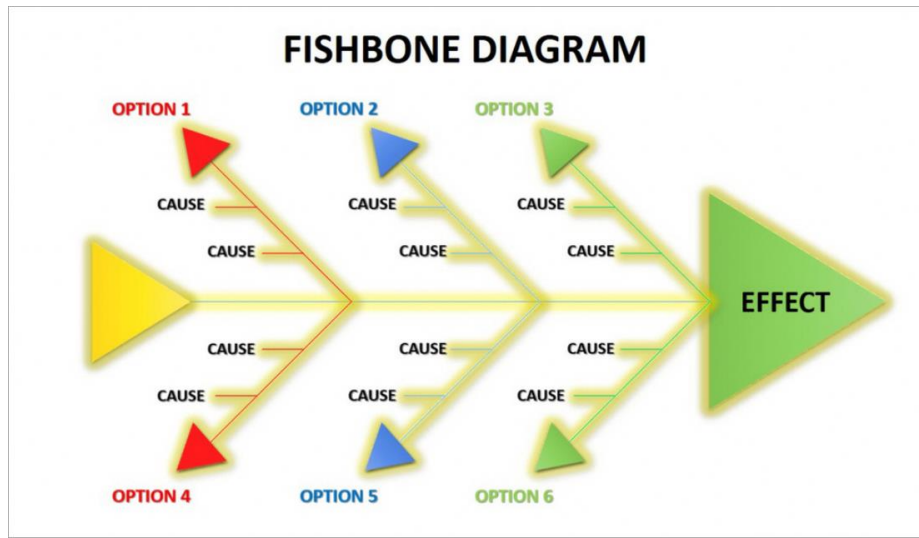
<http://knowledge.insead.edu/blog/insead-blog/the-innovative-organisation-learning-from-design-firms-3833>



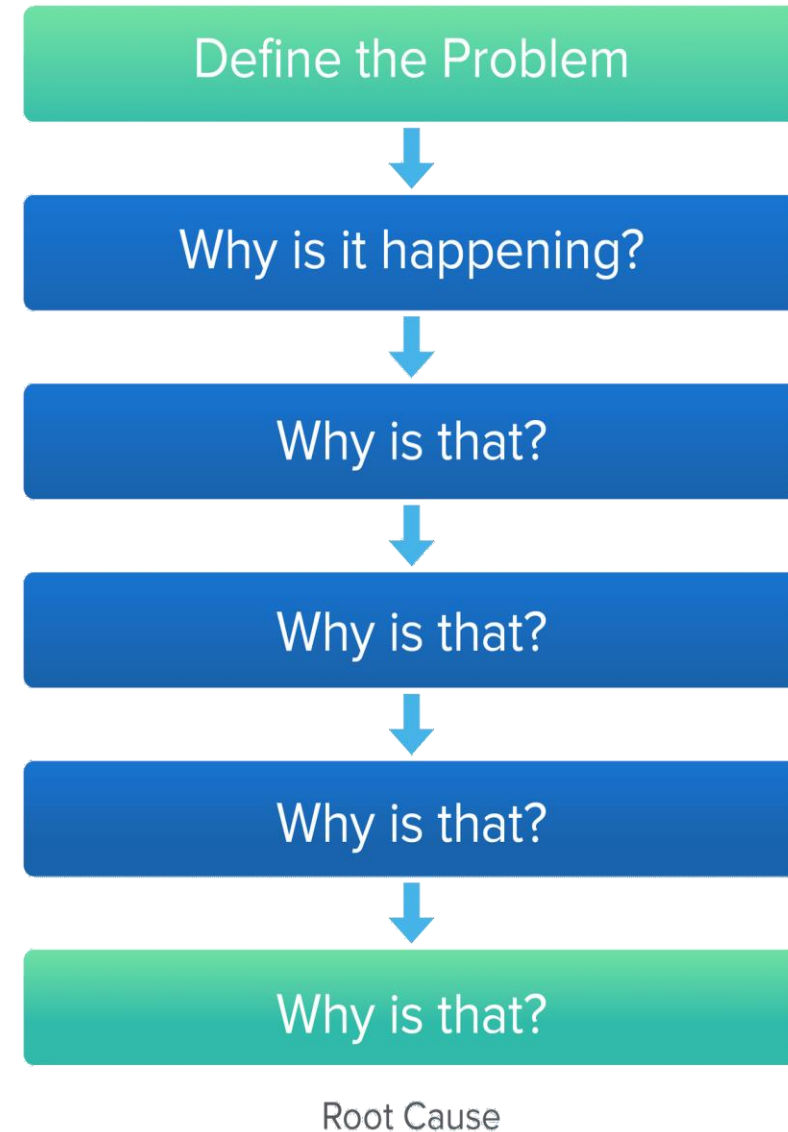
INSIGHT

- The 5 Whys
- Root Cause Analysis
- Clinical Practice Improvement Program

“Go as deep as you can into the issue”



The 5 Whys



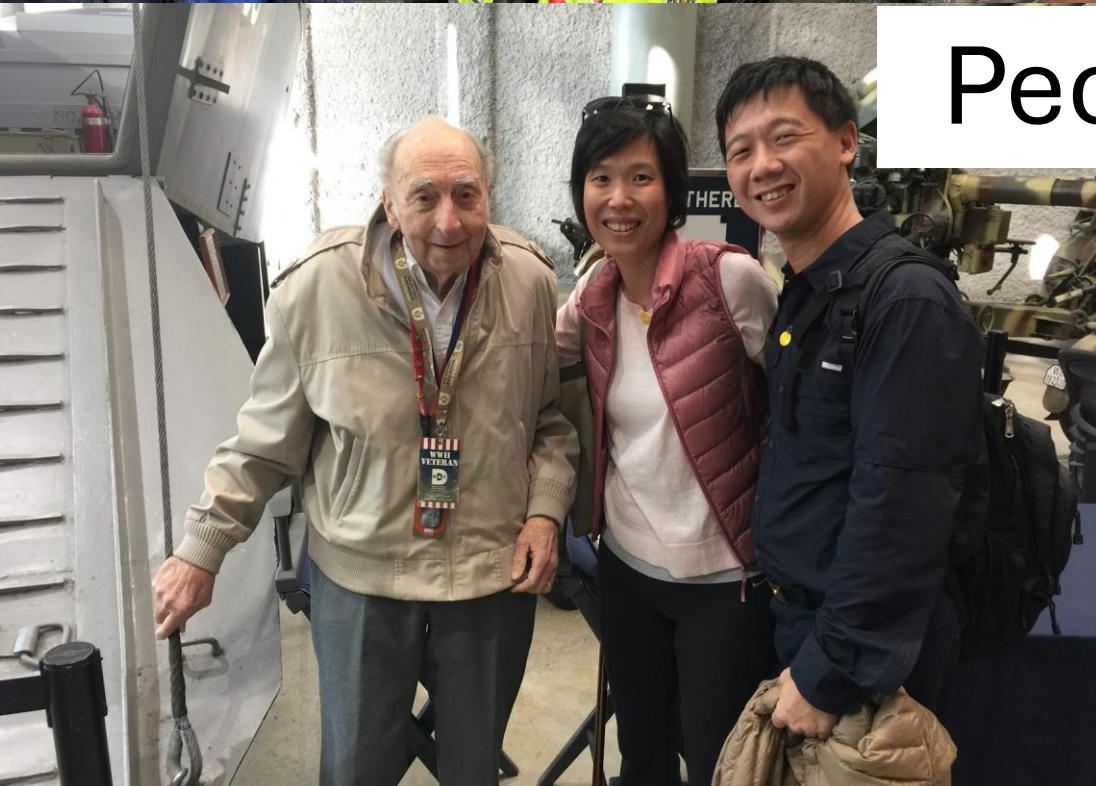


IDEATION – where do ideas come from?





People and Places!

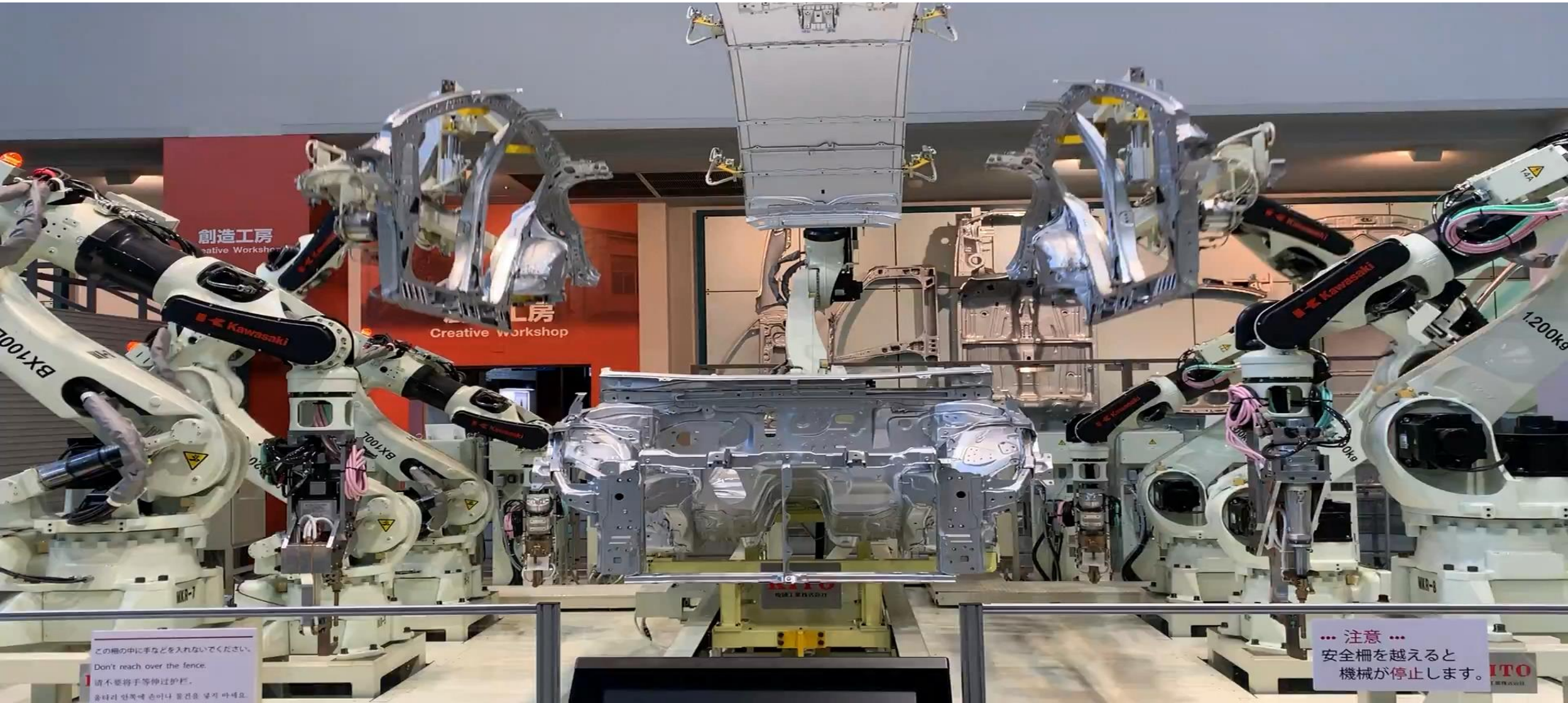


Ideating Well

- Avoid group think – Embrace diversity
 - Gender
 - Racial
 - Age
 - Skeptics!
- Make it safe to share
- Encourage participation from all

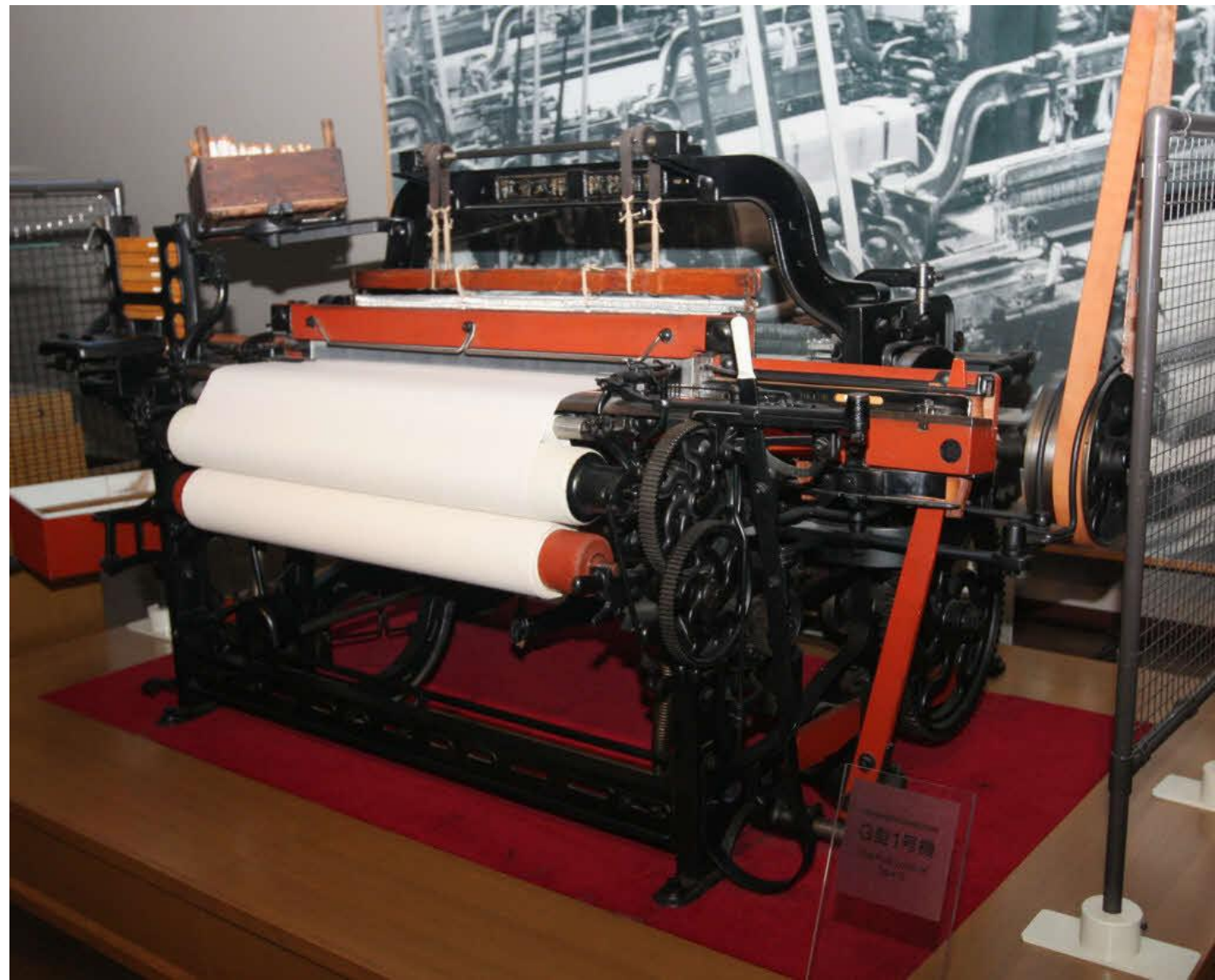


Iteration – Guess what Japanese company this is?





Any guesses what they originally did?



How do you pivot from weaving to cars?

- 2 Handed loom
- 1 handed loom
- Steam powered loom
- Oil powered loom
- Automatic looms
- loom engine → car engine



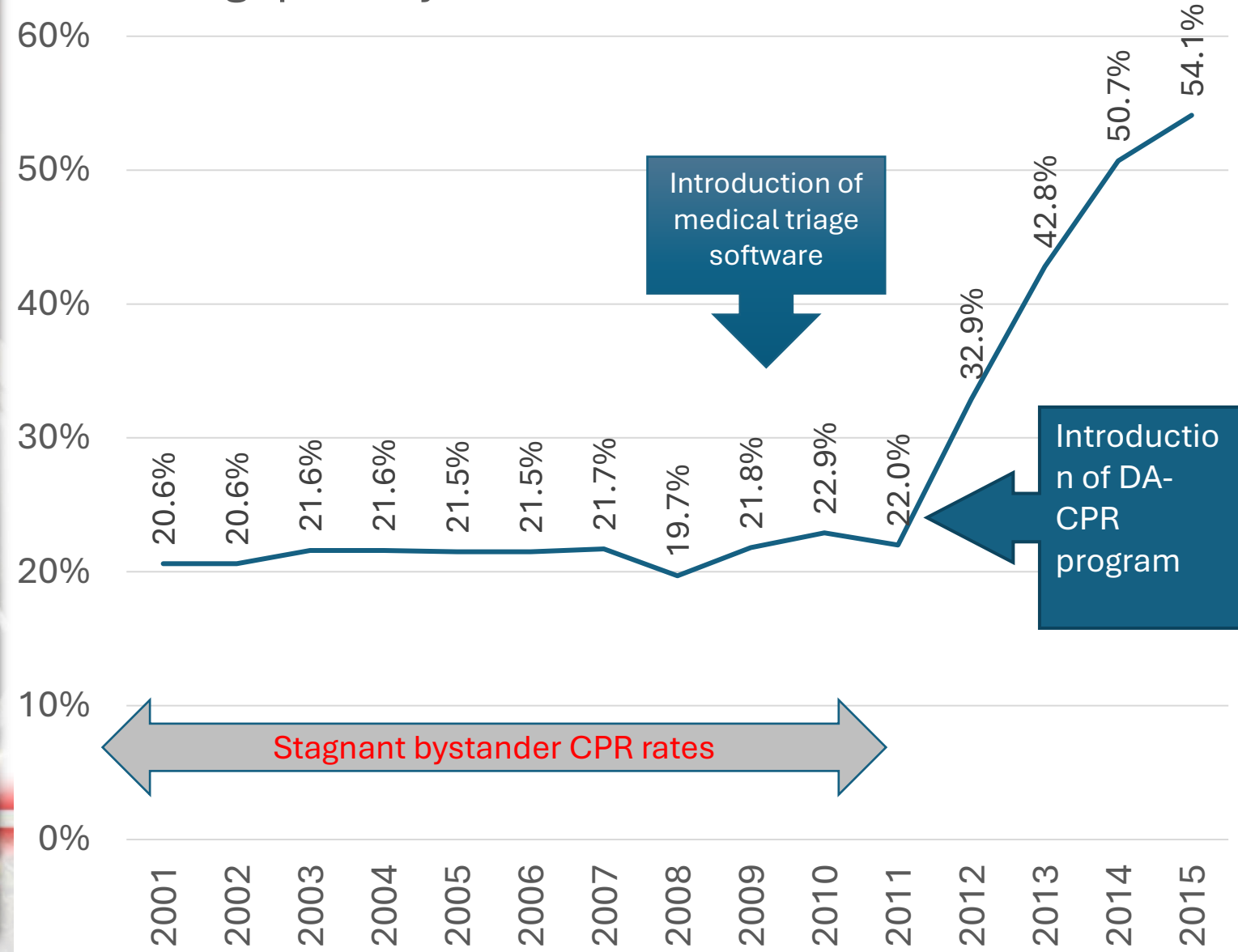
- Visits to US/UK weaving factories
- Continuous experimentations
- Prototyping
- Incremental improvement
- Cutting waste (LEAN)

Still Sounds Difficult? Here's a
few more tricks

Dispatcher Assisted CPR in Singapore (22% to 54% in 4 years)



Singapore Bystander CPR Rates 2001-2015



g

He teaches panicky 995 callers to do CPR



Photo: ST

Tuesday, Feb 12, 2013
The Straits Times
By Jalelah Abu Baker



MHA 3i AWARDS 2014

Highest innovation accolade in the Home Team

This year, we celebrate and recognise 32 Award Winners for their impactful contributions in the areas of Ideas, Improvements and Innovations (3Is)!

Congratulations to the IO project teams of this year's "Home Team Innovation of the Year Award (Process/Policy Innovation)"!

Your innovation is outstanding and will significantly boost the Home Team's operations and service delivery. Well Done!



Dispatcher-assisted CPR
By Team DA-CPR



Innovative queue system at ICA Services Counter
By New Queue Management System Project Team



PolCam
By Team Police Camera Project



Automation of the CSD Access Control Gantry Points for vehicles
By Team HTVTS Branch



Revamped NPP
By Team Revamped NPP



Automation of Armoury
By Team FAB 5



One-time authorisation and smart report
By Team One Time Only



Chinese New Year Bypass Plan
By Team Coldsteel



Electronic FORMS System
By CNB eFORMS Team



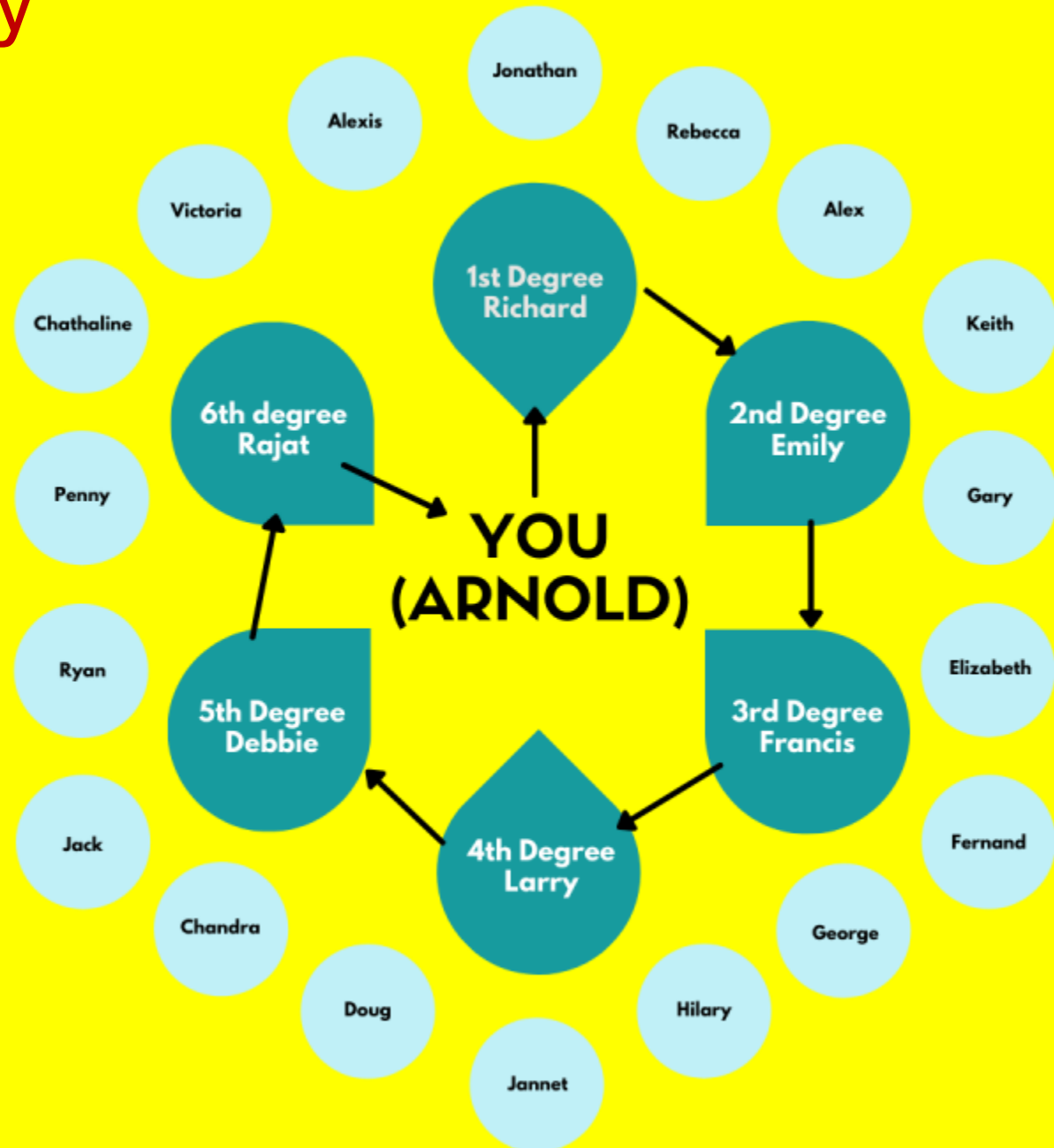
Extending the useful life of the press rubber cushion
By SCORE Laundry Maintenance Team



You will be surprised by
who you might know!

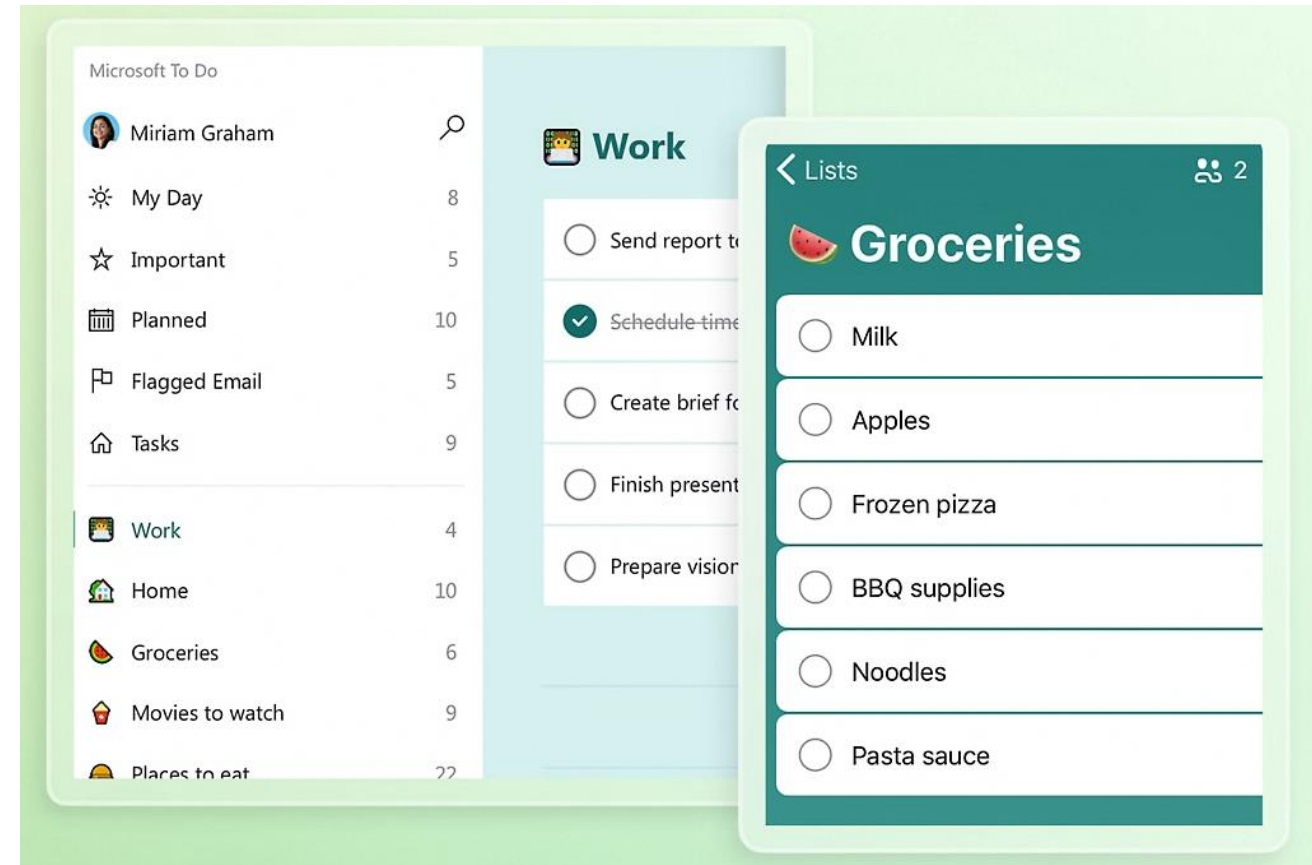
6 DEGREES OF SEPARATION

A CHAIN OF
"FRIEND OF A FRIEND"



Illustrated By Keith Yuki Isobe Based On The
References from Frigyes Karinthy (1929) and
John Guare (1990)

Be as prepared as you can!



Where does cardiac arrest occur in Singapore?



Housing
(71.4%)



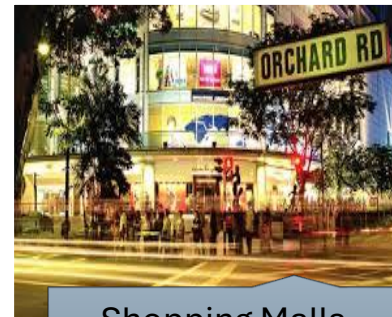
Vehicles (7.1%)



Medical Facilities
(5.9%)



Offices (2.8%)



Shopping Malls
(2.4%)



Roadside (2.4%)



Sports Facilities
(1.6%)



Community Clubs
(1.4%)



Checkpoints (1.0%)



Hotel (1.0%)



Transport (0.9%)

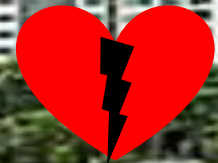
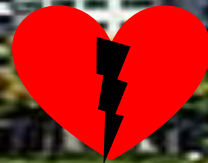
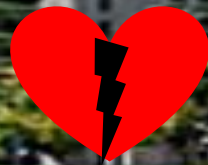


Schools (0.7%)

CPR guidelines are written in USA and Europe which rarely have high-rise residential housing

Artist's Impression

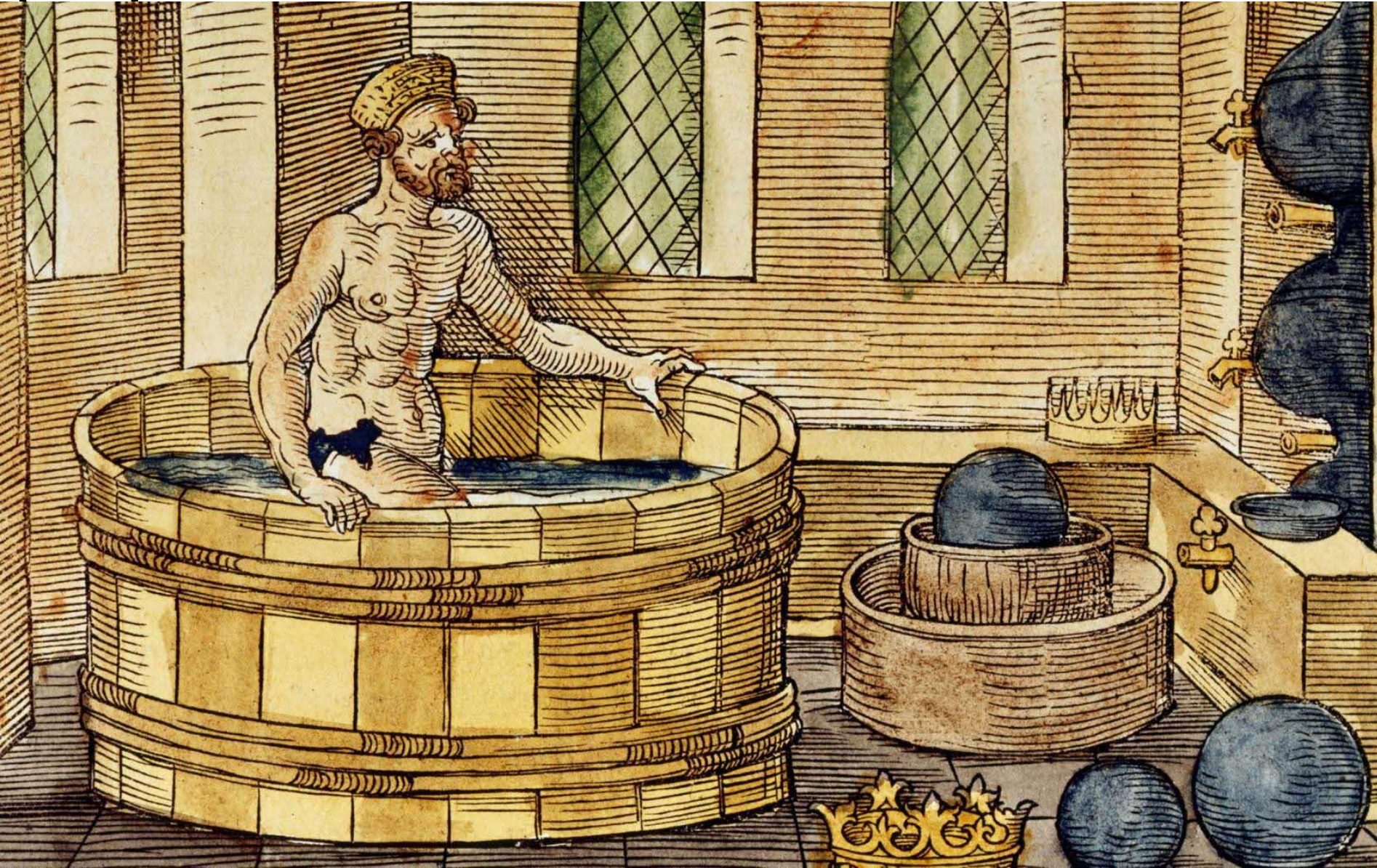
Govt
housing
20
-
40
Floors!



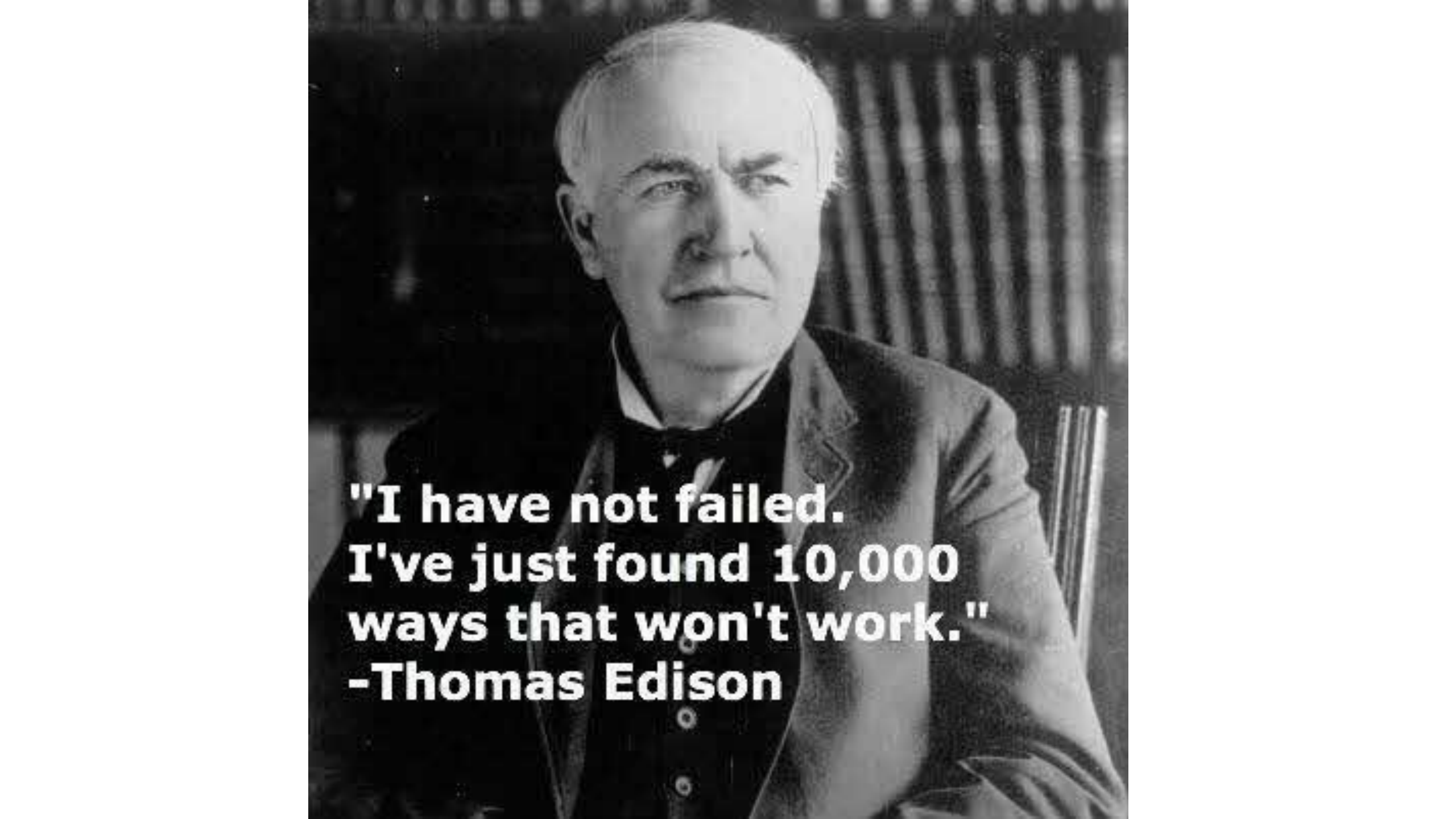
We put the data together
and the deal was done for 5000 AEDs!



Most of us DO NOT have Eureka moments - be prepared to fail....



- Cheap
- Fast
- Often

A black and white portrait of Thomas Edison, an elderly man with white hair, wearing a dark suit and a high-collared shirt. He is seated and looking slightly to the right of the camera with a serious expression. The background is dark and out of focus, showing vertical lines that could be bookshelves or a wall.

**"I have not failed.
I've just found 10,000
ways that won't work."
-Thomas Edison**

Bootstrapping health education



<https://www.youtube.com/watch?v=RXjTK05U2Ag>

Summary

- Innovation is a volume game, the more you do, the more you are likely to succeed. Keep it low stakes, cheap and plentiful.
- Read, attend courses, use ChatGPT for ideas! Borrowing ideas and adapting from leaders is the best form of flattery.
- Have very thick skin – don't be afraid to ask for insight, help or suggest something that has never been done before.

Thank You!



Yih Yng Ng

EMS, digital public health and
AI innovator

