

Innovation & HackDay2022 @ Microfocus

Innovation, Disruption and more ...

Narayanan Subramaniam

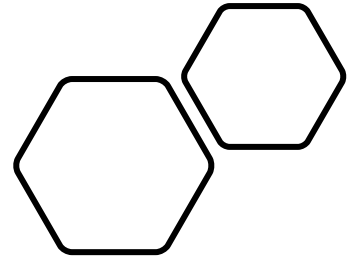
CTO, Eugenie.ai

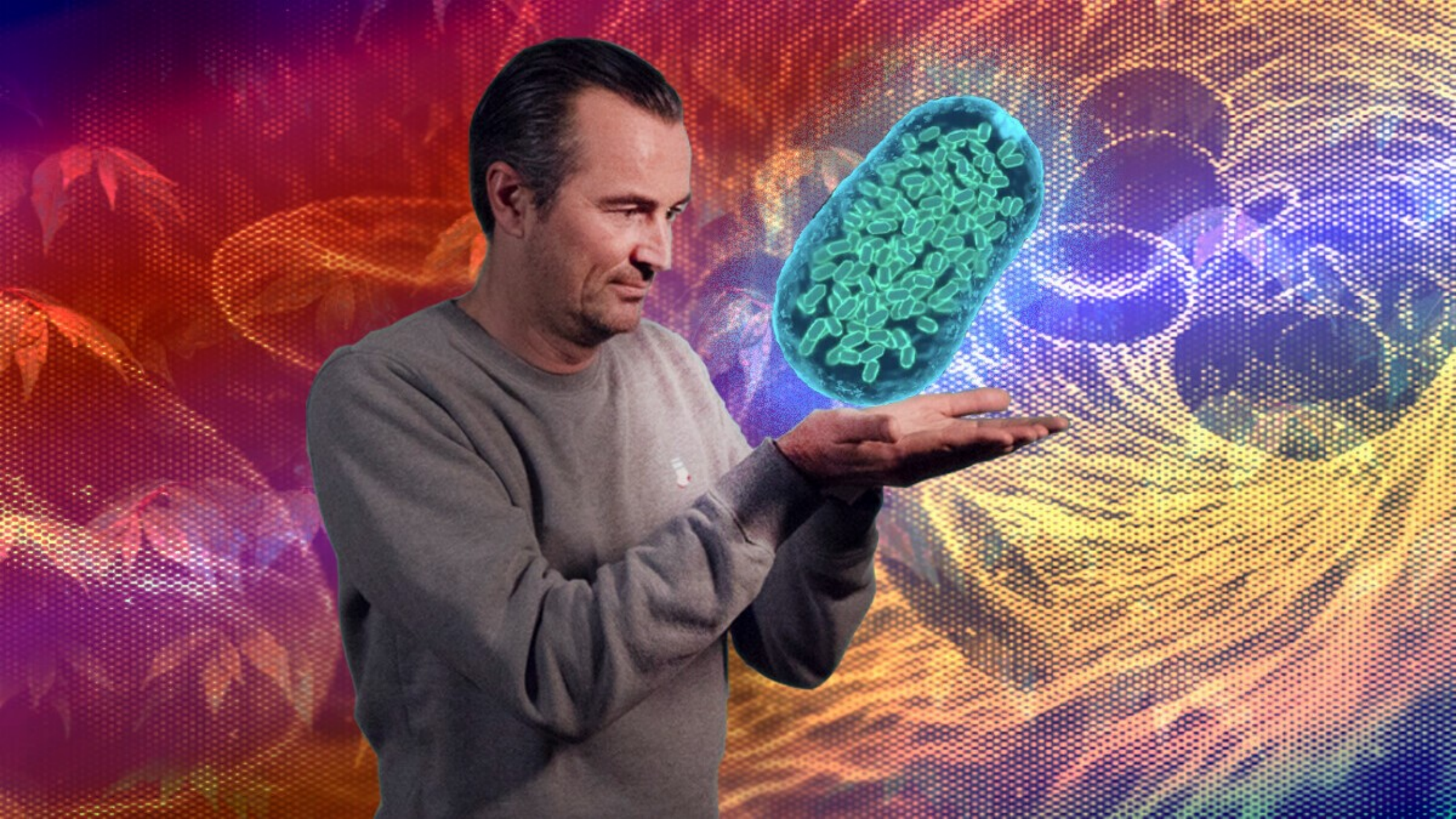
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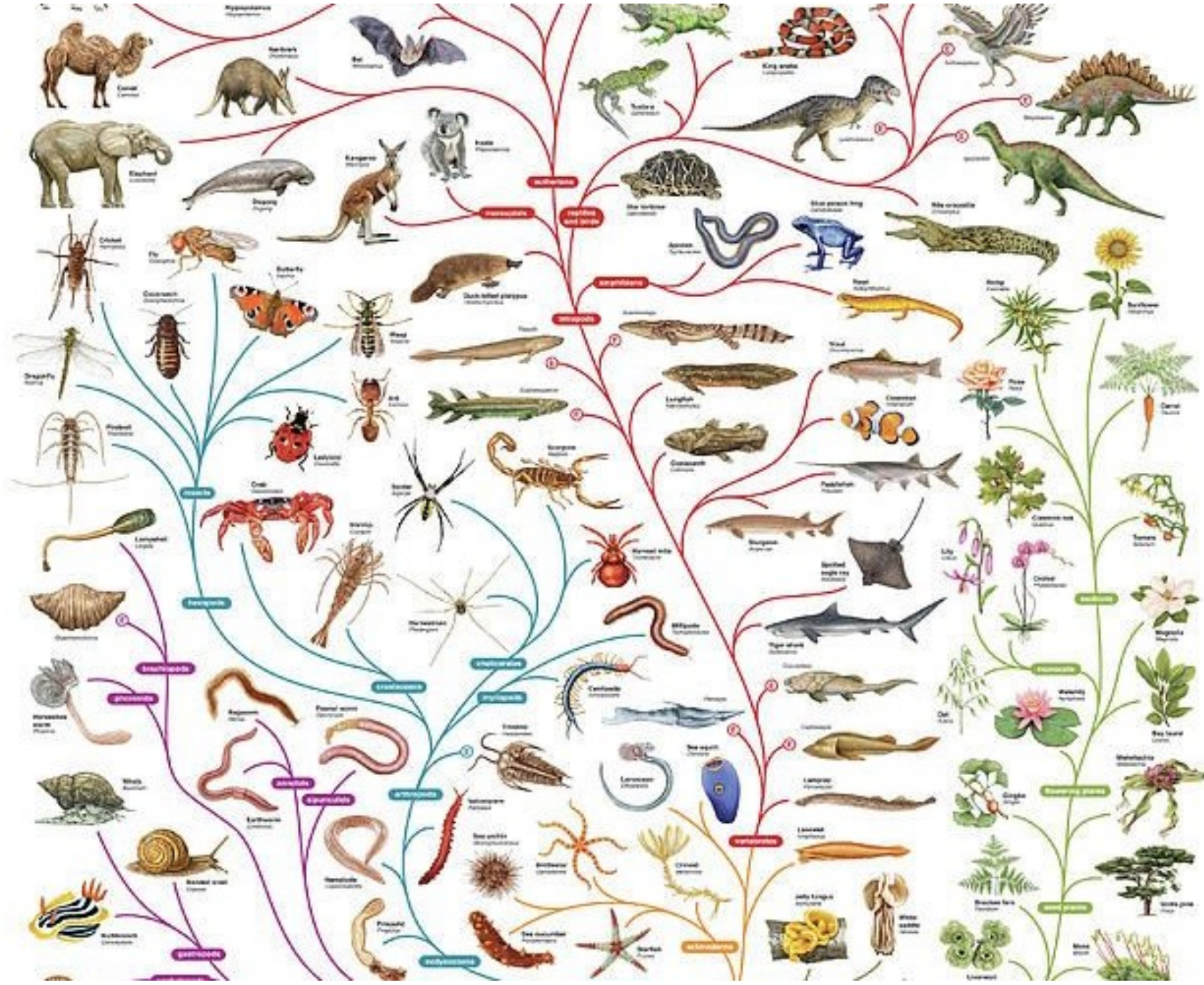


Origin of Species

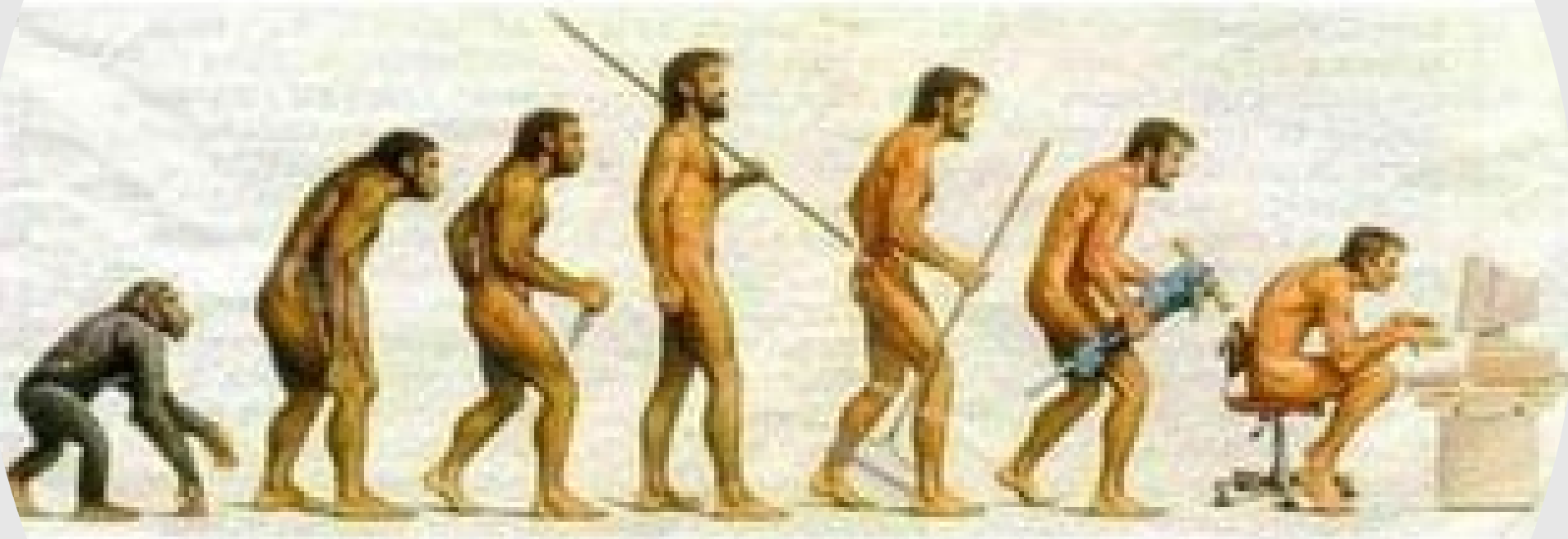
by Charles Darwin

1809 - 1882

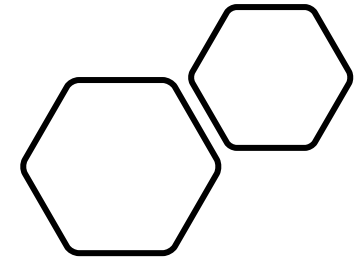
Darwin published his theory of evolution with compelling evidence in his 1859 book *On the Origin of Species*. By the 1870s, the scientific community and a majority of the educated public had accepted evolution as a fact. However, many



Evolution



Innovation





**A CORPORATION
IS A LIVING
ORGANISM
IT HAS TO CONTINUE TO
SHED ITS SKIN**

REINVENTING AND ADAPTING

GOOD

'NUFF





Good enough is
never good enough.

Alfred Bertram Guthrie

“ quote fancy



**Start with the Problem
Definition, not with the
Solution in Search of a
Problem**





Adapt Existing Technology: Drag Reducing Sharklet and Raked Wingtips, Noise Reducing Chevron Nozzles, all learnt from birds

Engineering inspired by nature

What is biomimicry?

Biomimicry is the study and imitation of nature's best-kept secrets to help solve human challenges



Bald eagle

The eagle's wing and tail structure provide active flight control. Airbus' "Bird of Prey" conceptual airliner is inspired by the eagle, mimicking its structure and featuring individually controlled feathers.



Snow goose

Migrating birds often fly in a V-shape to benefit from free lift. Airbus' "fello" fly project is testing this technique via two aircraft flying together as a way to improve the environmental performance of aircraft.

Albatross

The albatross is a master at facing wind gusts. Airbus' AlbatrossOne project features "semi-seroelastic" hinged wing-tips that flex to wind gusts, thereby better combating the effects of turbulence.



Long-eared owl

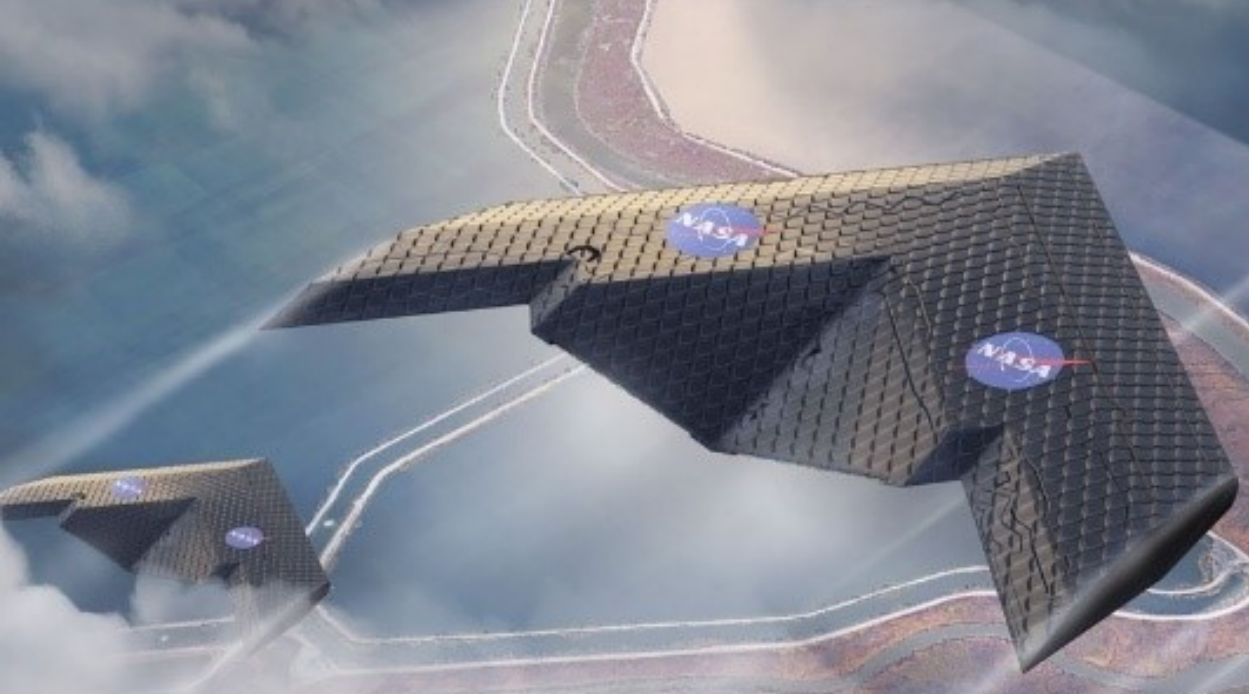
The long-eared owl can fly in almost complete silence. Airbus engineers are studying the secrets of silent flight, including adding retractable, brush-like fringes to mimic the owl's serrated feathers on aircraft wings.



White shark

Aircraft move forward in a similar way to sharks, pushing air around their wings to create lift. Airbus' "sharklets" are vertical wing-tip extensions that resemble a shark's dorsal fins, helping to reduce induced drag.



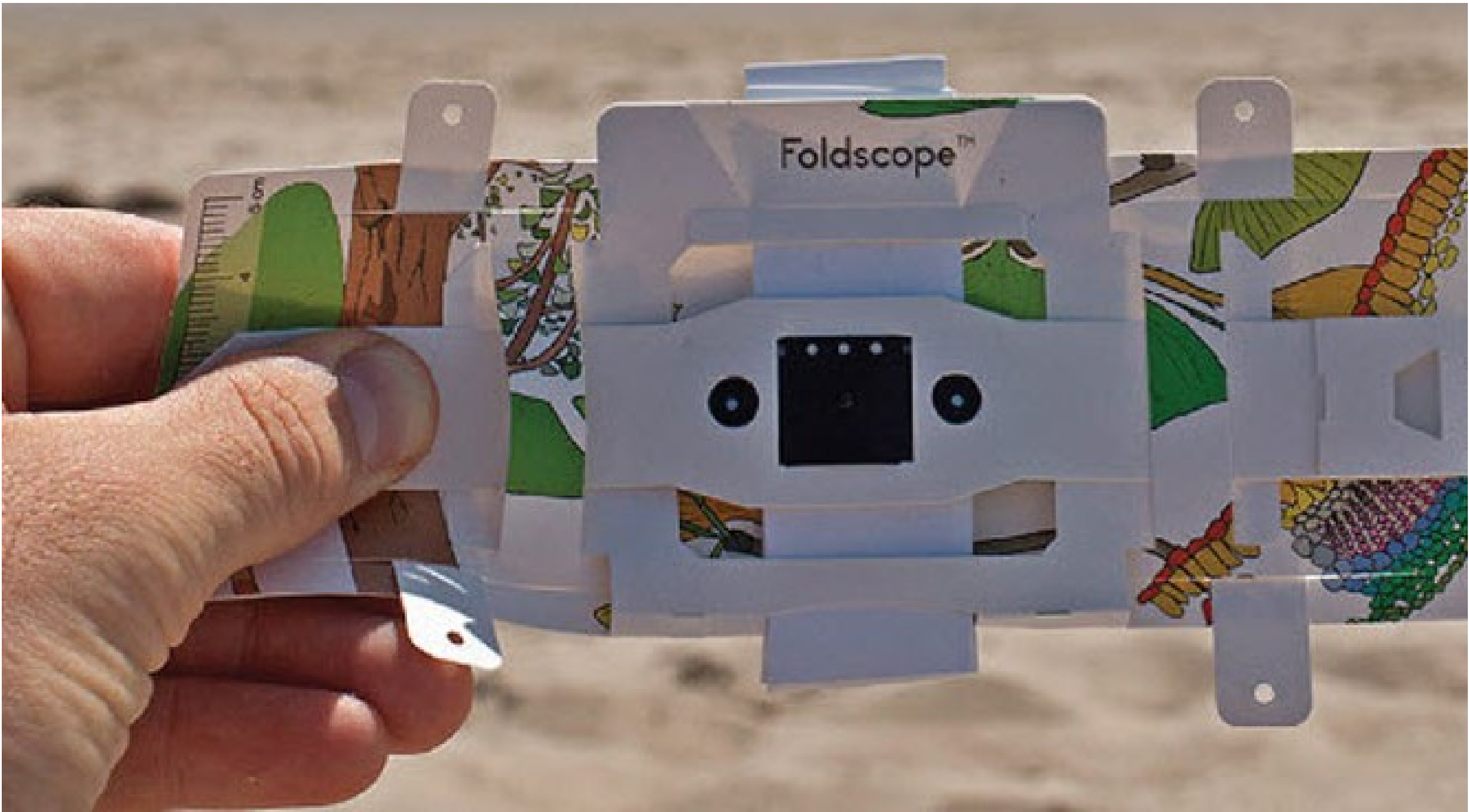


**Devise New Technology:
Composite Microstructures
for Variable Geometry,
Electroactive Polymers for
bird-like flight control**





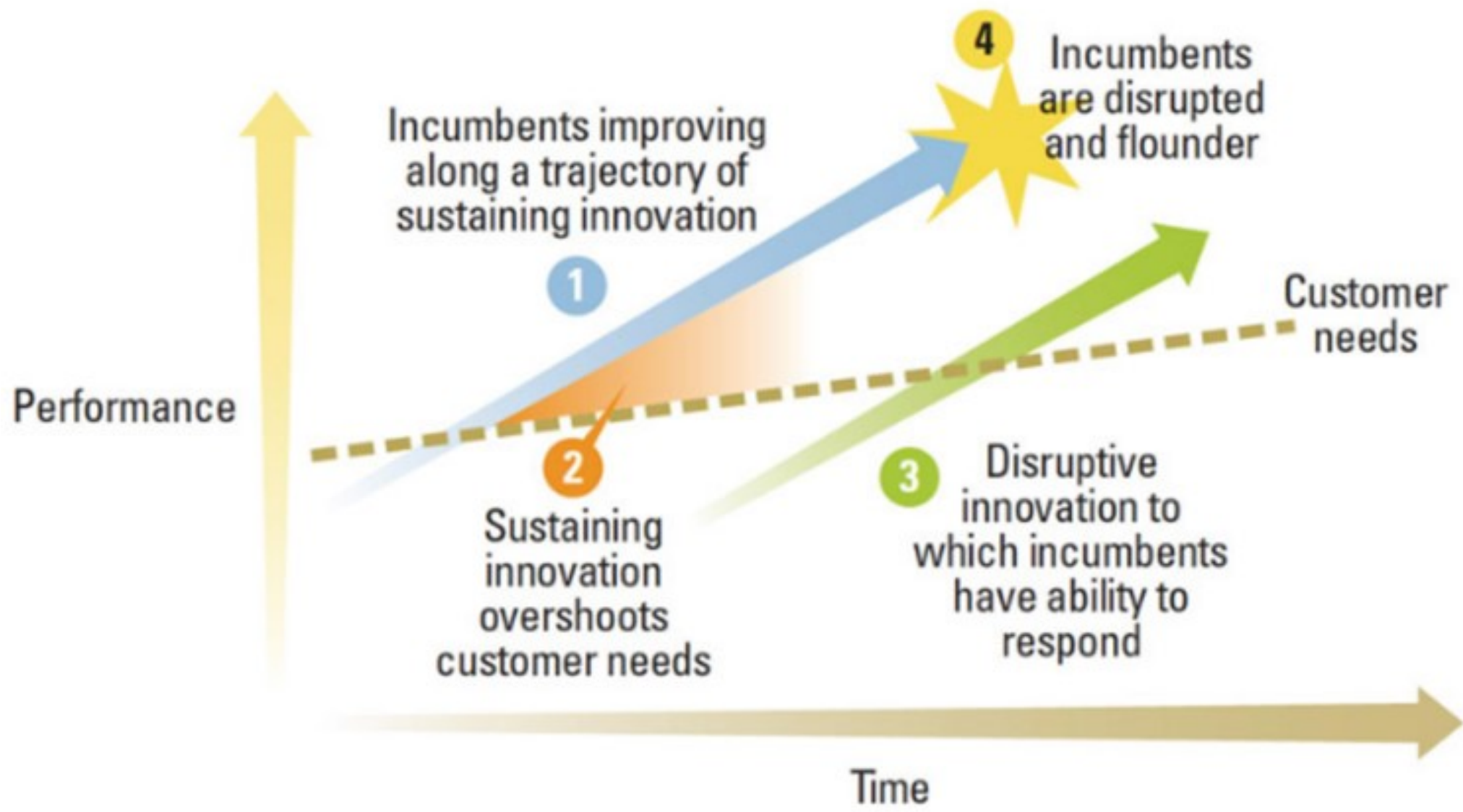




Foldscope™

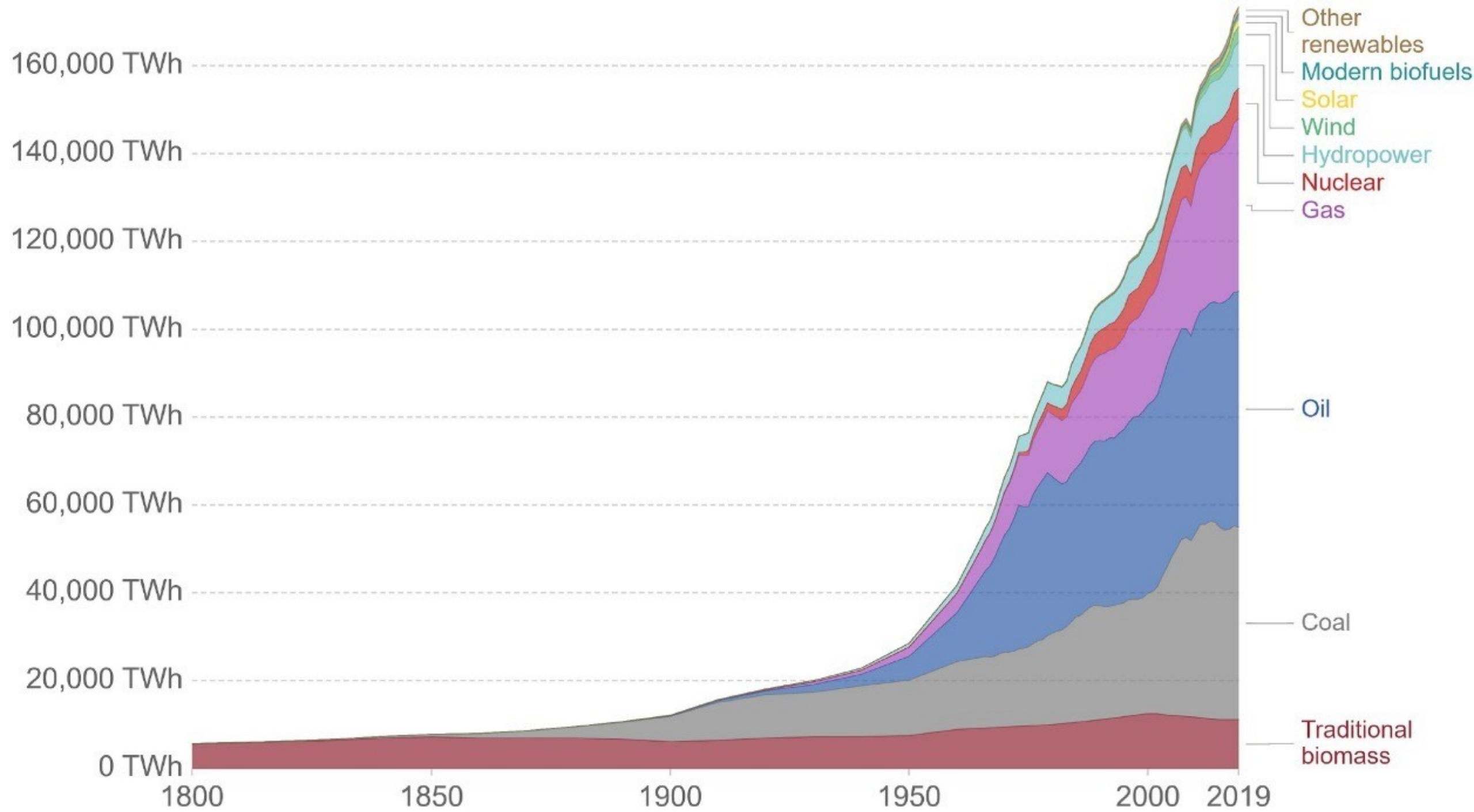






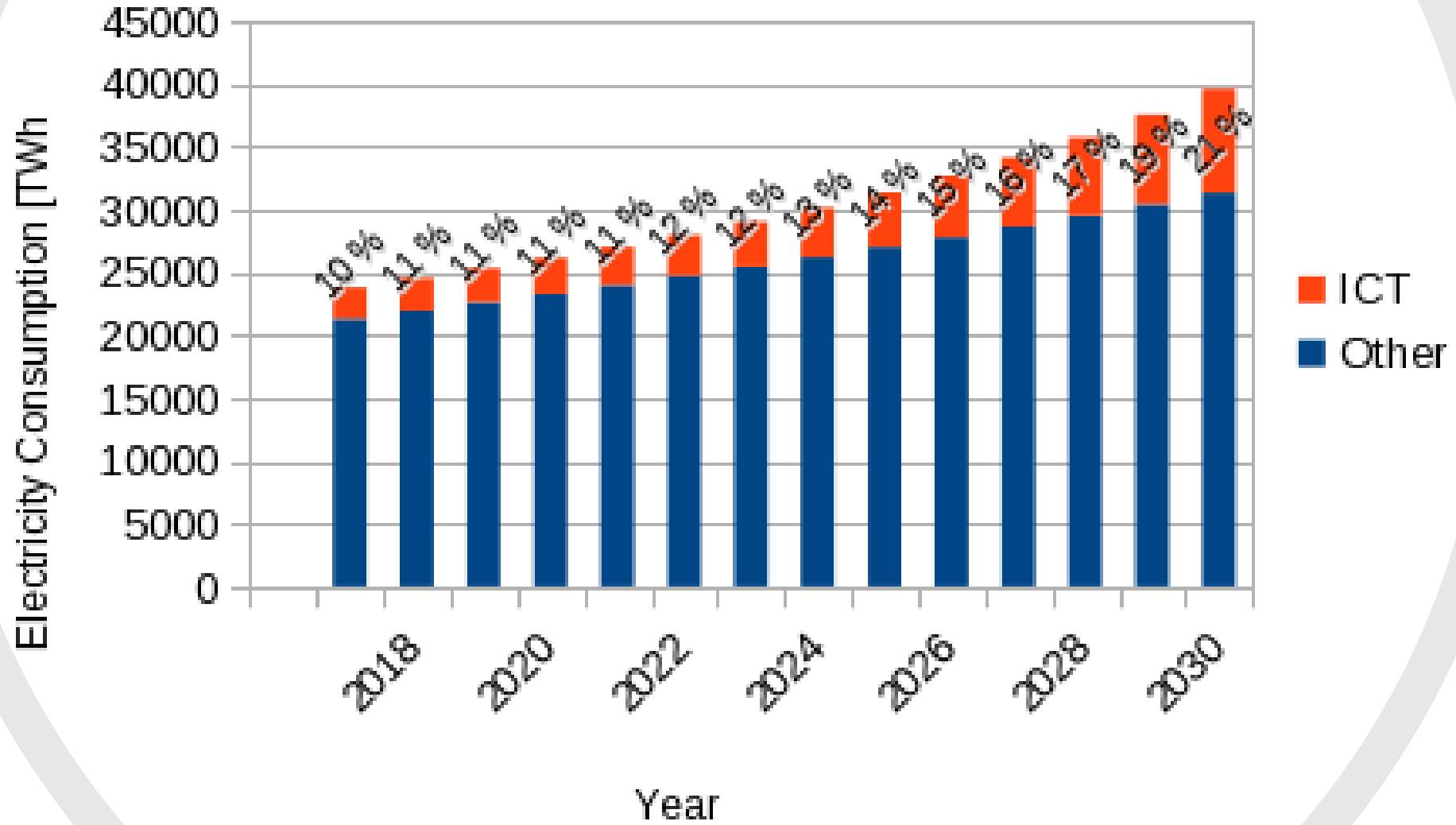


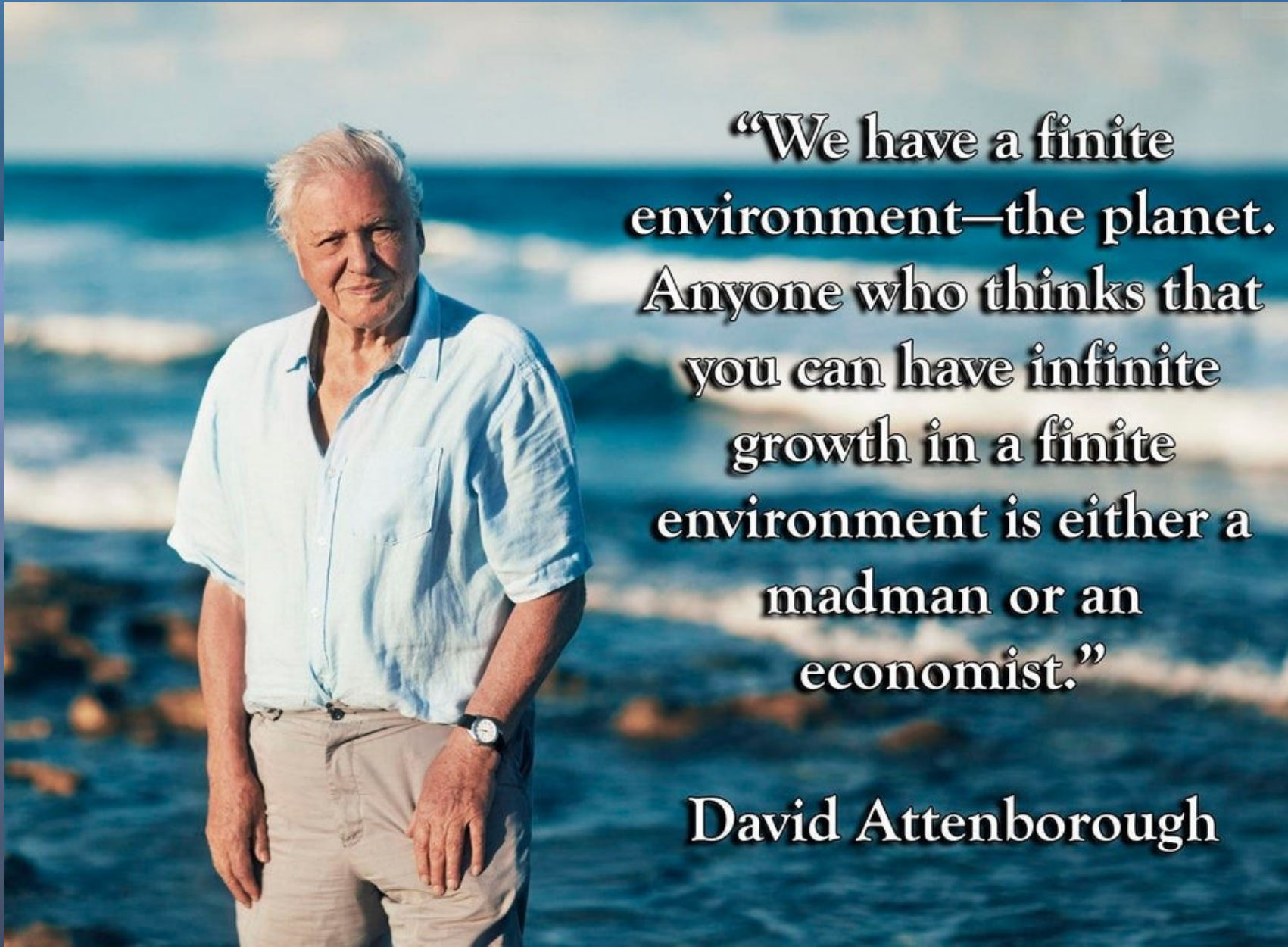
The Forgotten Customer & The Biggest Disruption To Come



Global electricity consumption

2017 - 2030





“We have a finite environment—the planet. Anyone who thinks that you can have infinite growth in a finite environment is either a madman or an economist.”

David Attenborough

SOCIAL AND ECONOMIC IMPACT OF CLIMATE CHANGE



The cost of adapting coastal areas to rising sea levels

Relocation of whole towns



Loss of the capacity to work due to heat

Shrinking productivity of harvests



More wars to gain access to limited resources

Prices of basic foodstuffs and consumer goods will rise



Extreme meteorological phenomena will cause widespread poverty



Fresh water will be in short supply in some areas

Diseases will spread due to higher temperatures



Plan A



There is no planet B



**“Human beings are the
greatest problem-solvers
our planet has ever
known.**

**We are just yet to apply
ourselves to this problem
with the scale and
urgency it requires.”**

David Attenborough
Broadcaster and naturalist

Key Tenets of Sustainable Businesses and Innovation:

Ethics, Ethics, Ethics, and more Ethics ...

IEEE Code of Ethics

(<https://www.ieee.org/about/corporate/governance/p7-8.html>)

1. to hold paramount the safety, health, and welfare of the public, to strive to comply with ethical design and sustainable development practices, to protect the privacy of others, and to disclose promptly factors that might endanger the public or the environment;

