

**DR. ARNDT  
PECHSTEIN.**

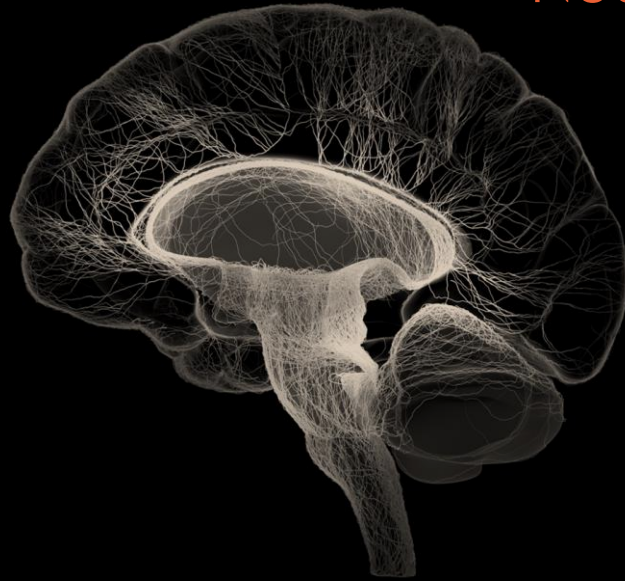
[arndtpechstein.eu](http://arndtpechstein.eu)

**Biomimicry: Nature-Based Solutions to Rethink Rail**  
Tradition is Not a Business Model

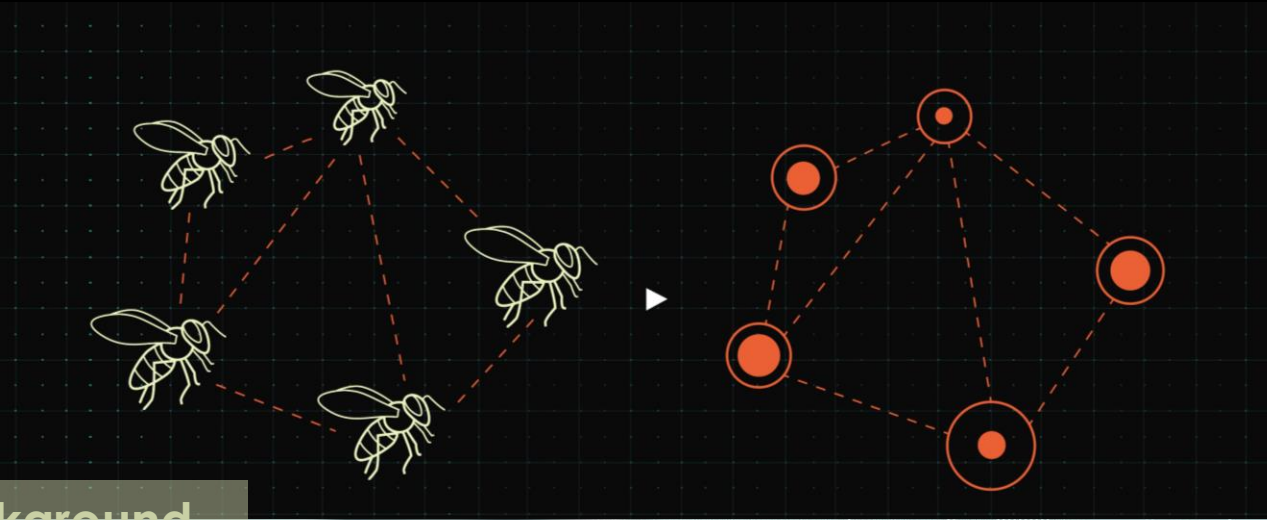
**FUTURE-PROOFING ORGANIZATIONS**

*- disruption designed to delight -*

# Neuroscience



# Biomimicry & Complex Adaptive Systems



my background

# Agile & Design Thinking



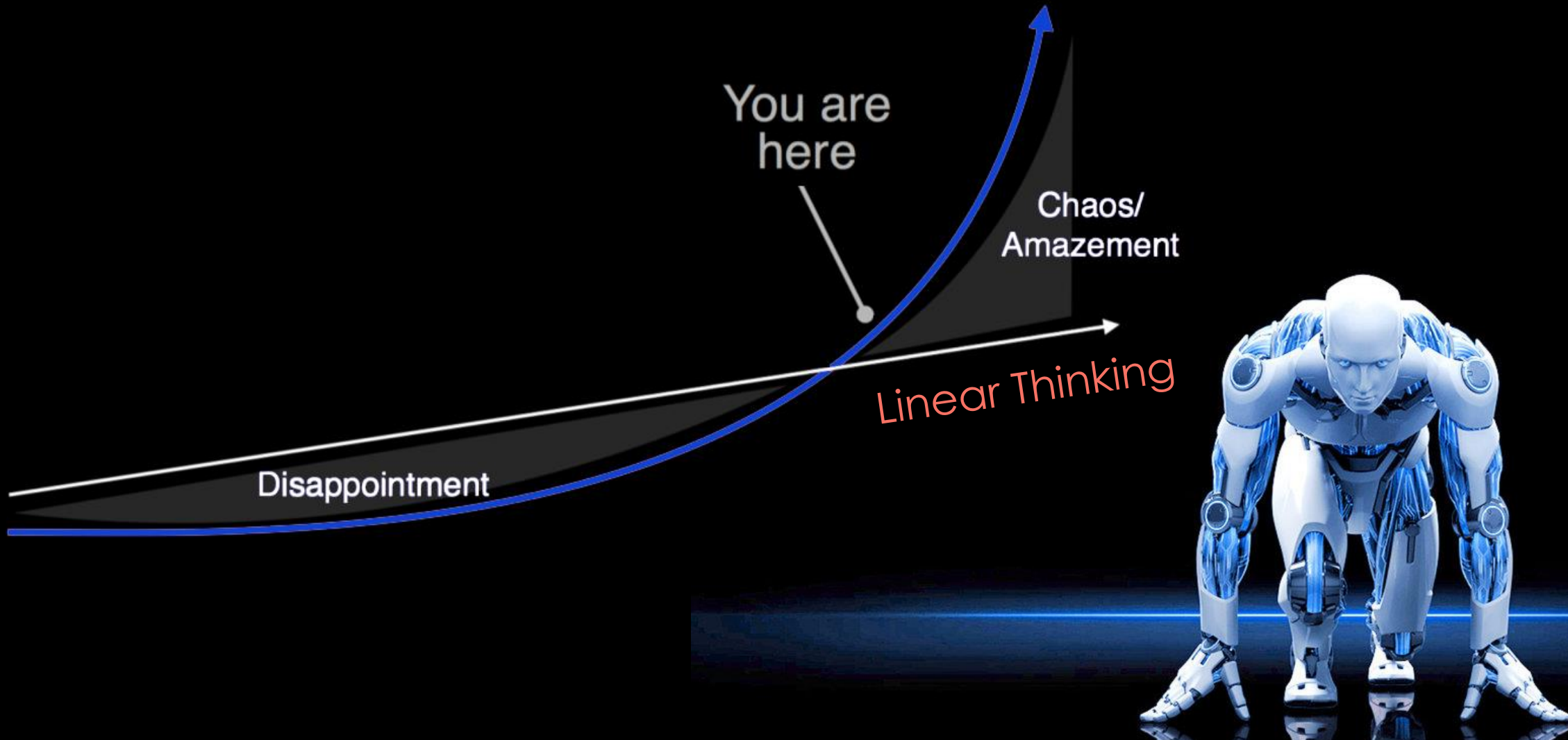
# Exponential Organizations



# Why now?



# Exponential development



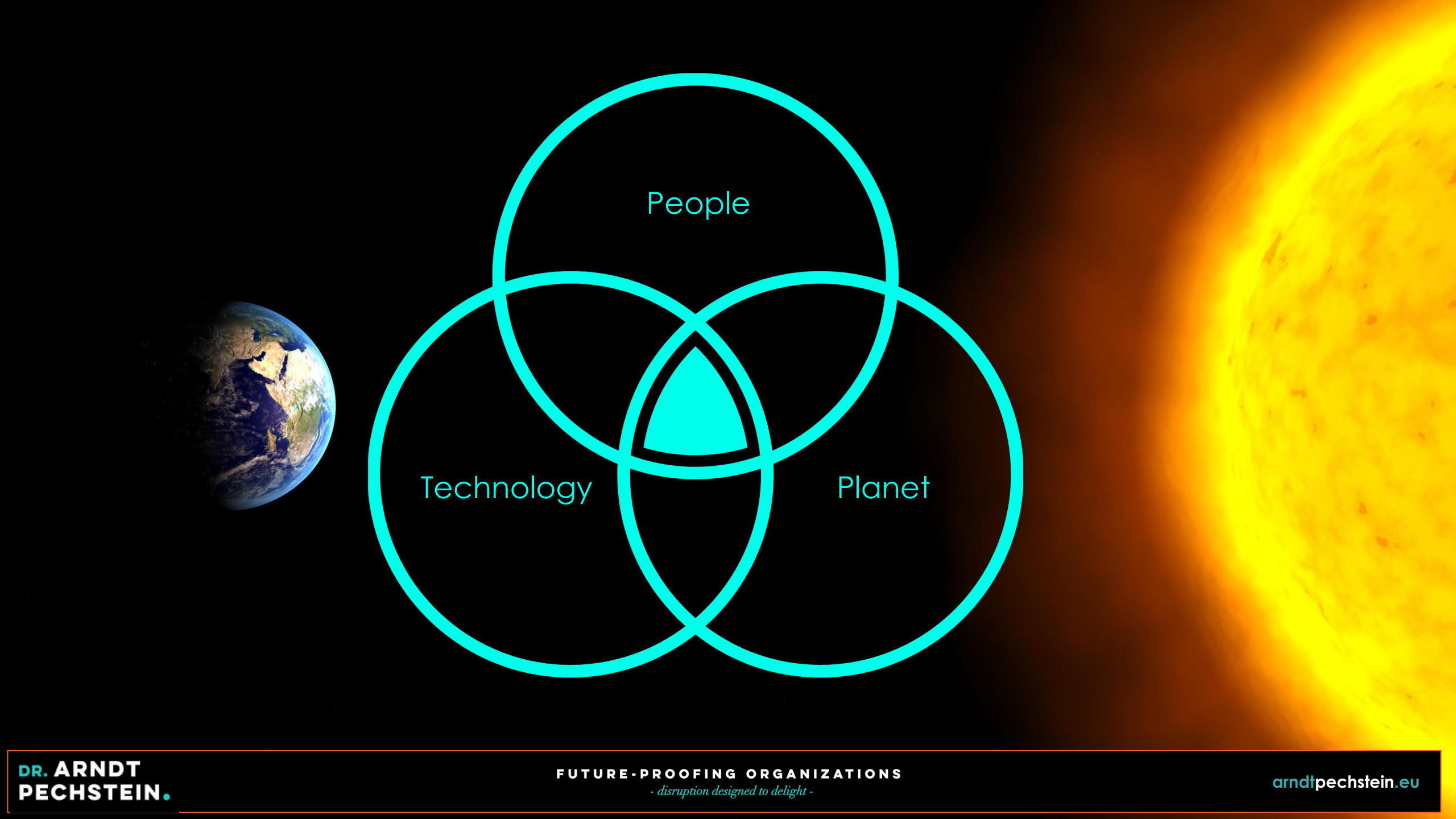
# Tradition is not a Business Model







# Think in (Eco) Systems



People

Technology

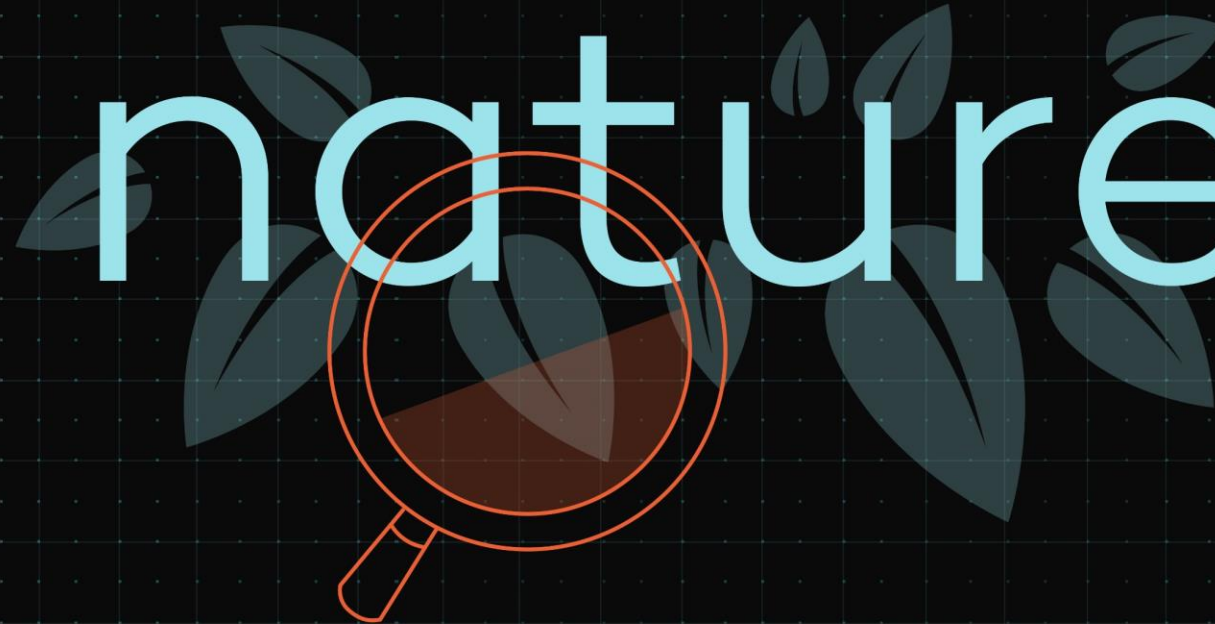
Planet

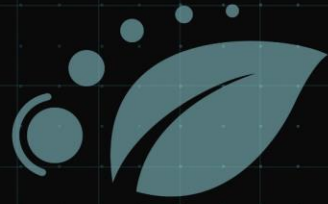




Learn from

nature

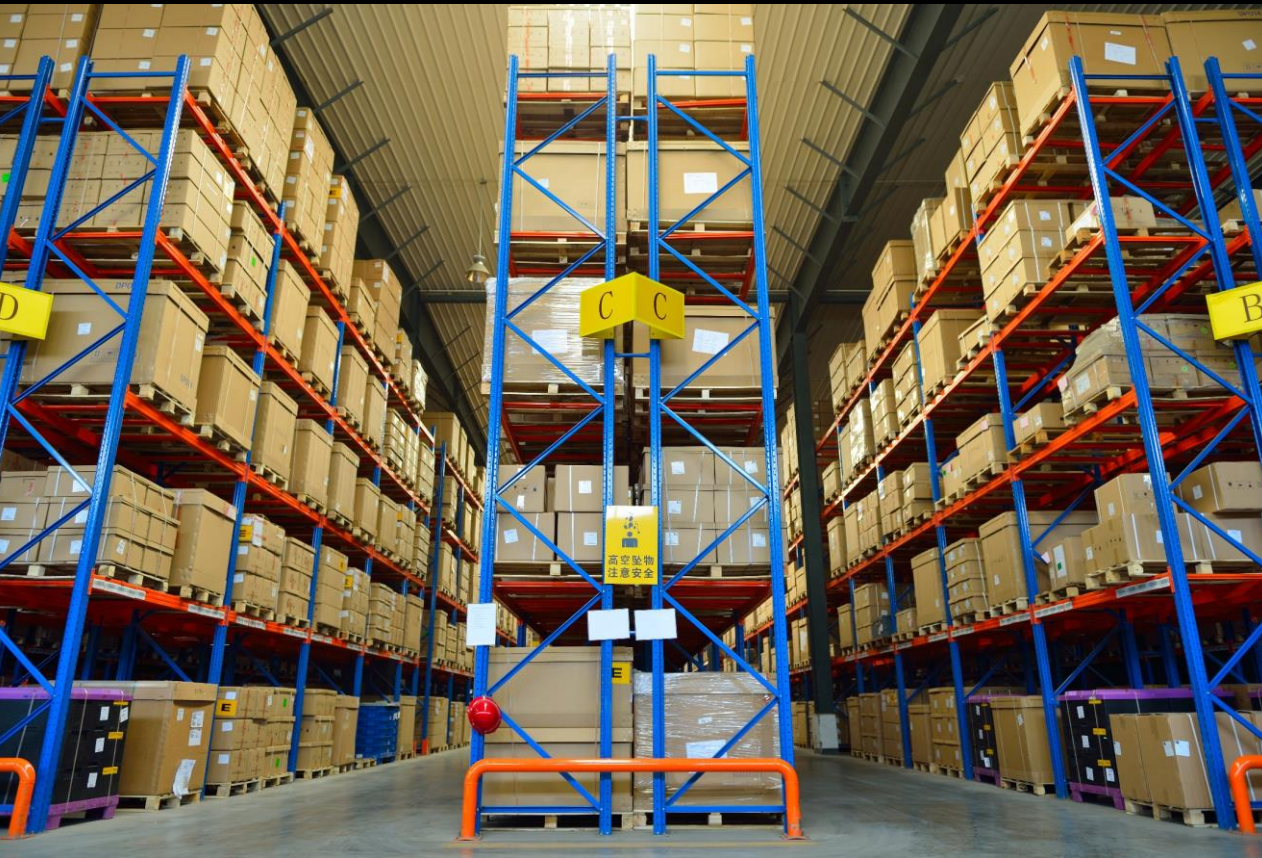


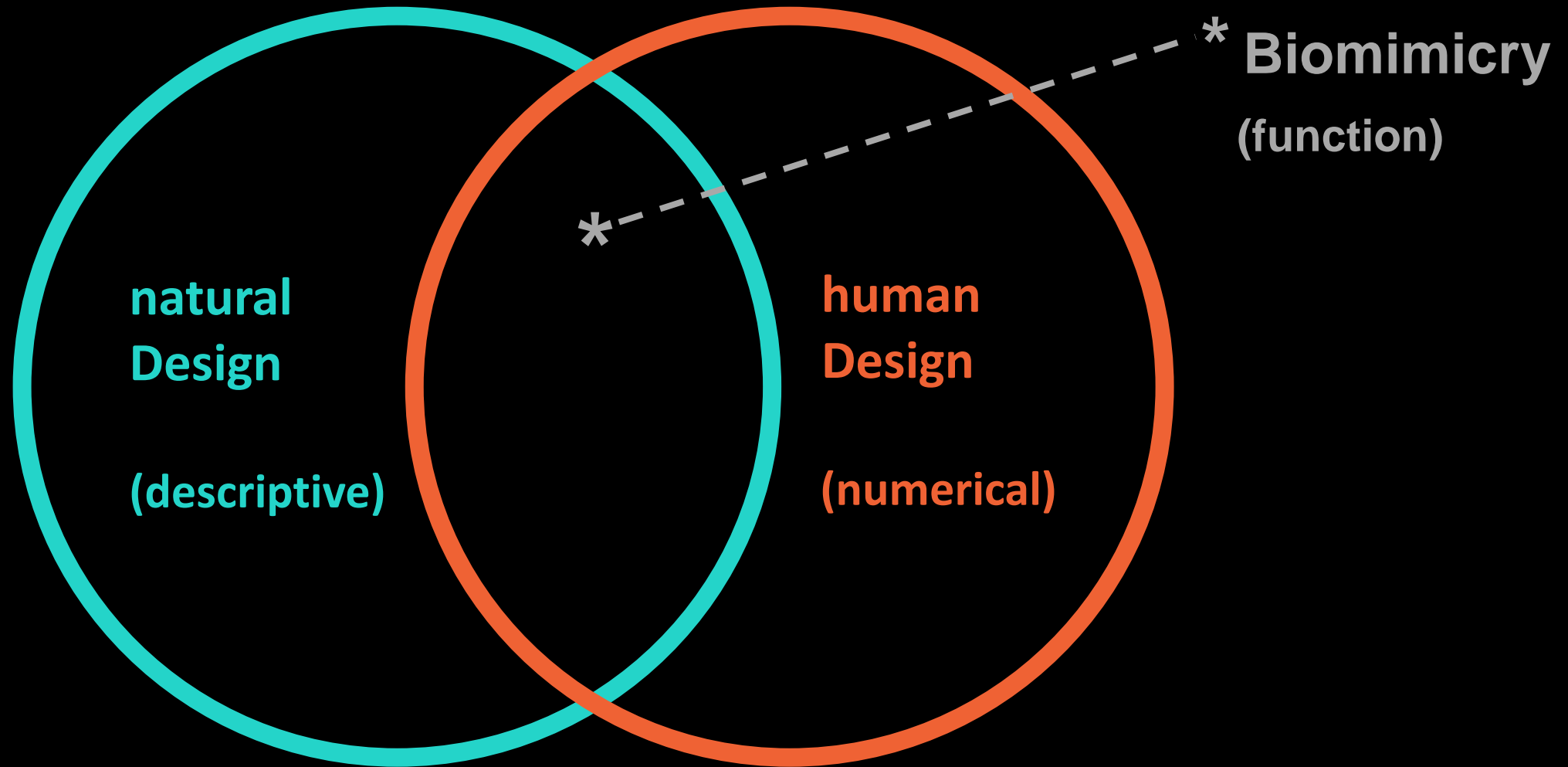


# Biomimicry

= life = imitate

# Warehouse of Goods vs. Library of Information







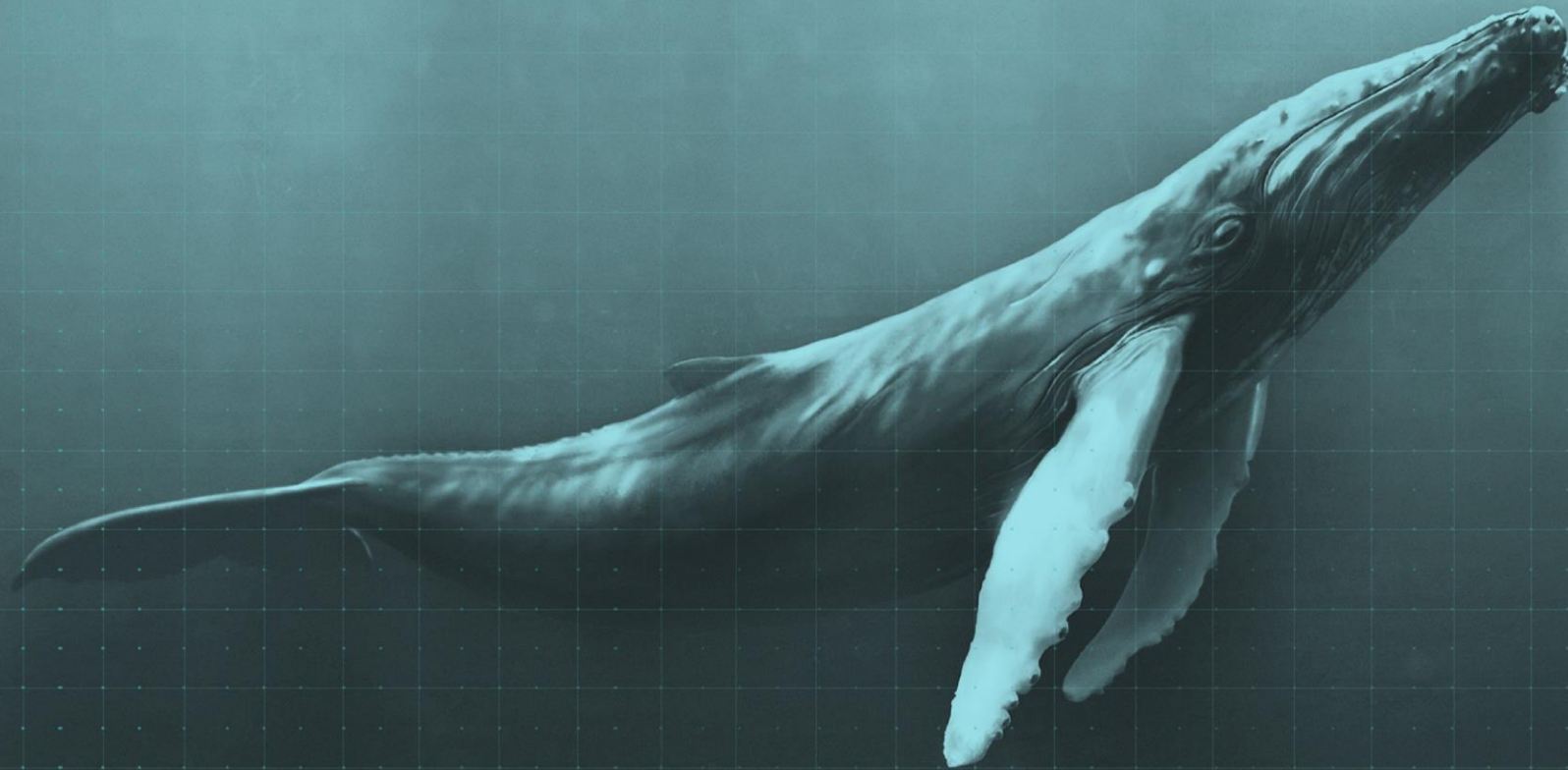
form



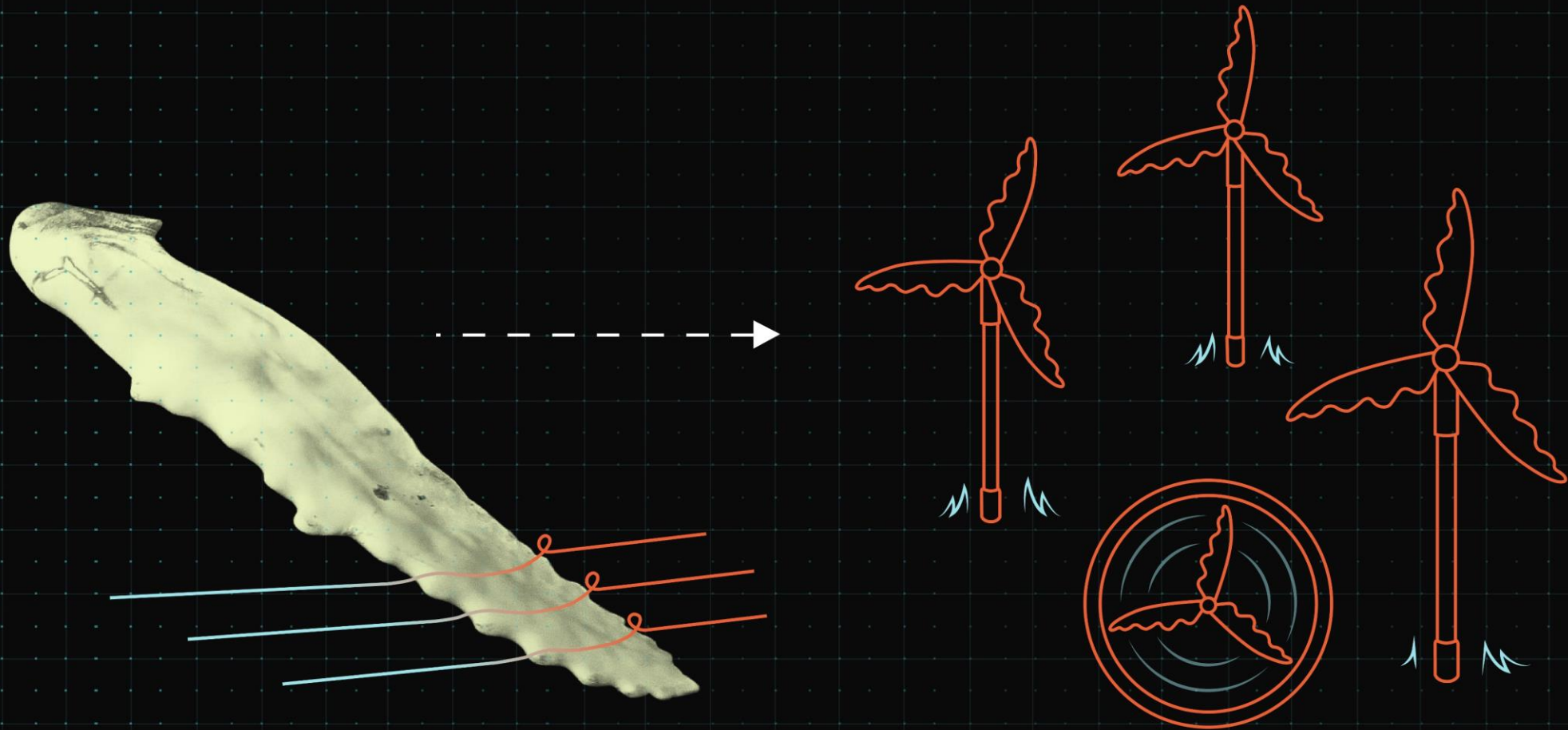
process



system



# Biomimicry: Sustainable Innovation





form

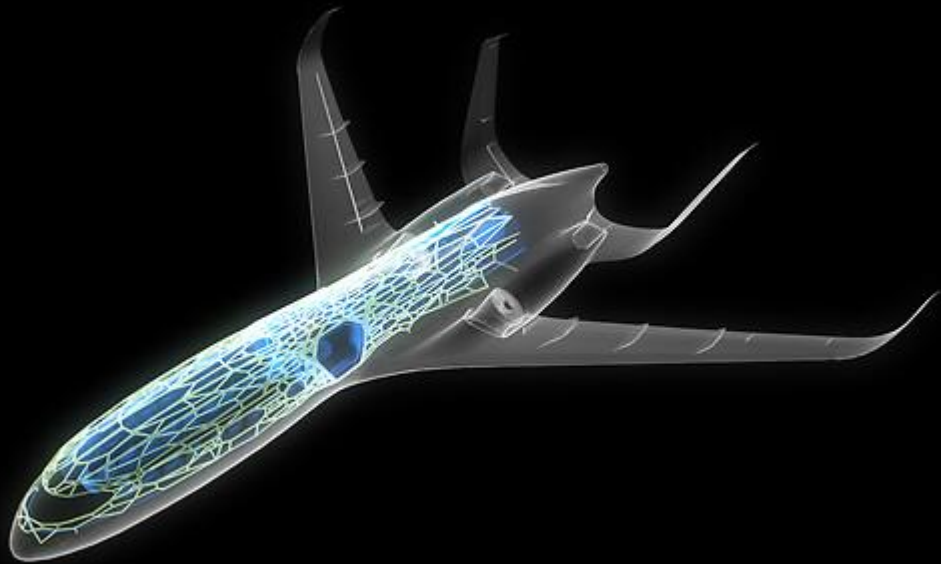


process

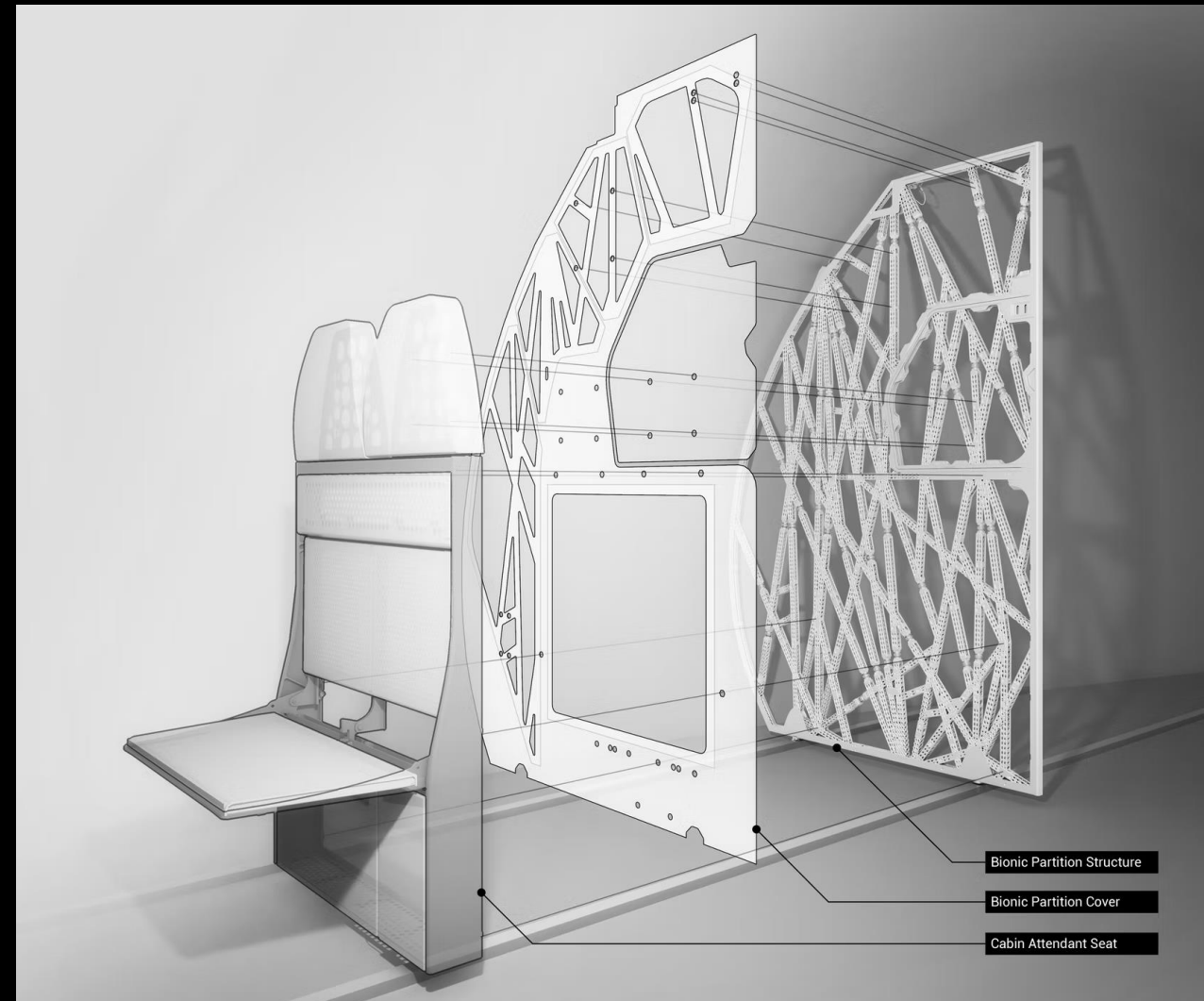


system





© AIRBUS S.A.S

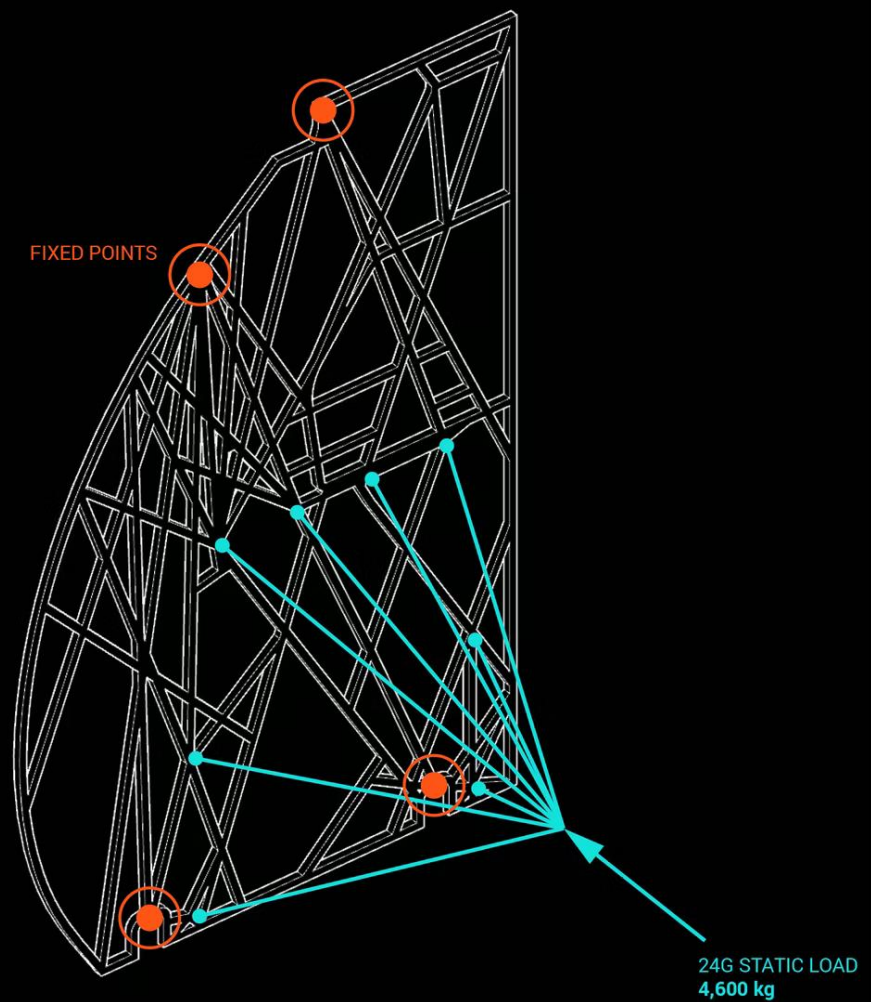
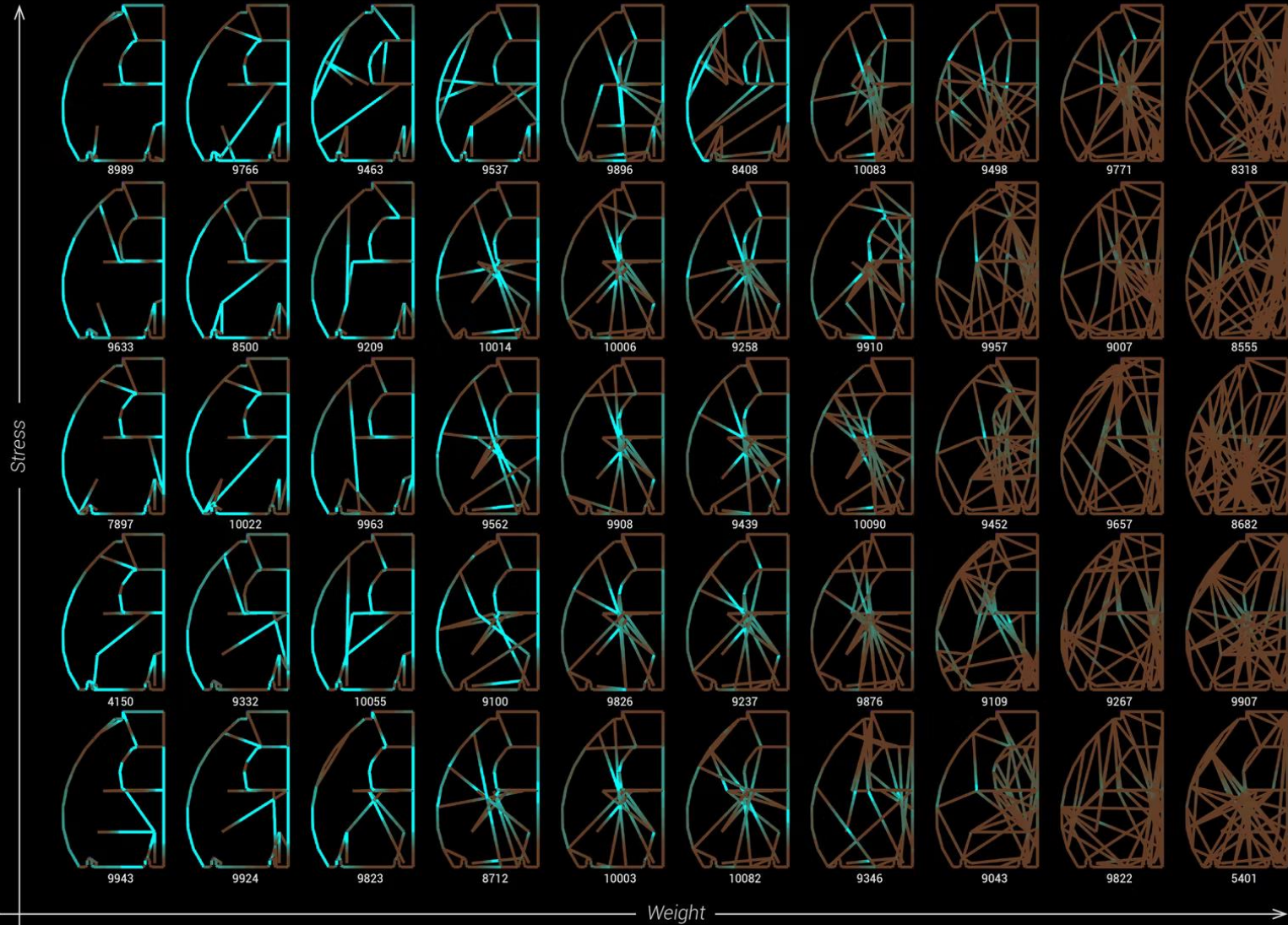


# Partition optimization via generative design

High stress  Low stress

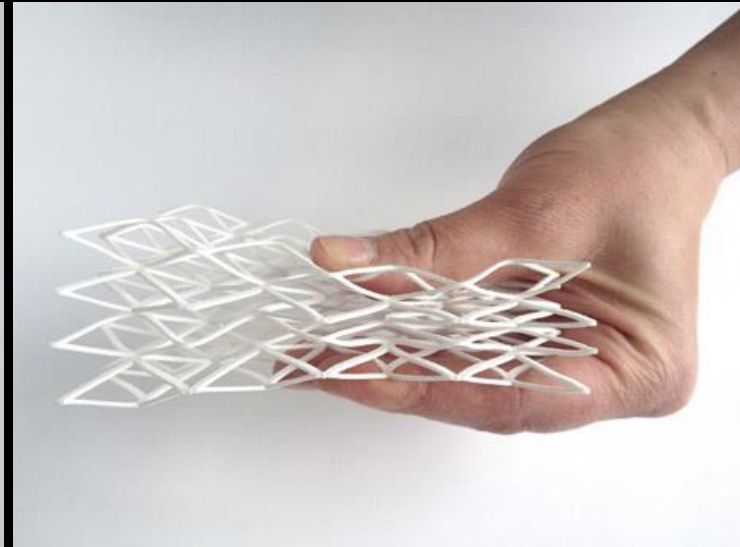
**AIRBUS** FOUNDATION

in partnership with  **AUTODESK**

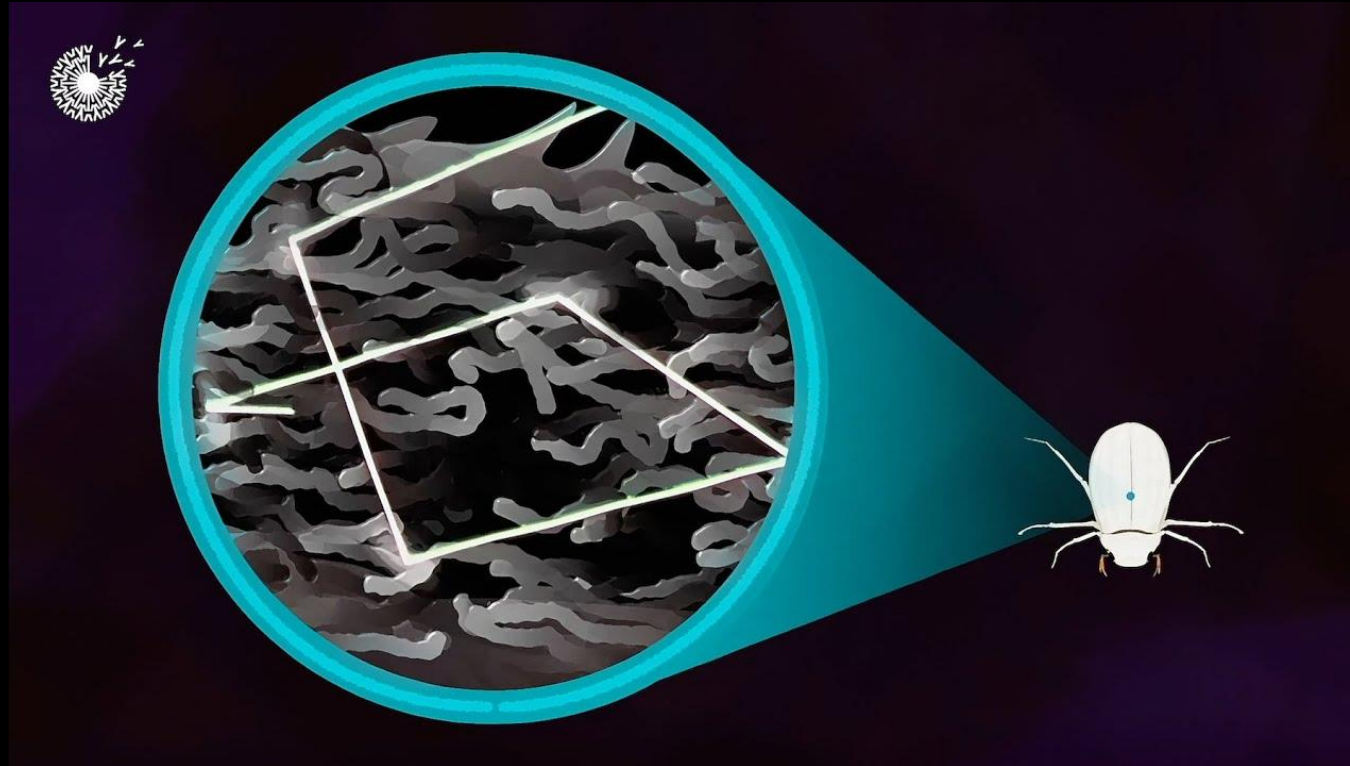


High-performing results based on goals

# Biomimicry chair by Lilian van Daal replaces traditional upholstery with 3D-printed structure



# Spintex



- the tensile strength of spider silk is five times stronger than that of steel
- a spider web "made of pencil-thick, spider-silk fibres can catch a fully loaded Jumbo Jet Boeing 747 with a weight of 380 tonnes

1 ton cement →

→ 1 ton CO<sub>2</sub>

# Bio-mineralization



# THE PROCESS



Calera



form

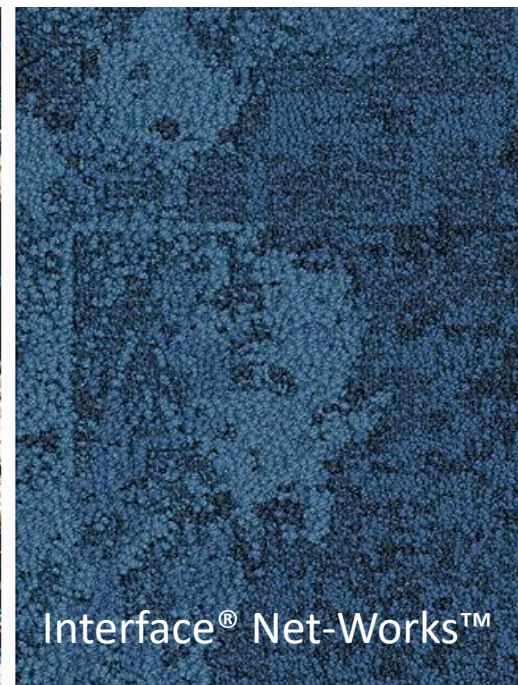


process



system





Interface® Net-Works™





BIOLOGICAL STRATEGIES   INSPIRED IDEAS   RESOURCES   COLLECTIONS

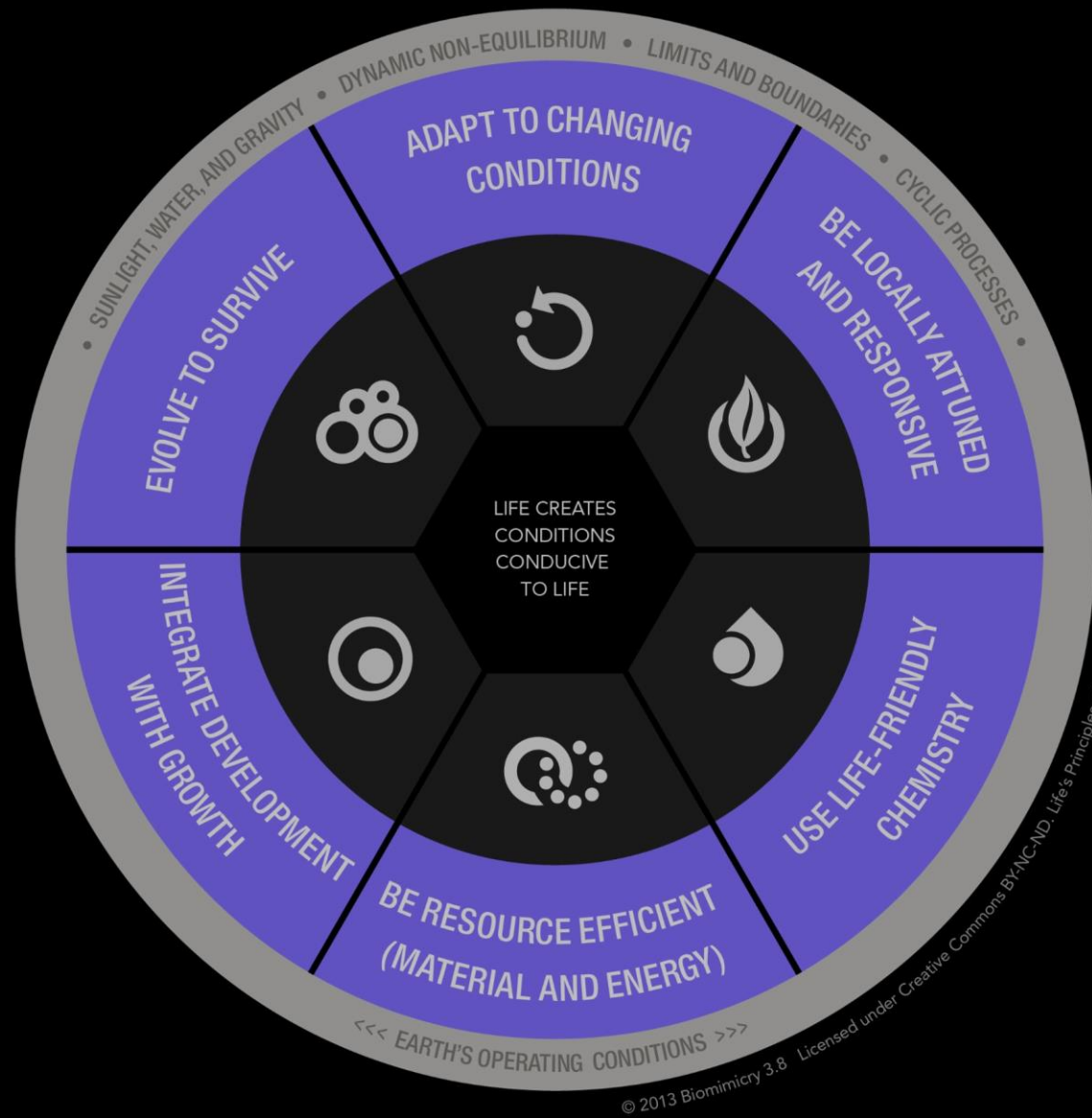


JOIN

SIGN IN

AskNature.org

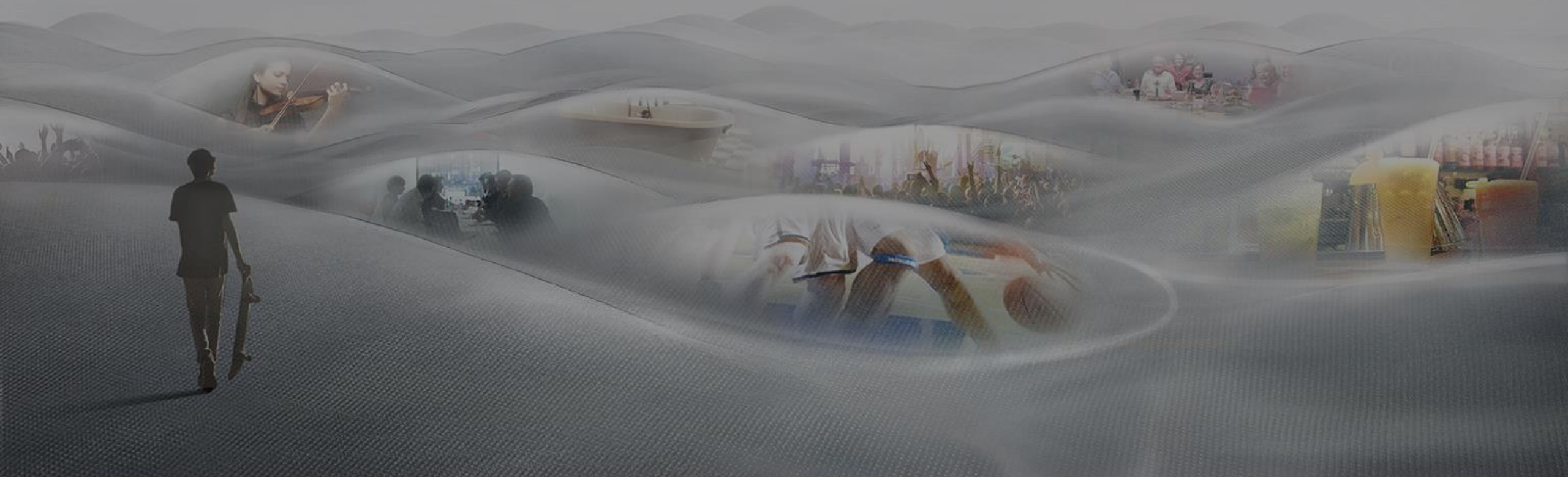
**It's time to ask nature.**



# LIFE'S PRINCIPLES



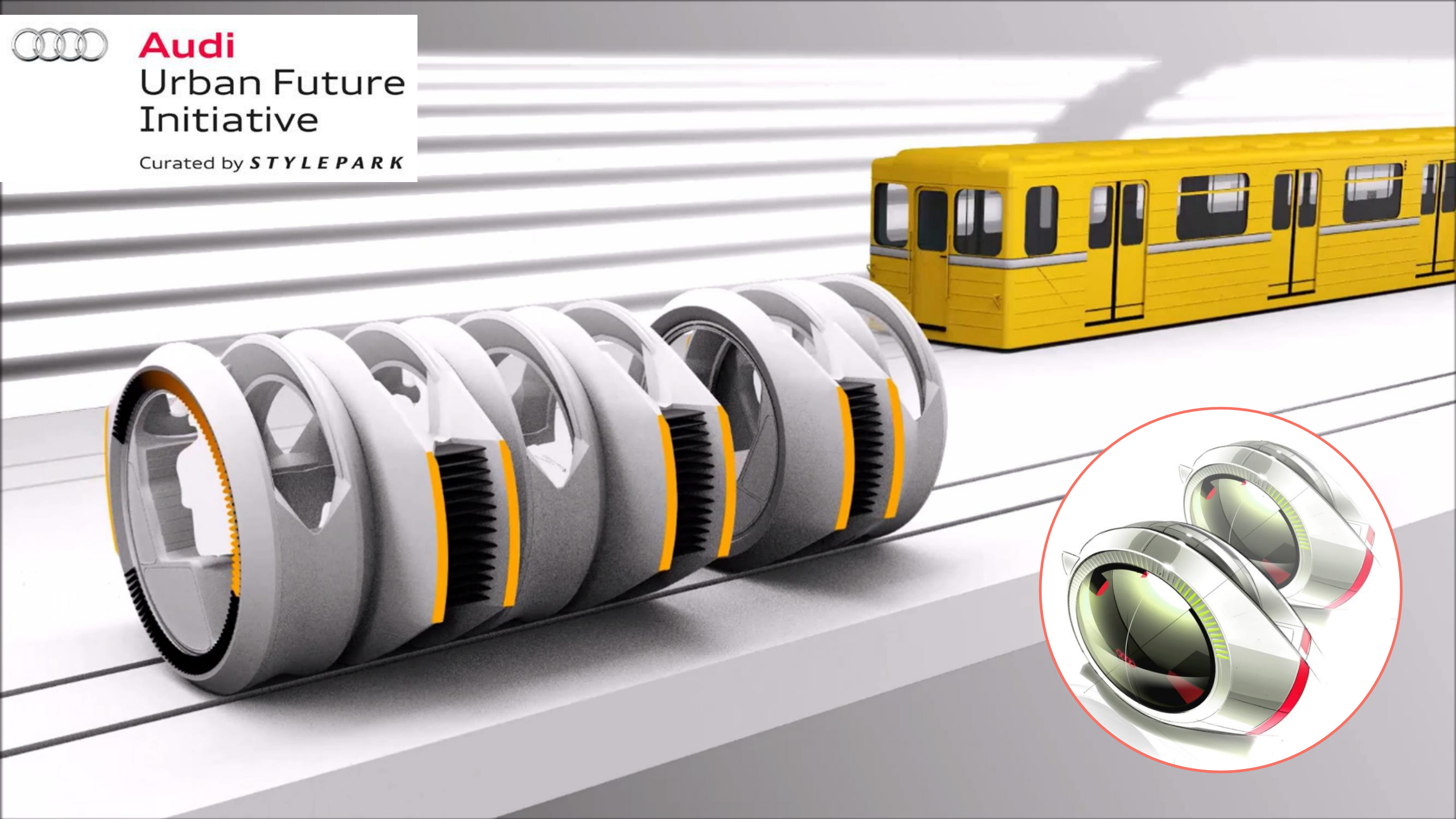
The future of the car industry is NOT about cars.  
It is about #mobility #lifequality #sustainableliving





# Audi Urban Future Initiative

Curated by *STYLEPARK*





**Schindler**



The Transit  
Management Expert



The Architect



**DR. ARNDT  
PECHSTEIN.**



The Biomimicry  
& Design Expert

Alex Guijarro | Oke Hauser | Sergey Prokofyev  
Dr. Prateep Beed | Gerard Webb  
Bjoern Hoffmann | Chakkarat Wongthirawat  
Markus Frank | Dennis Mielke



30%

40%

30%



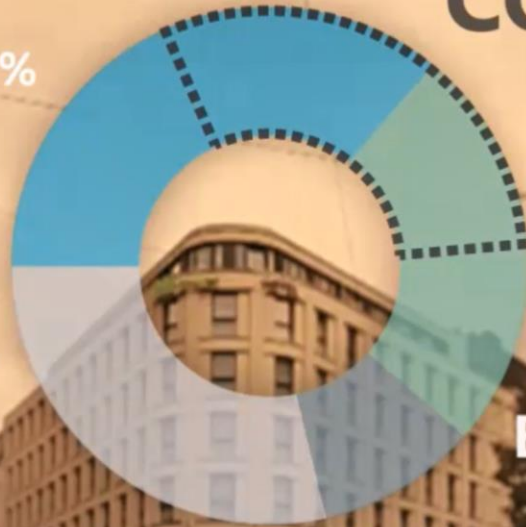
# COLLECTIVE

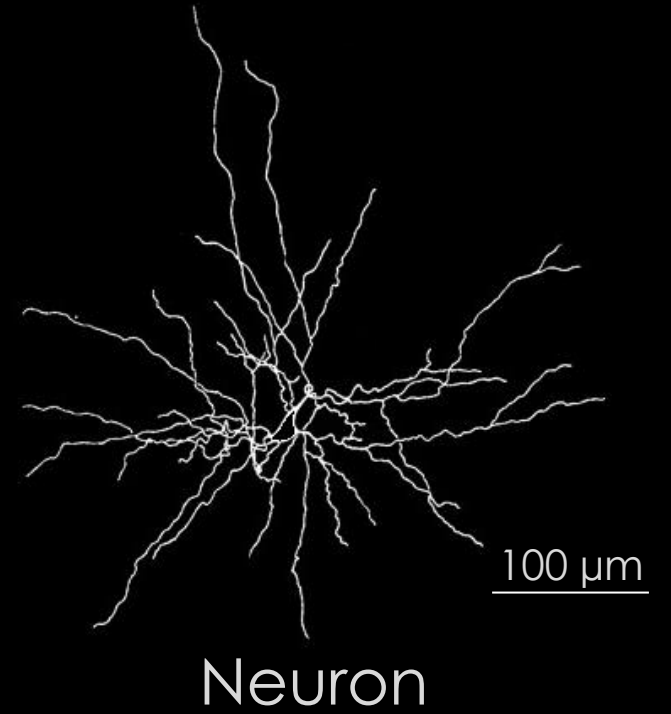
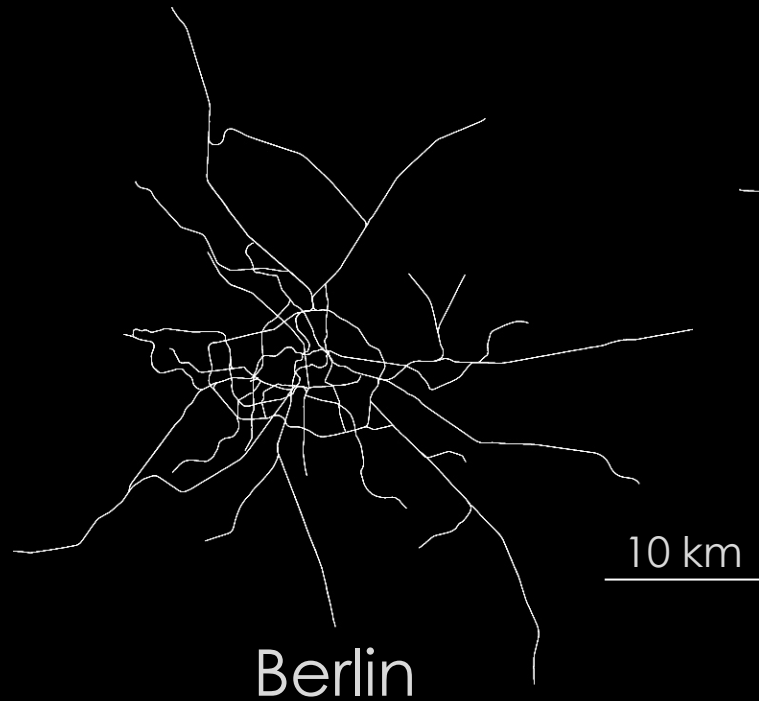
PRIVATE CAR 38%

PUBLIC TRANSPORT 27%

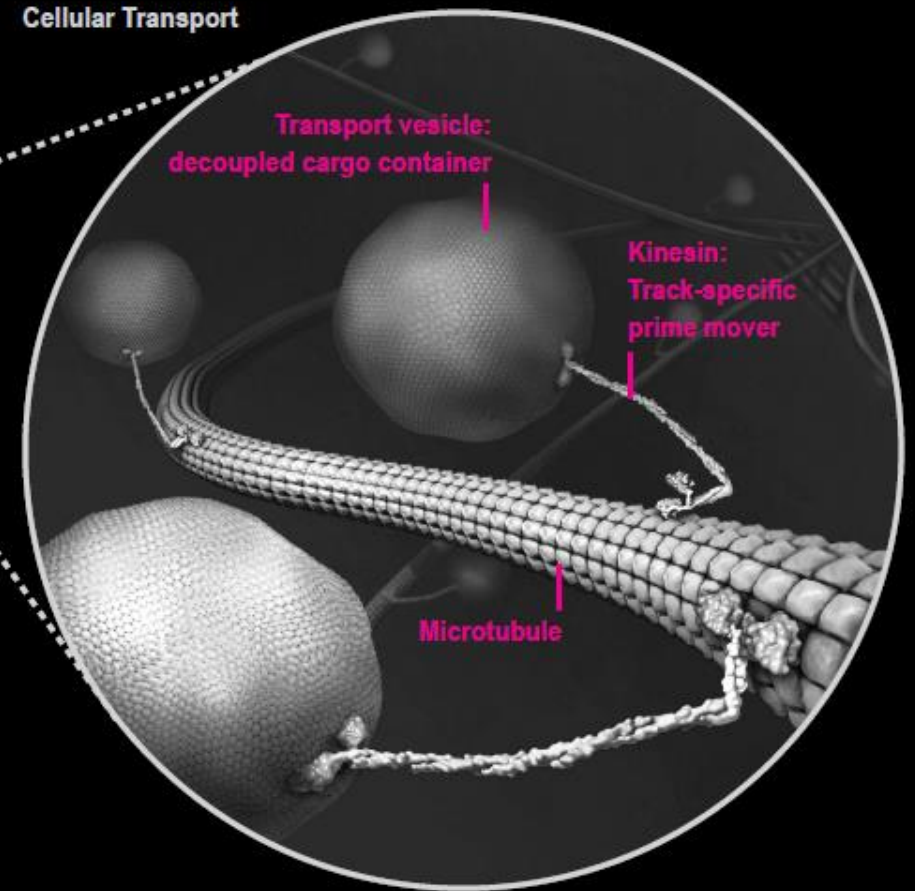
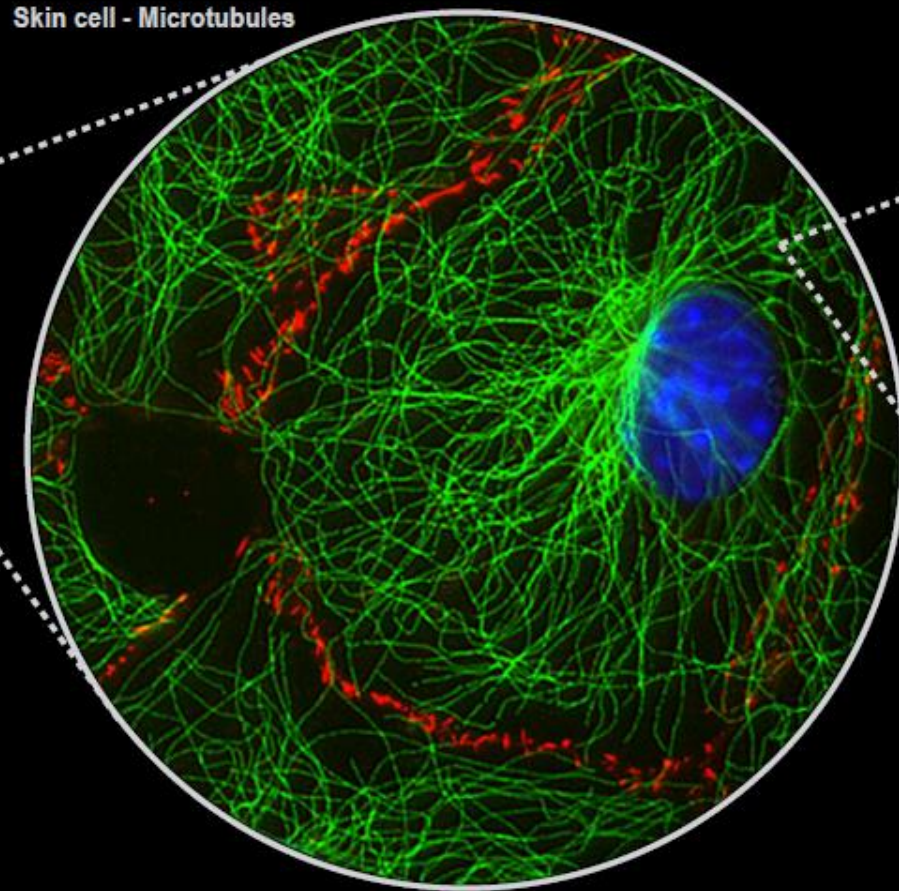
PEDESTRIAN 25%

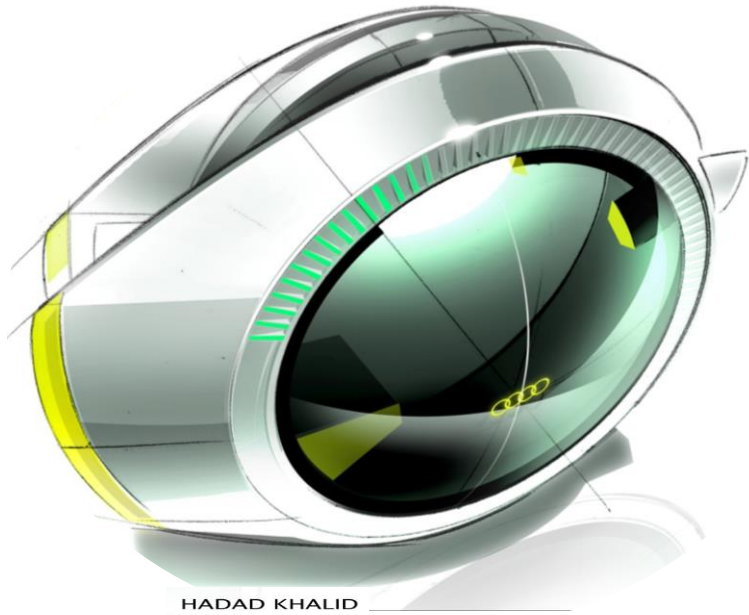
BICYCLE 10%





# Vehicle - Decoupling



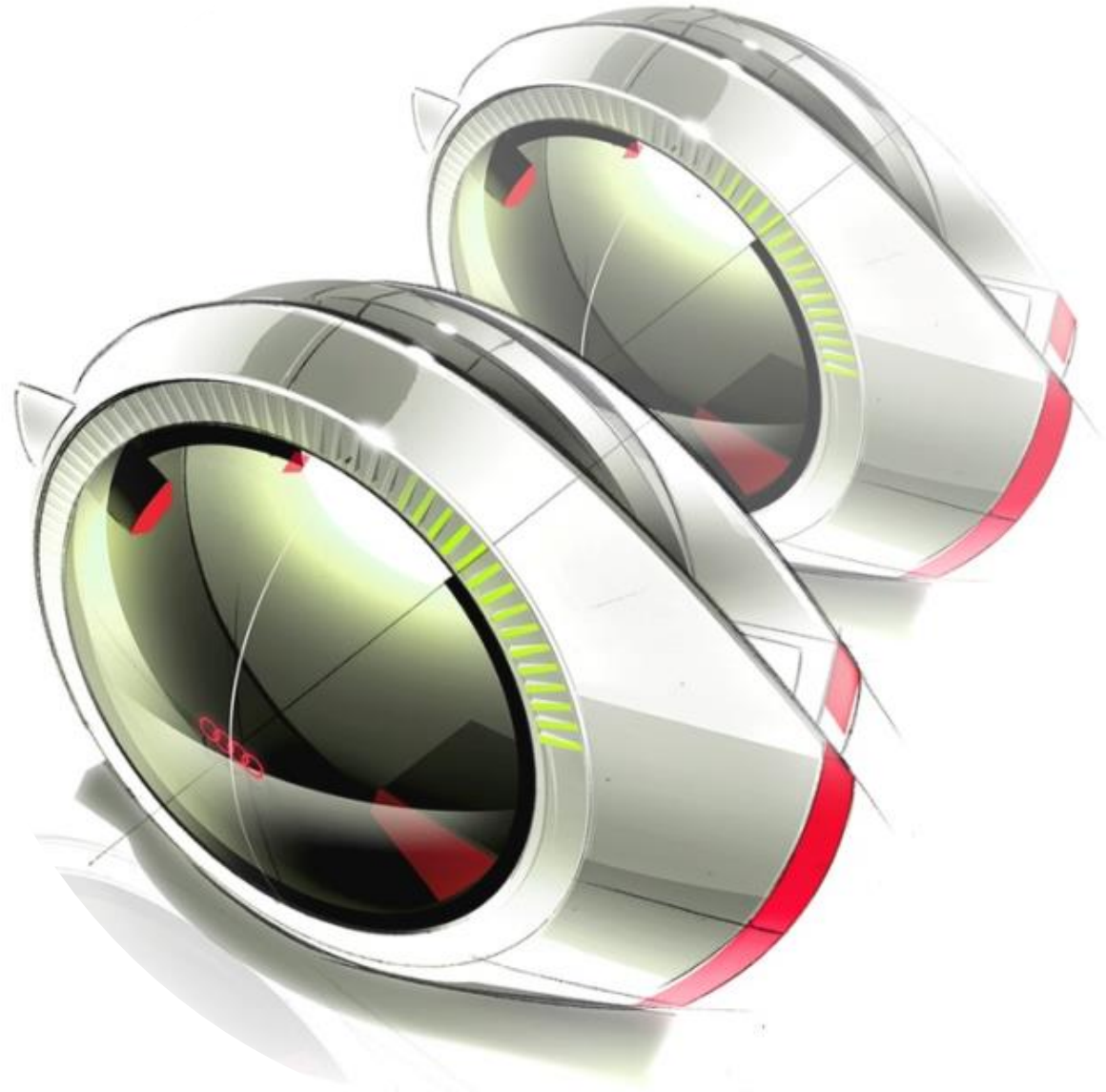


HADAD KHALID



**Audi**  
Urban Future  
Initiative

Curated by *STYLEPARK*







*You can't go back and change the beginning.*

*But you can start where you are  
and **change the ending.***

*\_C.S.Lewis*

**DR. ARNDT  
PECHSTEIN.**

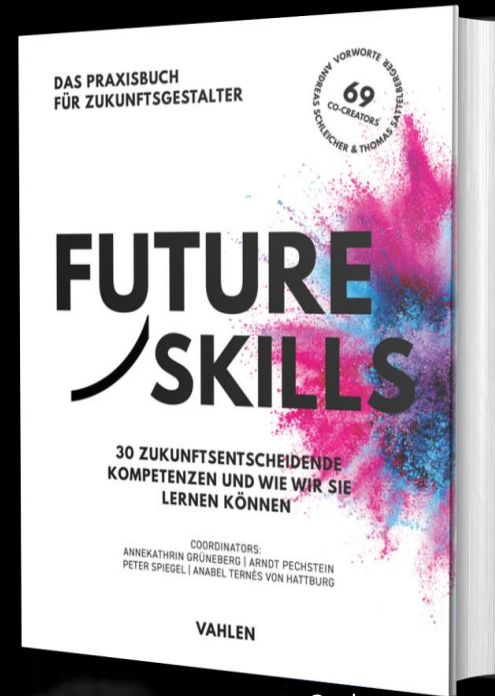
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**TEDx**  
Danubia  
**TEDx** Tehran

[contact@phi360.eu](mailto:contact@phi360.eu)



out now



out Q3/2022