



## **37th ANNUAL TACITUS LECTURE**

The Worshipful Company of World Traders  
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### **OPENING**

The word, people most often use to describe me is optimistic.

It's a quality that I inherited from my mother, Paula.

I learned many powerful lessons from her.

Having miraculously survived the horrors of Auschwitz, she felt that nothing good came from dwelling on the past.

She could never tolerate a gloomy outlook and thought the best was always yet to come.

Today that attitude is, worryingly, falling out of fashion.

A sense of despondency, echoing across cultures and countries, brings many to the same simplistic conclusion: that the world is getting worse.

Now, of course, it's true that we are in an era of great upheaval and uncertainty—I am an optimist, not a Pollyanna.

I understand why a lot of people are less confident about the future in 2024 than they were even a decade ago.

Since then, the world has faced a pandemic, a resurgence of conflicts, the worsening impact of climate change, economic turbulence and disruption to global trade.

All the while, populism is on the rise.

Legitimate grievances, from the cost of living to border controls to growing inequality, fuel a sense of perpetual crisis.

The antidote to that is to implement effective policies that address people's concerns.

The forces of populism—a junta of politicians aided and abetted by accomplices in the mass media—derail these policies and instead stoke the fires of distrust, intolerance, cynicism and scepticism.

My worry, is that this all-pervading mood risks condemning us to a belief that humankind's condition is one of inevitable failure.

So I'm reminded of the late Swedish physician, Hans Rosling, who used a fact-based approach to challenge our biases and assumptions, when he would say: "Things can be bad—and getting better."

And in this lecture, I want to take on the negativity that abounds in three areas that define my professional life.

First, is the fear that engineering advances—and the pace at which they are happening—threaten to upend, maybe even end, life as we know it.

Second, is the argument that it is now too great a challenge to avert a climate inferno.

And third, is the view that the diversity, equity and inclusion agenda has gone too far.

As an engineer, as a pioneer of the energy transition, and as an openly gay business leader, I believe there is an alternative, more uplifting story to tell.

## **75 YEARS OF PROGRESS**

Before I get into that I want to start—very briefly—with some context of how far the world has come in my lifetime.

I think it is important, in times of anxiety, to zoom out just a bit and think in decades rather than years.

When you do, you see one clear and overwhelming pattern—a pattern of extraordinary progress.

Since I was born in 1948, almost 30 vaccines have been discovered or developed, eradicating or limiting the spread of many deadly and debilitating diseases.

In 1990, nearly 1 in 10 children died before the age of five. Now, it's more like 1 in 25—that's more than 7.5 million children saved every year.

Average life expectancy globally has increased by around 25 years since 1950.

Nutrition has improved because we are succeeding in the green revolution in food supply.

And whereas more than half of people around the world lived in extreme poverty 75 years ago, less than 10 per cent do today.

People are healthier and wealthier. They are also better educated.

Global literacy rates have climbed from just 36 per cent to more than 86 per cent in my lifetime.

## **ENGINEERING: OUR BEST HOPE OF PROGRESS**

The prime instigators of these remarkable advances are engineers.

It is engineers who invented and delivered the systems that expand knowledge and provide cheap and safe medicines, food, and water, and efficient and reliable sewerage and energy.

And this is the first reason that I'm optimistic.

The potential of science and engineering to solve our problems and shape our societies in positive ways has never been greater.

My mother's experience of prejudice and persecution made me long for a career where it was what you did that counted; where your work was evaluated on empirical evidence rather than beholden to someone's opinion.

That's why I became an engineer.

I wanted to solve practical problems and, if you think about it, engineering has stimulated or supported every important step forward in human history.

Even advances that we might not think of as engineering depend heavily on it.

Could Martin Luther King, Harvey Milk, Emmeline Pankhurst and other great champions of human rights have made their huge impact without the microphones, radio broadcasts and newspapers that amplified their messages and inspired the world to take a different path?

Every sector of human endeavour thrives from the influence of engineering.

Just look at recent winners of the Queen Elizabeth Prize for Engineering, which I chair, to be convinced of engineering's capacity to drive human progress.

We have honoured the pioneers of the internet and the world wide web, and those who laid the groundwork for medical advances in cancer, diabetes and heart disease.

The 2019 Prize was awarded to the developers of GPS. And in 2021 it went to those behind the creation and development of LED lighting.

These discoveries and the myriad other examples of ingenuity that propel our world forward are in many ways imperfect and unfinished.

Yet they have undoubtedly brought, along with their challenges, great social and economic improvements unimaginable on the day I was born.

Today, major breakthroughs in artificial intelligence are raising valid questions about its potential effect on how we live and work.

Like any new technology, it comes with complexities and issues that should not be underestimated.

While some understandably fear its impact, I am excited about the promise of AI—not least as an extraordinary new tool for engineers to create new materials and medicines, manage the use of scarce resources, and develop new forms of energy.

Ultimately, it all comes down to excellent implementation.

As with most revolutionary inventions, people are typically uneasy to begin with because they don't tend to trust business or government to introduce innovations to society in ways that benefit them.

But with judicious application and effective regulation, I believe we can create the incentives for leaders and institutions to ensure that AI becomes a trusted tool that can build a better future for all.

So despite the possibilities for abuse or misuse, and the occasional and highly-publicised failures of science and engineering, we must not succumb to the belief that we should slow the pace of innovation.

If that happens, everyone will lose out.

That said, we must think long and hard about how to react when implementation goes wrong so that we maintain public trust in the power of innovation for good.

The precautionary principle is not the answer.

Instead, we must strike a balance between the drive for progress and the need to preserve a stable society, including a more sophisticated way of looking at the risks created by advances in engineering.

Above all, we must recognise that it's not the invention in and of itself, but the way people choose to use it that determines its impact on society.

The great German engineer and philosopher Georgius Agricola understood this 500 years ago.

“Good men employ them for good,” he said, “and to them they are useful. The wicked use them badly and to them they are harmful.”

Then there are the unintended consequences with which I am very familiar.

Not least, how fossil fuels are the foundation of humanity's greatest advances since the 18th century—yet by using them, we have generated greenhouse gases and dramatically altered the planet's climate.

## **FROM CLIMATE CRISIS TO CLIMATE CORRECTION**

Which brings me to my second reason for optimism.

We are poised to embark on an energy transformation that takes us beyond the climate crisis into a new era of climate correction.

That rather simplistic statement—that emissions from burning fossil fuels change the climate—is now taken as undisputed fact.

It wasn't always that way.

In 1997, as CEO of BP, I gave a speech at Stanford University in California.

Together with my team, we decided that I should become the first leader from Big Oil to link greenhouse gas emissions to global warming and to set out urgent action the industry needed to take.

In keeping with my engineering instinct, we wanted BP—and, indeed, the whole of the oil and gas industry—to be part of the solution, not part of the problem.

This did not go down well with my peers, who deemed the plan existentially threatening—so heretical, in fact, that one industry body said I had “left the church”.

It wasn't until 20 years later that they got some divine retribution.

During an audience with Pope Francis, he told a group of oil executives, including me, that "civilisation requires energy, but energy use must not destroy civilisation".

That declaration at Stanford was arguably the birth of the energy transition.

So, a quarter of a century on, how are we doing?

Well, admittedly, it's a mixed picture.

If you look at atmospheric concentration of Carbon Dioxide—the single best, real-time signal of whether the world as a whole is on track to a safe future—then it's not too rosy.

Last year, the concentration levels of CO<sub>2</sub> in the atmosphere were 419 parts per million, a rise of some 15 per cent on 1997 levels.

Global temperatures are still rising. The 10 most recent years are the warmest years on record.

So it is imperative for climate correction that we replace conventionally-used fossil fuels with zero-carbon energies.

The good news is that surveys suggest people are most enthusiastic for innovation in green energy—above advances in AI, gene-based medicine and GMO foods, for example.

At the same time, solar electricity costs have fallen 80 per cent in the last 10 years. Wind power costs are down around 60 per cent. Batteries are 85 per cent cheaper.

We probably already have over 70 per cent of the engineering solutions we need to eliminate greenhouse gas emissions.

Some of these, such as small-scale nuclear fission reactors and carbon capture and storage, are immature and have not yet experienced the operational improvement and cost reduction that make them commercially viable.

Others, like fusion or absorbing carbon into the oceans, are a little bit further away but still a real possibility for the future.

So, when it comes to the direction of travel, I'd say we're on course.

When it comes to the rate we're moving, the hard truth is that we're creeping along far, far too slowly.

So, what if we don't move quickly enough to prevent us reaching an irreversible tipping point?

We need a radical back-up plan.

That could be what's called geoengineering—ways of reflecting the sun's radiation back into space using aerosols, mirrors or simply white paint.

More work needs to be done to understand how to do this, and limit the risks. Some actions may be irreversible and have dire consequences. These must be avoided.

Whichever engineering solutions we pursue to correct the climate, we're looking at investment on an unprecedented scale.

The best estimate I've seen suggests that to limit the rise in global temperatures to two degrees, we need to invest around \$3.5 trillion a year, every year, for the next 10 years from both public and private sources.

That investment must be deployed selectively, in sectors where it will have the greatest impact.

So climate correction is not just about innovative engineering but about innovative finance.

An explicit or implicit global carbon price—depending on what works in national politics—would be ideal.

In Europe and the United States we've seen a degree of success with such approaches.

For the rest of the world, it is much more complex.

China and emerging economies, such as India and Brazil, are unapologetic about their desire to maintain their pace of growth and will resist anything that jeopardises this.

China, for example, continues to build coal-fired power stations at an alarming rate, most probably driven by a desire for security of energy supply.

The environmental consequences will be significant, obviously.

But there is an opportunity here.

An essential component of climate correction—and something that is a possible development from the recent climate conference, COP28—is to encourage emerging markets and developing economies to use clean energy to power their economic growth from the very beginning.

Many of these countries have a comparative advantage when it comes to natural capital—by which I mean carbon sinks, such as forests and mangroves.

Being paid to preserve and enhance these precious natural resources can be a source of finance to transform their own energy systems.

The key is to construct a global financing ecosystem that creates these flows of investment.

This is not charity. This is investment for the long term, with real returns. And it has potential to lessen the global north-south and rich-poor divides.

This is important because, in all this, we must not lose sight of fairness.

Climate correction—through energy transition and the work to achieve net zero—must advance the common good and reflect the universal human values of justice and equality.

## **EQUALITY ENHANCES ECONOMIES**

As a gay man, I feel especially strongly about those values. And I feel just as strongly about them as a business man.

This is the third reason for my optimism.

If we finish the job of creating open and inclusive societies then it will be a boon to all our economies.

For years I lived in fear of rejection if people knew who I really was.

While my mother bequeathed me optimism, curiosity and courage, she also passed on two other outlooks that shaped the way in which I thought about myself.

The first was her observation that when the going gets tough, the majority always hurts the minority, and so it was better to avoid being seen as an outsider.

The second was that as soon as you tell someone a secret, it is no longer a secret, and it is likely to be used against you.

I lived in fear that this could become true for me—and it eventually did.

After decades in the closet, I was outed in 2007 and resigned as CEO of BP as a result.

Quite a large part of the world has come a long way since then.

In many countries homosexuality is now decriminalised; gays and lesbians can serve in the armed forces; men who have sex with men can give blood; and same-sex marriage is legal.



Just a few weeks ago, Greece became the first Christian Orthodox-majority country to legalise same-sex marriage.

It's not like that everywhere, of course. In places like Uganda, Malaysia, Russia the situation is nothing short of frightening.

Even in supposedly liberal countries, we should not confuse legislative reform with broader attitudinal shifts.

DEI programmes are in the crosshairs of critics, with Donald Trump pledging last month to end all those across the federal government if he's re-elected.

That just doesn't make sense to me on either a human level or a business one.

The World Bank estimates that India alone loses \$32 billion a year in economic output because of LGBT discrimination.

And researchers suggest that the US economy could add an extra \$9 billion a year if companies improve their ability to retain LGBT talent.

Companies with strong LGBT policies tend to innovate the most, to have loyal employees, and are positively perceived by their customers.

Long term studies show that these engage teams more and they, in turn, produce higher returns.

Over a 20-year period you can assume that if you hit the high point of engagement, you should be able to make two percent per annum higher returns on equity than those who are moderately engaged.

That's a huge amount.

And if you can get that by doing some very simple things to make people feel that they can be themselves then you're onto a winner.

There is more work to do to get there.

Large institutions must increase LGBT representation at board level.

If they say they are working hard to do that and to foster a more inclusive environment, we should ask for proof.

Similarly, we need more LGBT role models. Those are critically important.

When people can see how someone like themselves is successful in an organisation, it is easier to convince them that coming out is a positive career move.

There is nothing more powerful at dispelling fear.

There are many role models we could pay tribute to but there are far too few in certain sectors.

I think of my own careers in oil and gas, and now in finance and private equity.

There are still far too few openly LGBT people working in these sectors.

And only four Fortune 500 companies are led by openly-LGBT CEOs. By my reckoning there should be about 25 to 30.

So, either people are in the closet, or they are being discriminated against, or they are opting out of the top roles.

And I want to be clear that this isn't just a "gay issue".

Straight people—since they're the majority—are critical allies if we want to make it possible for people to be their authentic selves in corporate life.

## **CLOSING**

Leaving BP, was one of my lowest points.

From there, I have lived a varied and fulfilling life and found people to be accepting of who I am.

It's that kind of experience that feeds my optimism.

And I remain an optimist because nothing can be achieved if we decide at the outset that we have failed.

It won't always work out—but we can either do something and take our chances; or do nothing and take what's coming.

I started this lecture with the Holocaust.

My mother's unwavering faith in the human condition throughout her life—despite her experience to the contrary—can inspire us.

We need to learn again that discrimination is the enemy of progress.

Whenever we open opportunity to women, Jews, Muslims, LGBT people, refugees, ethnic minorities and many others, we embrace humanity's full genius.

And the greater the talent pool, the greater the prospect of developing the inventions and innovations necessary to take the world forward on the challenges we face.

This is not about tokenism or quotas. It is about human advancement made possible by meritocracy without any boundaries.

That is what Paula hoped for. And I hope it is a dream that we will all deliver together.