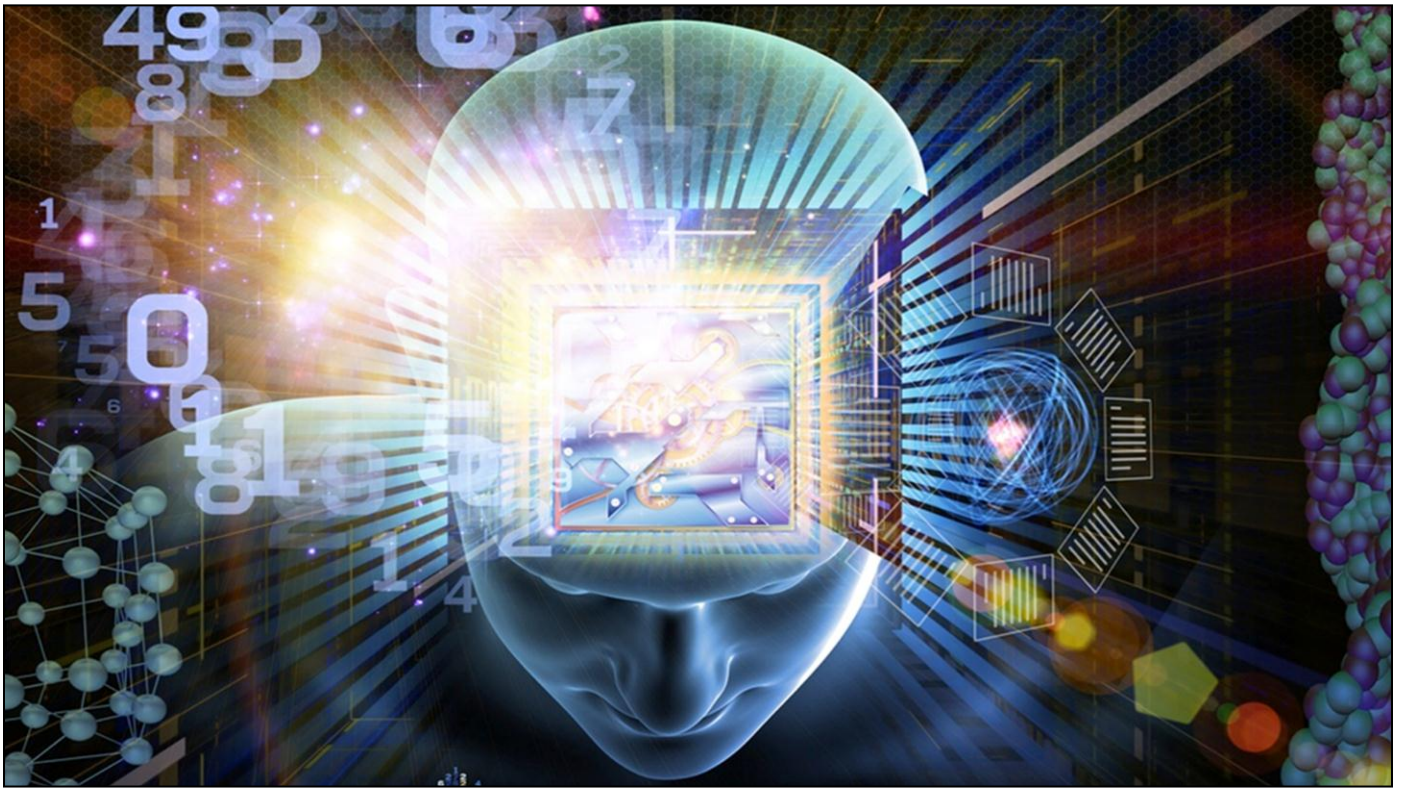
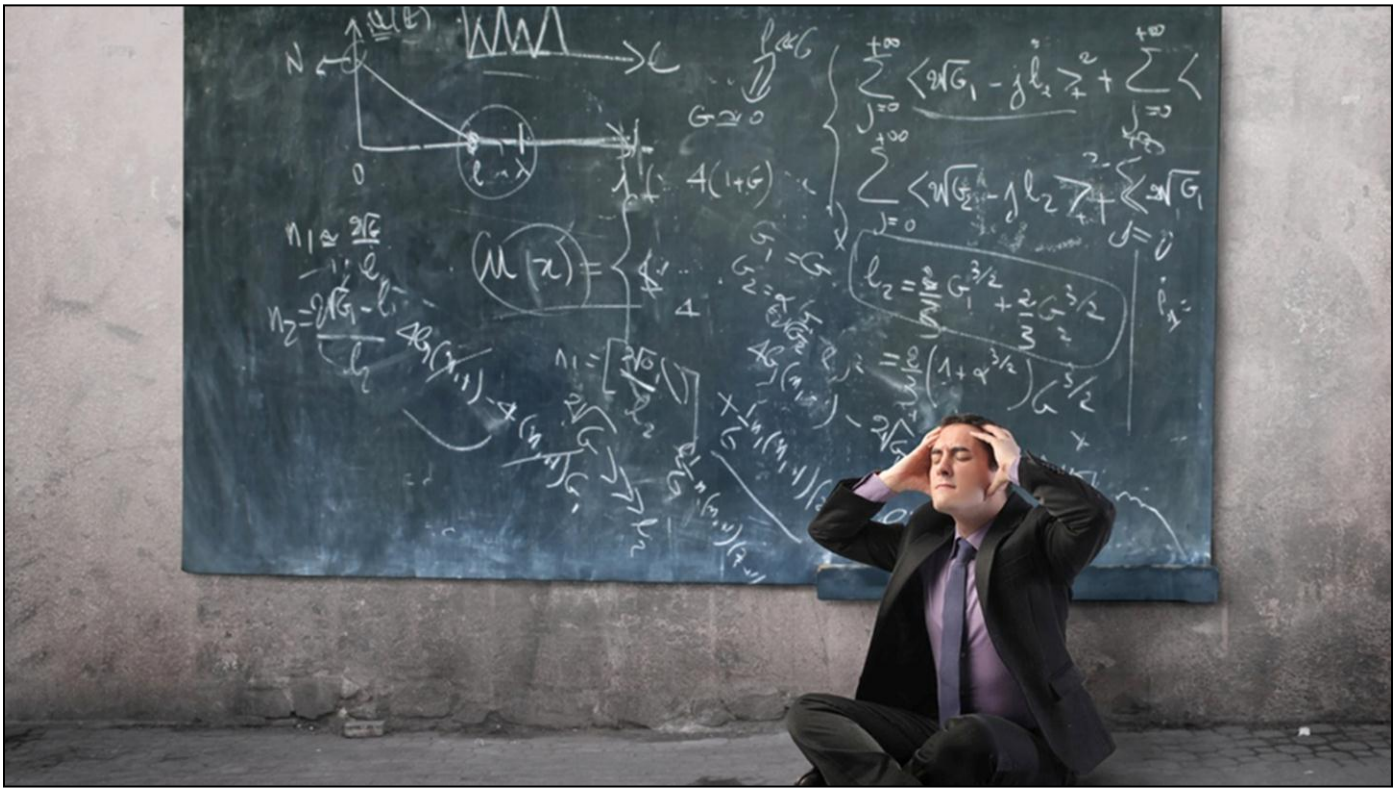
President Tony Chan's presentation @ IdeasLab of World Economic Forum 2013



The Power of Science

The power of science is manifold: it explains our physical world; it underpins technological innovation for human benefit; and it shows critical and logical thinking processes that enable human progress. Society should maximize the power of science in every aspect: by having a critical mass of scientific talents for innovation, by making science a part of liberal education and by encouraging inter-sector collaboration.



Challenge to Maximizing Power of Science: Public Does Not Understand Science

There remains a major challenge in changing society's attitude towards science: the public does not understand science and its processes or the benefits it may bring. Without this understanding, it is not easy for science to fully flower.

What's Science Got To Do With It?

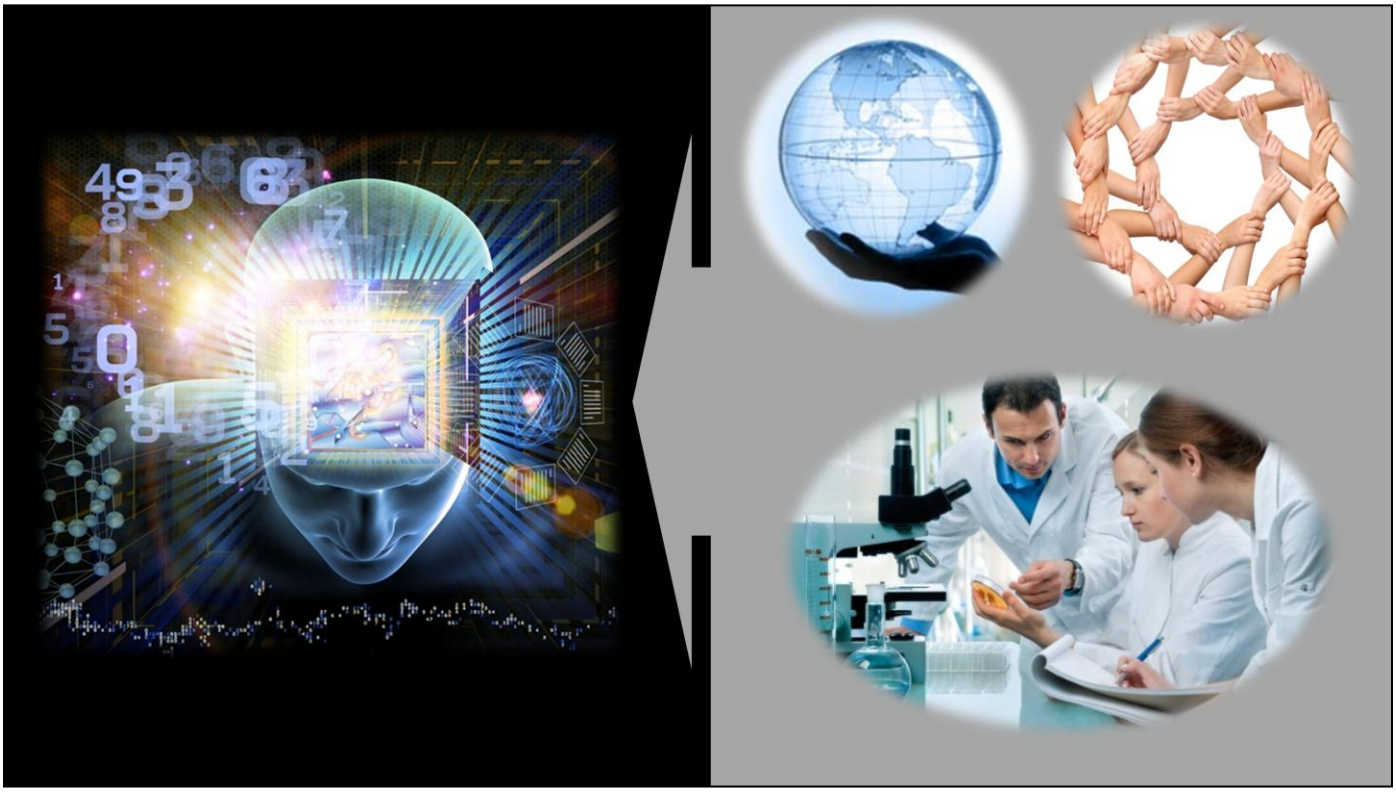
The public does not understand how science affects their daily life through the technologies they have come to depend. They don't realize that: without Einstein's theory of relativity, the development of the atomic clock and the development of satellites and space communication, there would be no GPS. Without the discovery of the structure of DNA, there would be no modern genetics-based medicine and life science.

Science & The Economy

Most governments appreciate science as an engine of economic growth and recognize it as a source of innovation. But in bad economic times, public support of science is vulnerable. Against global competition, how a country responds to competing needs will determine its future well-being

Science & The Economy

In the US initiatives to increase science funding against global competition have fallen short. In China, by contrast, enormous investments are being made at all levels of government, from the national 12th 5 Year Plan to provincial government plans.



3 Key Ingredients

To maximize the power of science, I would suggest 3 new key ingredients: First, treat basic blue-sky research as critical as applied research; second, encourage interdisciplinary research to tackle societal challenges; and third, promote international collaborations, sharing resources and expertise, thus benefiting students and enabling expensive research projects.

Outreach

Reach out to the public, through mass media and star scientists to make science more accessible to people with a non-science background. Expose them to the human side of science and scientists.

Work With The Political Processes

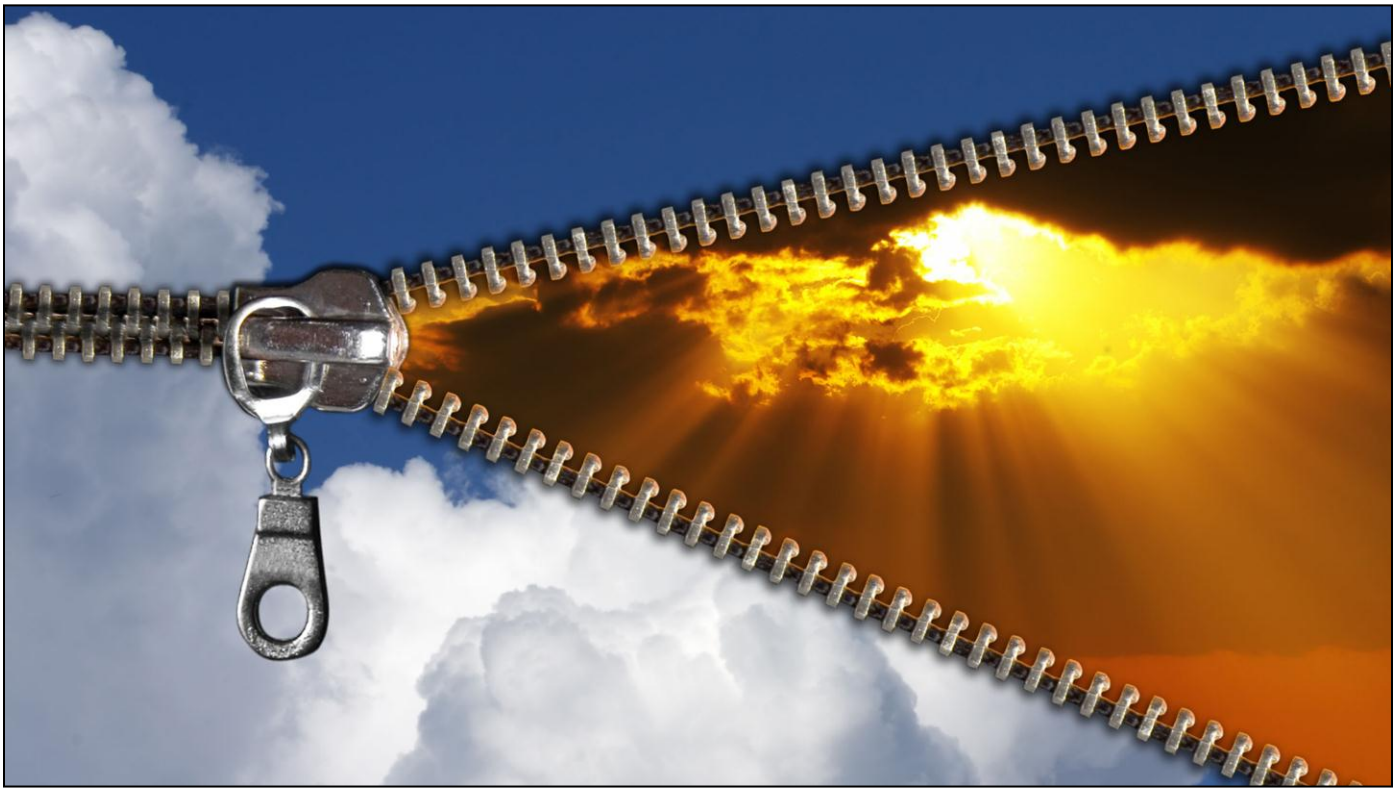
Scientists are distrustful of the political process, viewing it as full of horse-trading, half-truths or manipulations. But politics is the art of compromise, and the art of the possible. Support for science is neither self-evident nor an entitlement. I see hope and sympathy in many smart politicians.

Bringing Benefits of Science to Society

When the public sees the benefits of science, they are supportive of it. Scientists should not hesitate to partner engineers and industry to quickly bring the benefits of science to society. These days, the cycle from discovery to application is a short and small one. Google/Facebook are just 10 years old.

Encourage Entrepreneurship

One way to speed up the process of bringing the benefits of science to society is by encouraging student entrepreneurship, combining it with knowledge of science and technology. This culture of risk-taking and innovation requires societal support, in the form of venture capital, government policies and social values.



Change Academic Culture

Such a change requires a change in academic culture, with its bias against doctoral and post-doctoral students “deserting” academia. Talented students should not be discouraged from pursuing more attractive career options. The trick is to modify the academic culture without giving up its sound aspects and long-term values.

Science Is Just A “Theory”

To the public, science is often a process backed by a theory, and equated with “speculation” and therefore not worthy of their trust. The intrinsic value of science is often seen as its very weakness. It is shocking that over half of the US population does not believe in the theory of evolution, or that global climate change is largely man-made.

Scientific Evidence & Political Decisions

Science must not be seen as a competing party in a controversial debate. It must be seen as providing impartial evidence to support sound political decisions, in such vital areas as global warming, evolution and energy. This is a major challenge.

Education, Trust & Engagement

The way to meet this challenge is through education, and especially early education, so that children can learn that science is discovery and understanding of our physical world, and that it is impartial and useful. In promoting the cause of science, scientists should not over-promise, as in the case of artificial intelligence. Doing so undermines public trust. Instead, they should separate truths from myths.

Involvement in Political Process

Science and politics must intersect. There is no avoiding involvement in the political process, even as legislators. In this respect, China is miles ahead of the US. In China, several members at the pinnacle of power, the Politburo’ s Standing Committee are scientists and engineers. In the US, out of 700 Congressional representatives, there are probably less than a dozen trained scientists.

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