THE POLITICS OF INNOVATION

It is fantastic to be back here in Singapore where there is so much energy on the streets that it is like having a psychic defibrillator

and great to be talking to this group of blockchain pioneers, people who are at the cutting edge of a new and still infant technology

whose possibilities the whole world is now struggling to assess

and given the huge controversy that already surrounds some use cases, given all the delicacies and sensitivities

I will do my best to tiptoe through the minefield tonight

with the tact for which I am famed

You have chosen the right place for this conference, because Singapore is one of the most innovative societies on earth

the birthplace of the USB stick and countless other developments in IT

a place where they are tackling the problems of global food supply with such daring innovations as synthetic lobster meat and vertical tomato farms

where they long anticipated the needs of pandemics by inventing the infra red temperature scanner that you just point at people’s foreheads

to say nothing of the Singapore sling whose formula was invented in the Raffles hotel

and here in Singapore, every day, your outstanding scientists and researchers are working on all the problems that afflict humanity, from climate change and species loss to the immediate crises in global supply chains and energy markets

and whether a Singapore sling is really the best cure for jetlag

and the reason I am fundamentally optimistic is that all these challenges are fixable

fixable with technology

and I want to talk tonight about the technological innovations that will save us today and enrich future generations

I want to advance a four part theory of innovation, because it seems to me that when human beings make any great and momentous discovery we lurch through four phases

first fear

then scepticism about the use case

then some speculative mania that is followed by the bursting of a gigantic bubble

and finally – amid the debris - lasting and unmistakeable progress

Let us take the balloon itself – a perfect visual metaphor for the innovative cycle

When the first hydrogen balloon took off in 1783 and took its first human passenger 15 miles across the countryside near Paris, the peasants were so outraged and frightened by the apparition that they attacked it when it landed

As for the use case, Dr Johnson told his friend Hester Thrale in the same year that he couldn’t see any purpose in them whatever

an observation that was inevitably followed by a complete balloonomania in the UK, as hundreds of thousands started to turn out to watch the balloon launches, and coaches were designed to look like balloons, women wore balloon designs on their undergarments and special balloon hats and all kinds of balloon related merchandise

and the mania lasted three years until 1786, when it was all over. The balloon bubble burst, and people said it was a lot of hot air

but of course humanity had taken a giant step even if we did not quite see it at the time

If it had not been for the obsessive daring and egotism of those balloonists we would not have begun the astonishing progress towards the powered flight that landed me last night in Changi airport

or take the railways – and again, step one was fear. The first thing the first train ever did – Stephenson’s rocket – was to run over and kill a member of the British cabinet – William Huskisson, president of the board of trade

proving that British politics is a risky business

and the public were so alarmed that they believed that train travel at 30 mph would do irreparable damage to your spine

and some doctors said that the rattling and jolting was likely to cause unnatural sexual excitement

until of course the whole country became convulsed by the railway mania of the 1840s, the most colossal stock market bubble of the 19thcentury in which the British middle classes were persuaded to make disastrous investments in railway projects in places they had barely heard of in latin America or the United States

and yet even after that bubble had so spectacularly detonated the result was lasting change in the whole of UK infrastructure

and private companies were sufficiently well capitalised to build the world’s first underground trains in London in 1863, suddenly enabling people to commute to the heart of the city and lengthening London’s lead as the most productive city on earth

a lead that it has hardly lost to this day

and then of course we come to the greatest revolution of all – the discovery of the power of machines to process and transmit information

First we were fearful of these superintelligent machines that could take over our lives – think of the Hal the clinically depressed and homicidal computer in Arthur C Clarke’s 2001 published in 1968

and then there was scepticism about the use cases – from the President of IBM who said that there would be a maximum world market for five computers – admittedly in 1943 – to Ken Olsen, president of the Digital Equipment Corporation who brilliantly prophesied, in 1977, “there is no reason why anyone would want a computer in their home”

pure genius – or the New York times technology expert who predicted that Apple would never produce a mobile phone

give that man a pulitzer

and humanity proceeded from this gloriously erroneous apathy to a series of manias and bubbles – not least the dotcom bubble that burst in 2000 with such a massive loss of share value and some famous company names

at the end of which in spite of all the delirium and delusions the progress is still enormous

and thanks to the internet our lives are being transformed both in London and in this amazing city state where innovators every day put the app into singapore

and so the lessons are clear from the four stage cycle

The fear is almost certainly overdone. It is the residue of ancient superstition

Remember that humanity has been paranoid about technological progress since the titan Prometheus gave us the first living flame concealed for some reason in a tube of fennel

and the ancient Greeks decided that Zeus must have punished him for his effrontery by chaining him for eternity to a crag in the tartarus mountains and causing an eagle to come and peck at his liver

as if we should feel guilty about technology which is absurd

because most technology is not in itself dangerous, let alone sinful. It is morally neutral

and the second lesson is that the scepticism about the practical use is also generally wrong

We may not find the right use case first time – I think of the vacuum cleaner tycoon and nuclear power enthusiast who prophesied in 1955 that everyone would soon have a nuclear powered vacuum cleaner

not quite there yet

and the third lesson is that when there is a mania, when there is a bubble, and when you have speculators who are simply driving up the price of some new technology by finding a wider and wider pool of punters to exploit

then you do need measures to protect the public against Ponzi schemes

and the final and most important lesson is that in the end all these revolutions have changed the world for the better

and helped to give new chances to young people, and lengthened their lives

and given that it is now so urgent to find new solutions for our problems of climate change or an ageing population

cheaper greener power

new drugs and treatments for dementia

we need to optimise the conditions in which those breakthroughs can happen

and if there is a recipe for innovation the number one ingredient is a free and open society

Let me say that there are all sorts of reasons for wanting such a society – in addition to innovation - and I hope people will not mind me saying that this has been a pretty terrible year for the world’s coercive autocracies

Putin is going to lose in Ukraine and the zero covid policy of Xi Jing Ping is palpably failing

Both leaders appear to be locked into disastrous policies in which their egos are personally engaged

and the problem is that there is no one to contradict them

no free media to dissent, no backbenchers to rebel

and even if democracy has its flaws I would say that events of the last year confirm that it is the worst system in the world apart from all the others

and this year has also confirmed that it is the free market open pluralist democracies that are the best at technological innovation

who has been vaccinated against covid? did you have sputnik? did you have sinovac or sinopharm

There is no easy way to say this but the difference between the vaccines produced by the free market democracies and the others was pretty clear

one set worked and the others did not

There are all sorts of reasons why that might be the case

If you have to answer to shareholders rather than party bosses, if you are driven by scientific rigour and free market competition, then you are perhaps more likely to produce a vaccine that survives and works in the global marketplace

but there are other reasons as well – and they are all to do with the people, the innovators themselves

In which country was the first approved and effective covid vaccine administered ?

I will give you a clue. It was the same country that invented the steam engine, the machine gun, the jet engine, the first civilian nuclear reactor, the MRI scanner, the world wide web, penicillin

the country that has four of the top ten universities in the world

and where one Cambridge college has won more Nobel prizes than Russia and China combined

and which according to the Straits times is ranked even higher, by some measures, than Singapore as a home of innovation

and yes of course it is partly a question of government commitment – and I can tell you that the UK is determined to entrench its status as a science superpower

we have more or less doubled the research budget and we have created a new Advanced Research and Innovation Agency modelled on the American DARPA

and it is not just about getting the right regulatory framework – though that is vital

One of the reasons we had the world’s first vaccine and the fastest vaccine roll-out in Europe was because Brexit allowed our Medical Health regulation authority to give the first approval

and that meant we came out of lockdown faster than any other European country

and saved lives at the same time

but even if you get the funding and the regulation right you will not produce an innovative society

You need the talent to want to come and live there

and so let me ask you – do you think freedom-loving people, offbeat original minds, will want to live in a society where journalists are shot and free speech suppressed and where LGBT rights are officially scorned?

Will they want to go and do their researches in a place where covid protestors are locked up by riot police and where the entire senior leadership of the communist party seems to contain not a single woman?

Innovation happens where you have a fizzing cyclotron of cultures and ideas

where brilliant people can go to the best live music venues and eat in the best restaurants – and at one stage London had more Michelin stars than Paris, until the French panicked and started handing out Michelin stars in a slightly north Korean way

Innovation happens when people can say exactly what they think and meet whomsoever they choose and love whomsoever they choose and provided they do no harm to others to live their lives as they choose

That is the secret

that is why the UK has a new tech unicorn every fortnight – more than France and Germany and Israel combined

and above all innovation happens in societies that are open and outward looking and turned to the world

and willing not just to exchange people but ideas with their friends

and if you want an example of how exchange between the UK and Singapore has already changed the world I give you hevea braziliensa

the Brazilian rubber tree that never did well in Latin America because of leaf blight

until the 1870s when a man called Henry Wickham stole 77,000 seeds and germinated them in Kew Gardens

and then took 22 seedlings to the Botanical gardens in Singapore where they flourished so mightily and grew so strong and tall that the latex gushed from them in spurts

and that is why it is so fantastic to see that exchange continuing today

huge Singapore investments in the UK, and the number of UK firms in Singapore up from 4500 in 2019, in spite of covid, to 5,700 today

and just imagine if that rubber miracle had not happened

Imagine if that Kew-germinated seedling had not been planted in Singapore soil

there would be Malayan rubber industry, no rubber industry at all

no Burberry macs, no condoms, and no rubber tyres to drive the automobile revolution of the 20th century

So let’s hear it for the openness that produces the intellectual ferment and cross fertilisation that produces the flash of originality that drives innovation

and lasting progress

and let’s hear it for the Singaporeans and Brits flowing between our countries

with the boinging bouncing irrepressibility of the rubber balls that we jointly introduced to the world

There is no gold nor oil nor coal nor iron under the streets of Singapore

there is only the power of the human imagination

the power to see how a mildewed Brazilian shrub can change the fortunes of humanity

and it is that innovative power that we celebrate tonight

Thank you all for listening