"All my passwords are protected by Amnesia"
Sign outside Men's shed, Aged Care Centre

Welcome! As the pandemic sharply accelerated digital adoption and virtualised work, the Optus/Medibank/..others data breaches have acted as a short-circuit, triggering national urgency of cyber process, policy, regulation and governance and raising penalties significantly.

This month, we provide data and insight on a closely related topic – Board-level technology governance. We review data from Australia as well as various approaches and models that Boards can take based on McKinsey research.

We also look at the top global concerns in 2022 - which perhaps British PM Truss fatally failed to fully appreciate – and we review how genome sequencing is on the cusp of transforming healthcare.

Our book recommendation this month, couldn't be more timely given the current cyber turmoil, and well worth reading.

Previous Newsletters, including this one, are available on our site in pdf HERE

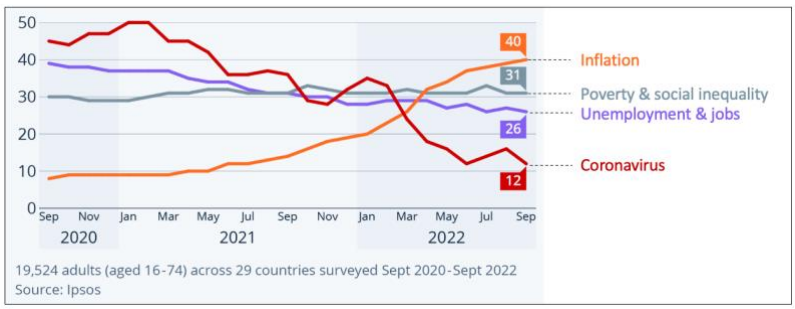
CONTENTS:

Top global concern in 2022 - Inflation

LINK

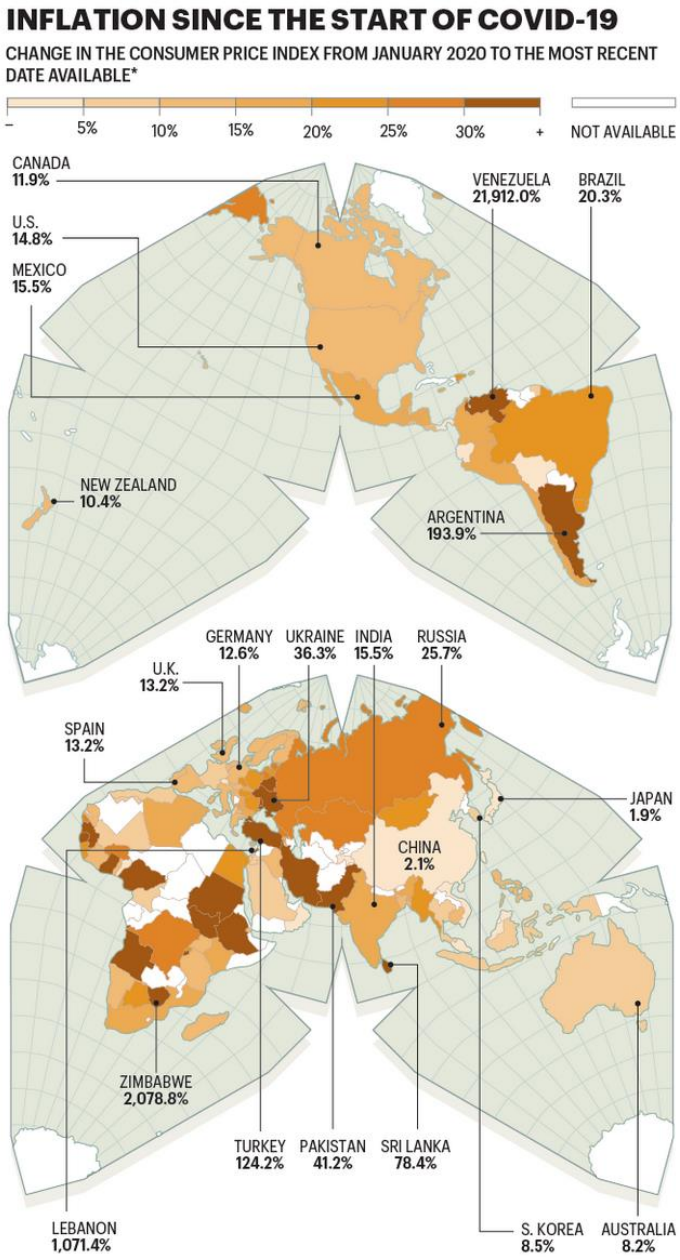
In less than two years, we have had a global pandemic, ongoing war in Europe, droughts, floods, an ongoing energy crisis, pervasive data breaches and skyrocketing inflation.

What is the leading global concern in September? According to a survey of nearly 20,000 adults conducted by Ipsos in 2021, it was the pandemic. Today it is inflation. See the graph.



Inflation Becomes the Leading Global Concern in 2022. Source: Statista LINK

The diagram below shows how much inflation has changed since the start of Covid-19 and why it is dominating politics across the globe. *Fortune Oct 2022* [LINK]



Effective Board-level technology governance

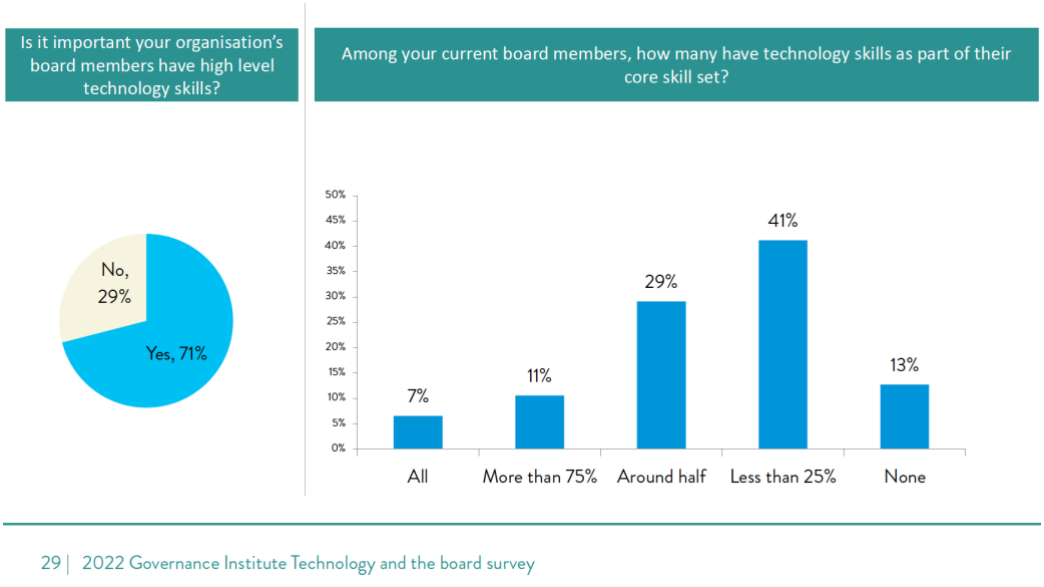
"In 2020 and 2021, companies in these industries that had a Board tech committee had operating margins 100-600 basis points higher than their peers that did not have tech committees", LINK

The recent Optus data breach is a painful example of why this is such an important topic. However, it is merely one of several areas of technology that could have serious business consequences.

Technology cuts across so many organisational and strategic areas of business including strategy, capability, partnering, business integration, privacy and risk, that Board (and government) leadership has never been more critical.

In August, the Governance Institute of Australia released a report highlighting how Boards are currently tackling technology challenges, where (some) Boards risk falling behind and how and why they should strengthen their approach. LINK

The report identifies two key areas in need of sharper focus/attention - Board technology skills and Data management/protection (assumably the former impacts the latter).

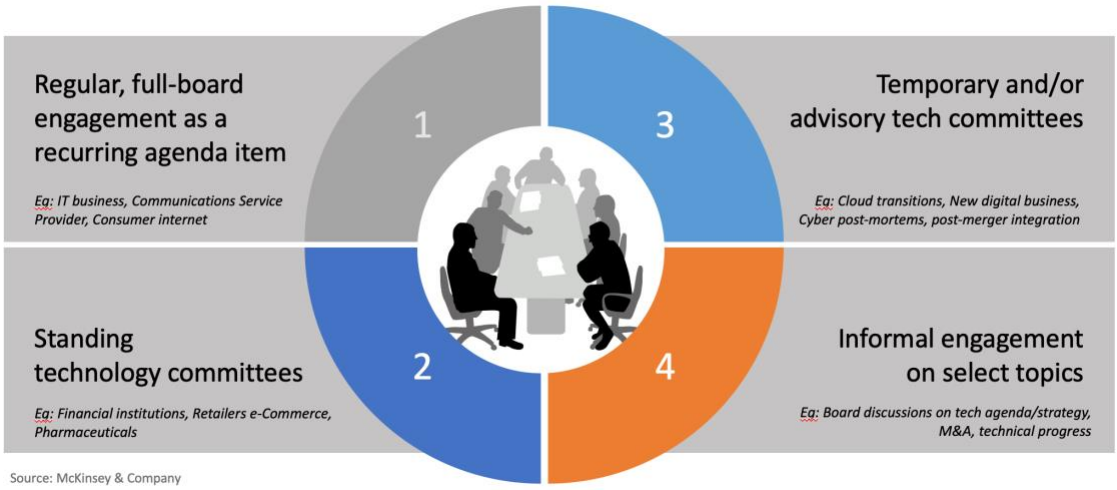


Technology skills on the Board

The key research findings include:

- 41% say less than a quarter of their board members have technology skills as part of their core skill set, and 13% have no directors with digital skills
- 93% say the board should be involved in technology issues but 34% say their board is not dealing competently with tech issues. 47% say this is due to a lack of tech skills and education among board members
- The top three technology related issues currently facing organisations were:
  1) Risk of cyber attack (62%)
  2) Data governance challenges (49%)
  3) Staff technology skills/knowledge (48%).

McKinsey identifies four effective models through which boards engage with management on technology issues – see diagram.

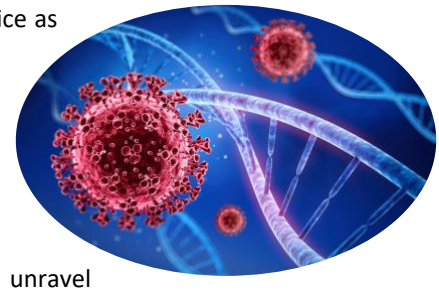


Models for Board engagement with technology (diagram adapted from McKinsey)

These will vary depending on the size of the company, the nature of the business and the maturity of technology adoption.

Fast, cheap genome sequencing is here

***"As we look to the next decade, we believe we're entering the era of genomic medicine going mainstream"**, Francis deSouza, Illumina's CEO* LINK



This month, Illumina announced a machine that can crack genomes twice as fast as its current version — and drive the cost down to $200 a pop.

The human genome is made of more than 6 billion letters and each person has a unique configuration of As, Cs, Gs, and Ts — the molecular building blocks that make up DNA. The Human Genome Project took 13 years and thousands of researchers. The final cost: $2.7 billion.

That 1990 project kicked off the age of genomics, helping scientists unravel genetic drivers of cancer and many inherited diseases while spurring the development of at-home DNA tests, among other advances. Next, researchers started sequencing more genomes: from animals, plants, bacteria, and viruses.

Ten years ago, it cost about $10,000 for researchers to sequence a human genome. A few years ago, that fell to $1,000. Today, it's about $600.

At an industry event in San Diego in September, genomics company Illumina unveiled what it calls its fastest, most cost-efficient sequencing machines yet, the NovaSeq X series. The company, which controls around 80 percent of the DNA sequencing market globally, believes its new technology will slash the cost to just $200 per human genome while providing a readout at twice the speed. Illumina's CEO claims the more powerful model will be able to sequence 20,000 genomes per year; its current machines can do about 7,500.

Sequencing has led to genetically targeted drugs, blood tests that can detect cancer early, and diagnoses for people with rare diseases who have long sought answers. We can also thank sequencing for the Covid-19 vaccines, which scientists started developing in January 2020 as soon as the first blueprint of the virus's genome was produced.

At this price point, we may now be close to a tipping point in healthcare in which trial-and-error is minimised if

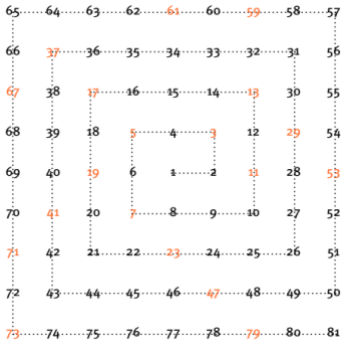
not, eliminated and we can provide accurate detail on both the problem and the remediation.

Ulam spiral

The Ulam spiral (or Ulam prime spiral) was discovered by Polish-American mathematician Stanislaw Ulam. He placed the number 1 in the centre then began spiralling the counting numbers around it.

But when he then looked for the primes* they tended to occur along diagonals.

**Prime numbers are numbers that have only 2 factors: 1 and themselves*

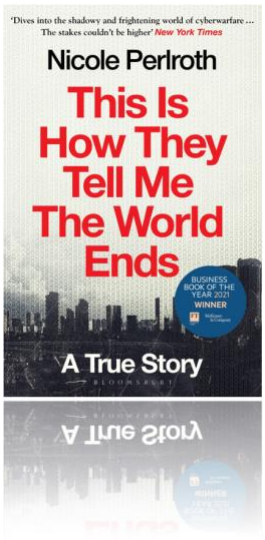


This Is How They Tell Me the World Will End: The Cyber Weapons Arms Race

Nicole Perlroth LINK

"This is what the new era of asymmetrical cyberwarfare looked like. The United States could strike a country's critical infrastructure with cyberattacks, but when foreigners retaliated, U.S. businesses would be left holding the bag."

With Cybersecurity awareness month in the US coinciding with our own more shocking local version, this book could not be more timely.



Before deciding whether the Optus incident was 'basic' or 'sophisticated', it is worth reading this book. Most people are simply unaware of the maturity, complexity, depth and pervasiveness of cyber crime – actually - cyber war.

Written almost as a spy thriller, this is the untold story of the cyberweapons market - the most secretive, government-backed market on earth - and a terrifying first look at a new kind of global warfare.

Zero day: a software bug that allows a hacker to break into your devices and move around undetected. One of the most coveted tools in a spy's arsenal, a zero day has the power to silently spy on your iPhone, dismantle the safety controls at a chemical plant, alter an election, and shut down the electric grid (just ask Ukraine).

For decades, under cover of classification levels and non-disclosure agreements, the United States government became the world's dominant hoarder of zero days. U.S. government agents paid top dollar - first thousands, and later millions of dollars - to hackers willing to sell their lock-picking code and their silence.

Then the United States lost control of its hoard and the market.

Now those zero days are in the hands of hostile nations and mercenaries who do not care if your vote goes missing, your clean water is contaminated, or our nuclear plants melt down.

"No longer content to be the world's cheap manufacturing hub, Beijing had dispatched its country's hackers to steal trade secrets from innovators abroad, the vast majority of them in the United States, and were now passing billions, by some estimates trillions, of dollars' worth of American research and development to China's state-owned enterprises".

Filled with spies, hackers, arms dealers, and a few unsung heroes, written like a thriller and a reference, This Is How They Tell Me the World Ends is an astonishing feat of journalism. Based on years of reporting and hundreds

of interviews, The New York Times reporter Nicole Perlroth lifts the curtain on a market in shadow, revealing the urgent threat faced by us all if we cannot bring the global cyber arms race to heel.

Stay connected

Kevin

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