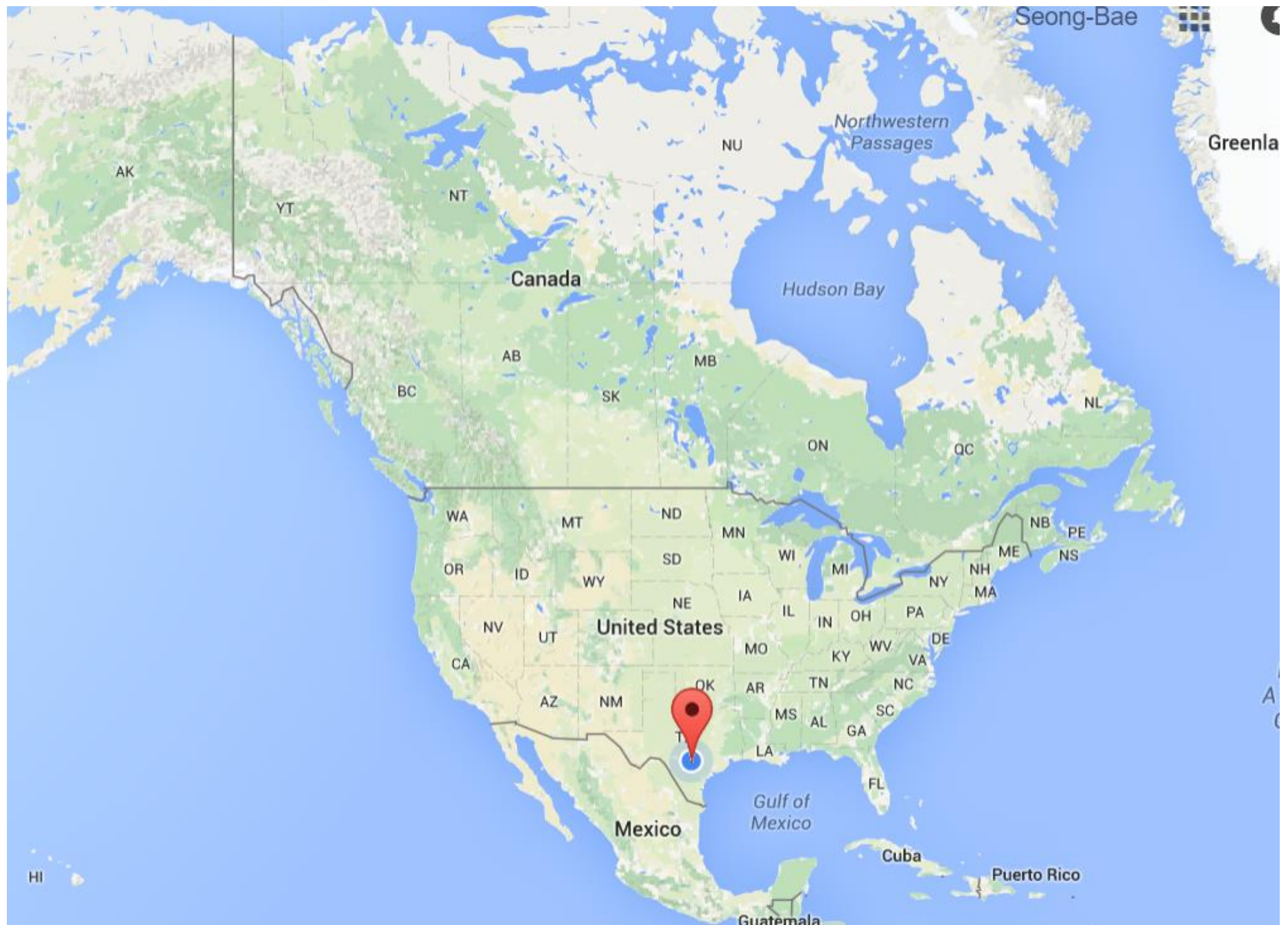


# **Building Co-evolving Asia Community through Collaborative Innovation**

**Universidad Complutense Madrid**  
**March 12, 2018**

**Seongbae Lim, Ph.D.**  
**St. Mary's University, USA**













— RANKED BY THE BROOKINGS INSTITUTION —

**TOPS** **17<sup>TH</sup>** **BEST**  
IN TEXAS IN THE NATION IN SAN ANTONIO

— FOR PREPARING GRADUATES FOR SUCCESS —







As a Catholic and Marianist University, St. Mary's is committed to serving our community and developing leaders dedicated to the common good.

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ST. MARY'S  
UNIVERSITY





Evolution of  
Innovation



Innovation 4.0 &  
Asia Community

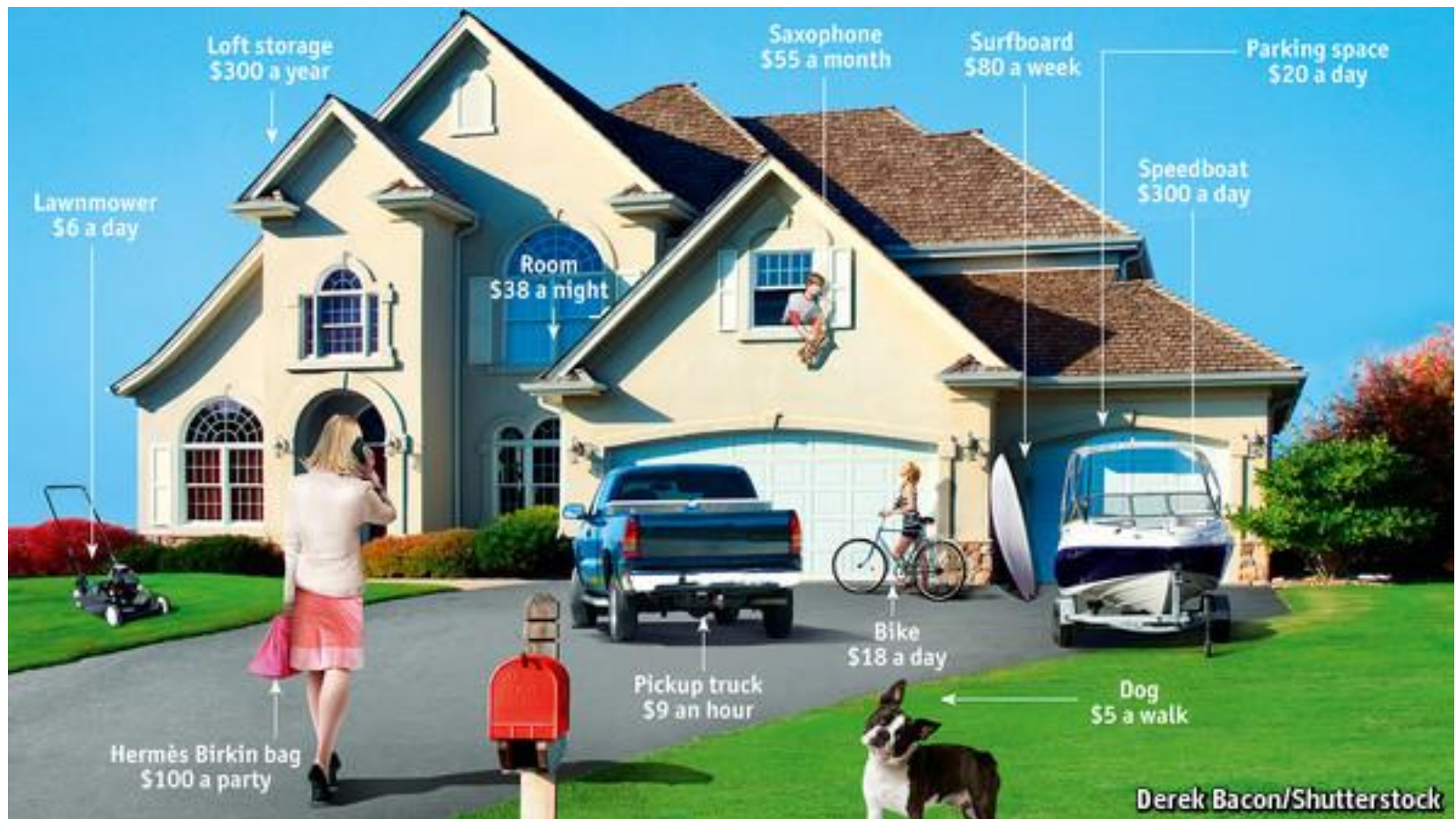




# Mega Trend

---

# Sharing Economy





# Experience Economy



## Hyper Connected World





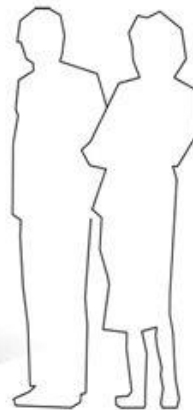
# Big Data



# Yes, you can have one.

No, you're not dreaming. D-Wave offer the first commercial quantum computing system on the market. We believe in building great things that are as inspiring as they are powerful.

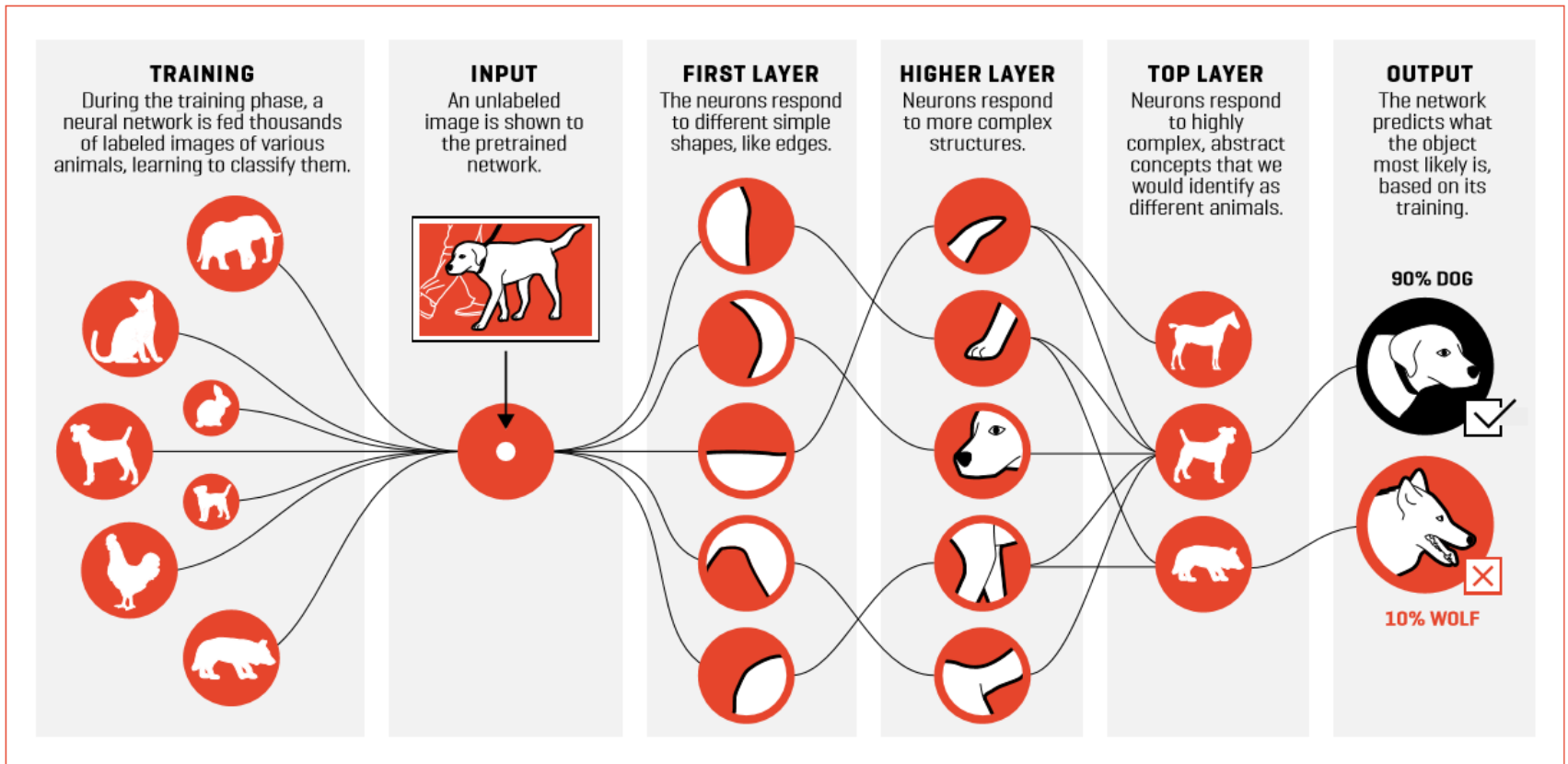
If you're passionate and curious about the future of computation, and you'd like to take a different approach to solving problems, then take a look at our products.

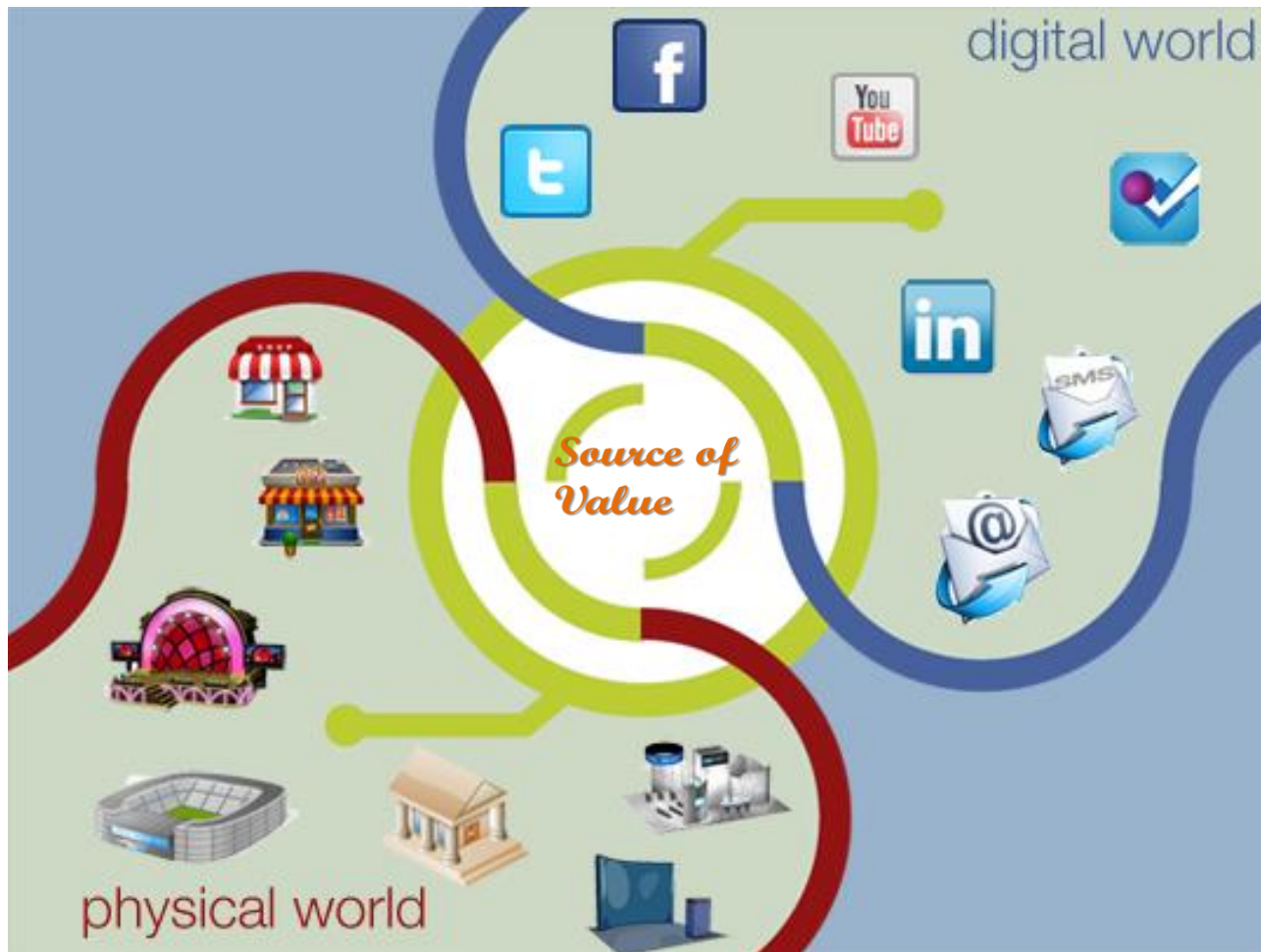


D-Wave One™  
information

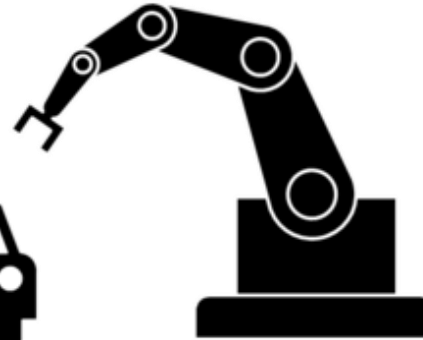


# Deep Learning









**1st**

Mechanization,  
water power, steam  
power

**2nd**

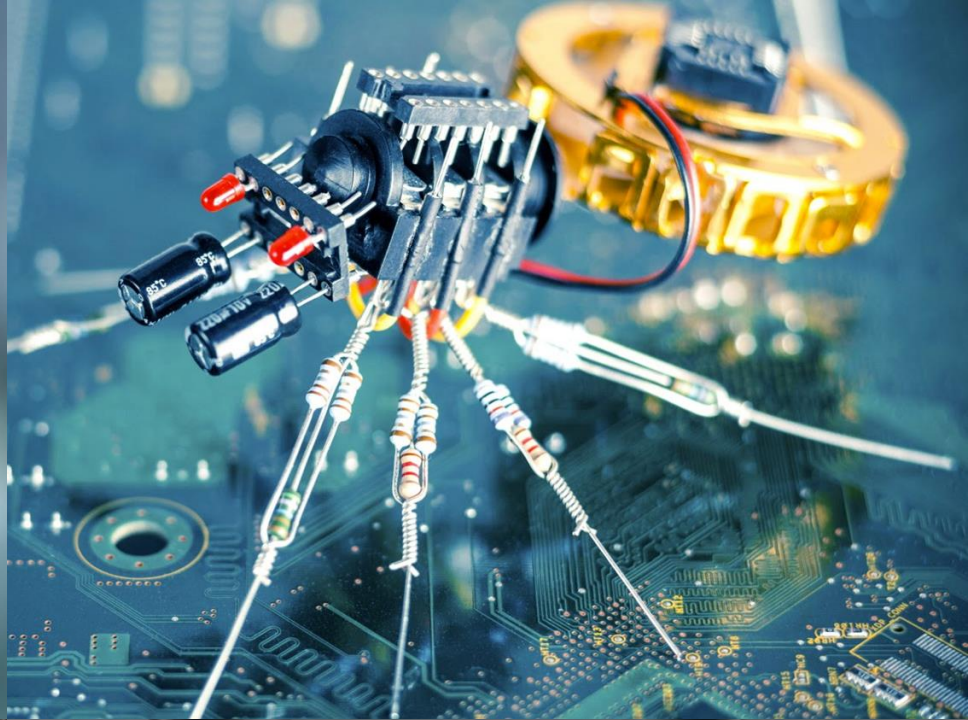
Mass production,  
assembly line,  
electricity

**3rd**

Computer and  
automation

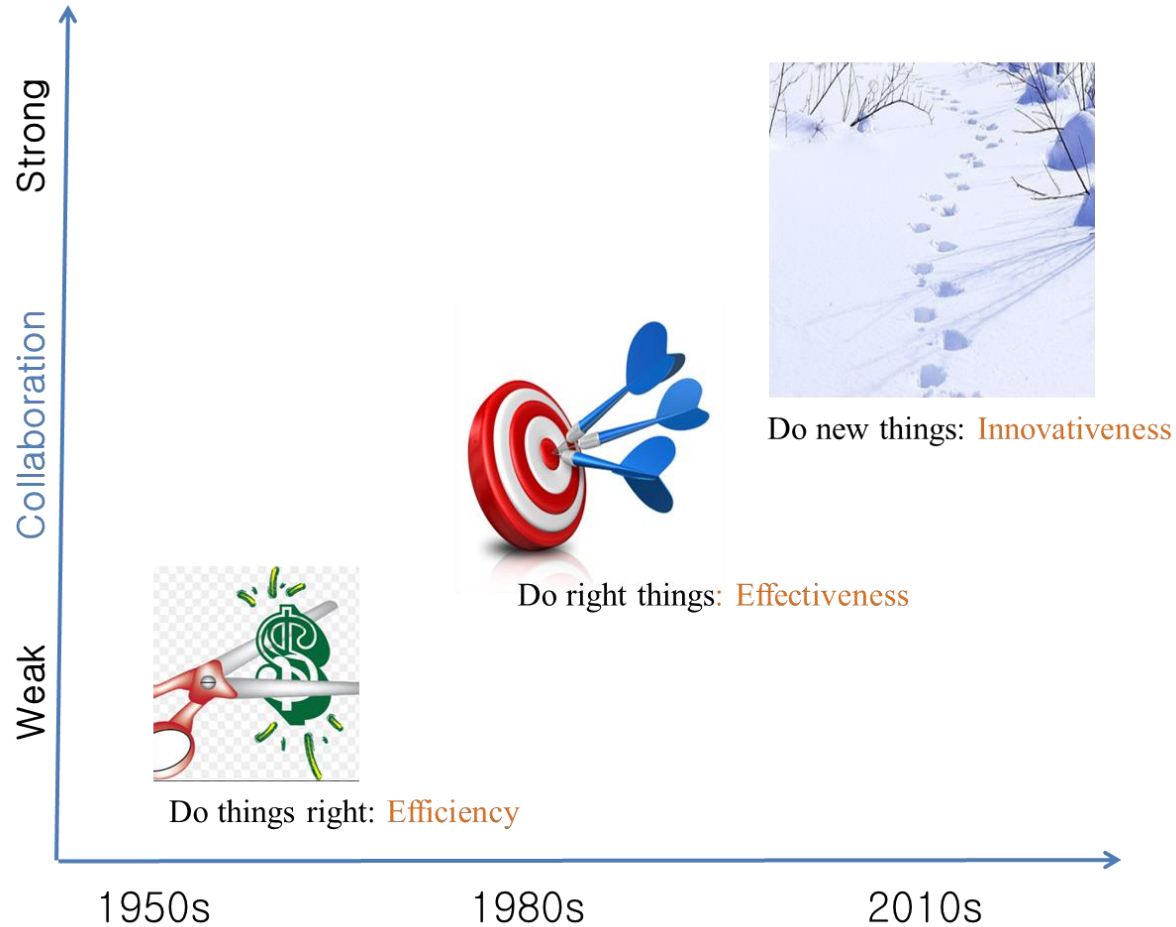
**4th**

Cyber Physical  
Systems





# IMPERATIVE FOR INNOVATION



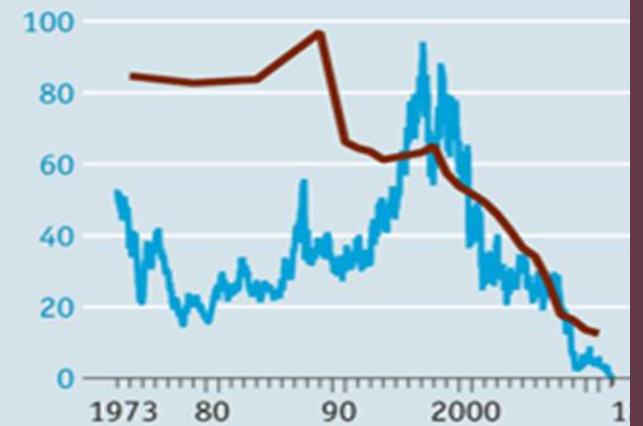


## An ugly picture

Kodak's:

share price, \$

employees



Sources: Company reports; Thomson Reuters

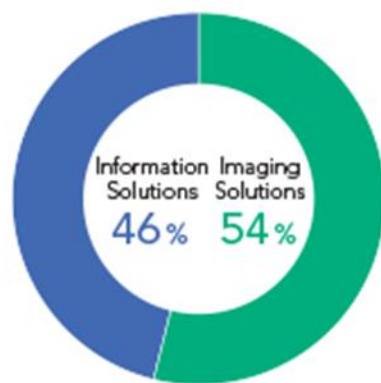


Claudio Munoz

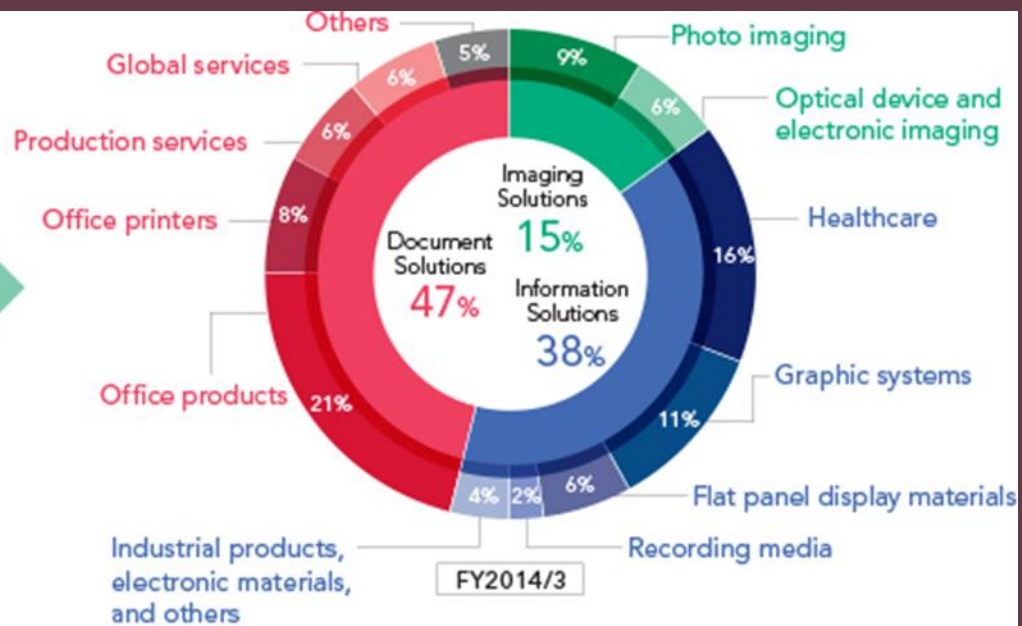


FUJIFILM  
ASTALIFT  
Photogenic Beauty





FY2001/3



FY2014/3



# **Innovation: definition**

- New ideas or approaches applied in fundamentally different ways resulting in significant value in organization and other stakeholders
- Tangible realization and adoption of a new idea in the form of a product, service, and business process





**FRESH-AIR BREATHING DEVICE AND METHOD**

Inventor: William O. Holmes, 1331 Old Country Rd., Belmont, Calif. 94402

Appl. No.: 237,869

Filed: Feb. 25, 1981

Int. Cl.<sup>3</sup> ..... A62B 7/10; A62B 7/12

U.S. Cl. .... 128/206.12; 128/207.14; 128/207.12; 128/200.24

Field of Search ..... 128/200.24, 201.11, 128/205.25, 205.12, 205.27, 205.28, 205.29, 206.12, 206.15, 206.21, 206.28, 207.12, 207.14

**References Cited**

**U.S. PATENT DOCUMENTS**

276,699	5/1883	McIntosh	1	2
409,428	8/1889	Richet	1	2
1,007,644	10/1911	Cocke	1	2
1,423,923	7/1922	Eckert, Jr.	1	1
2,577,606	12/1951	Conley	1	29

**FOREIGN PATENT DOCUMENTS**

1473382	3/1967	France	128/201.11
949141	9/1956	Fed. Rep. of Germany	128/207.12

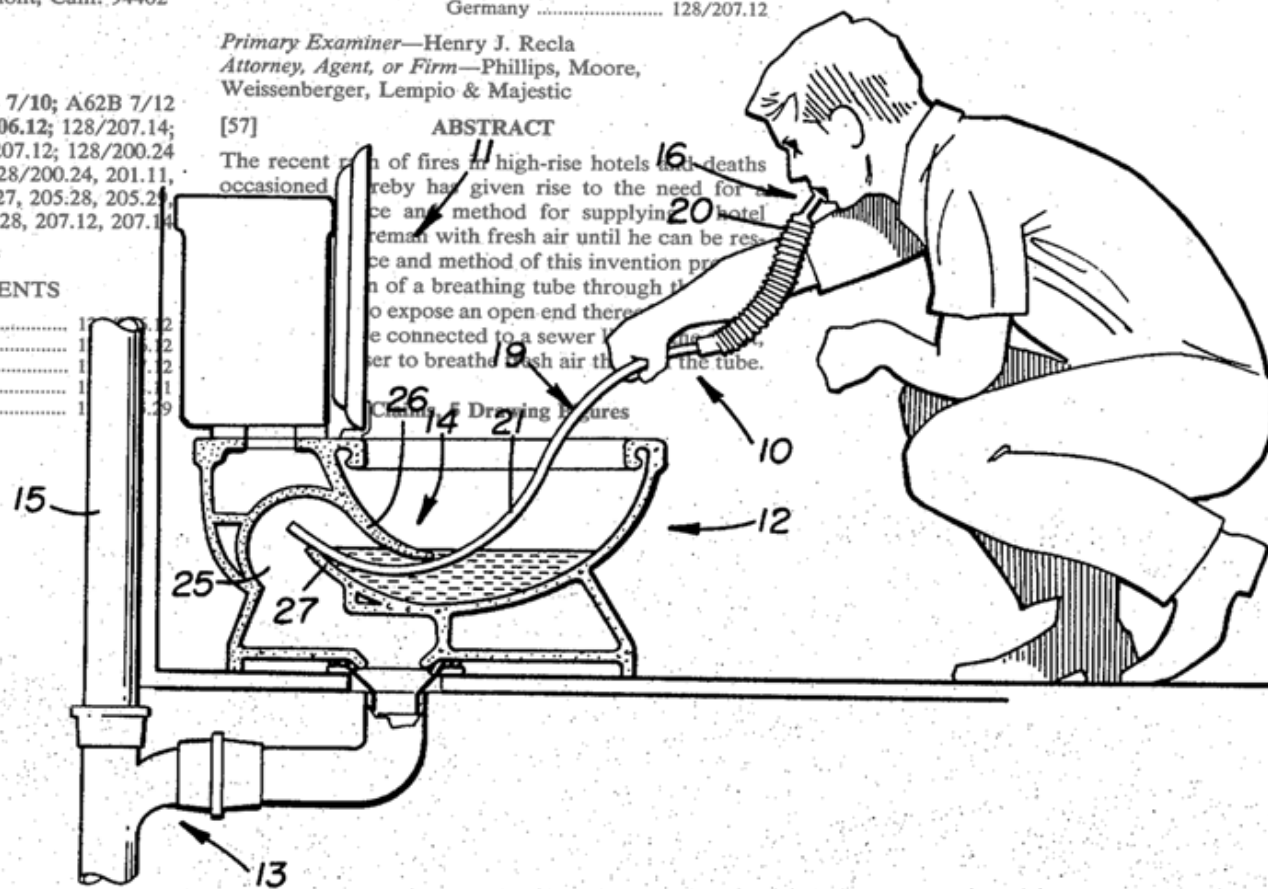
Primary Examiner—Henry J. Recla  
Attorney, Agent, or Firm—Phillips, Moore, Weissenberger, Lempio & Majestic

[57]

**ABSTRACT**

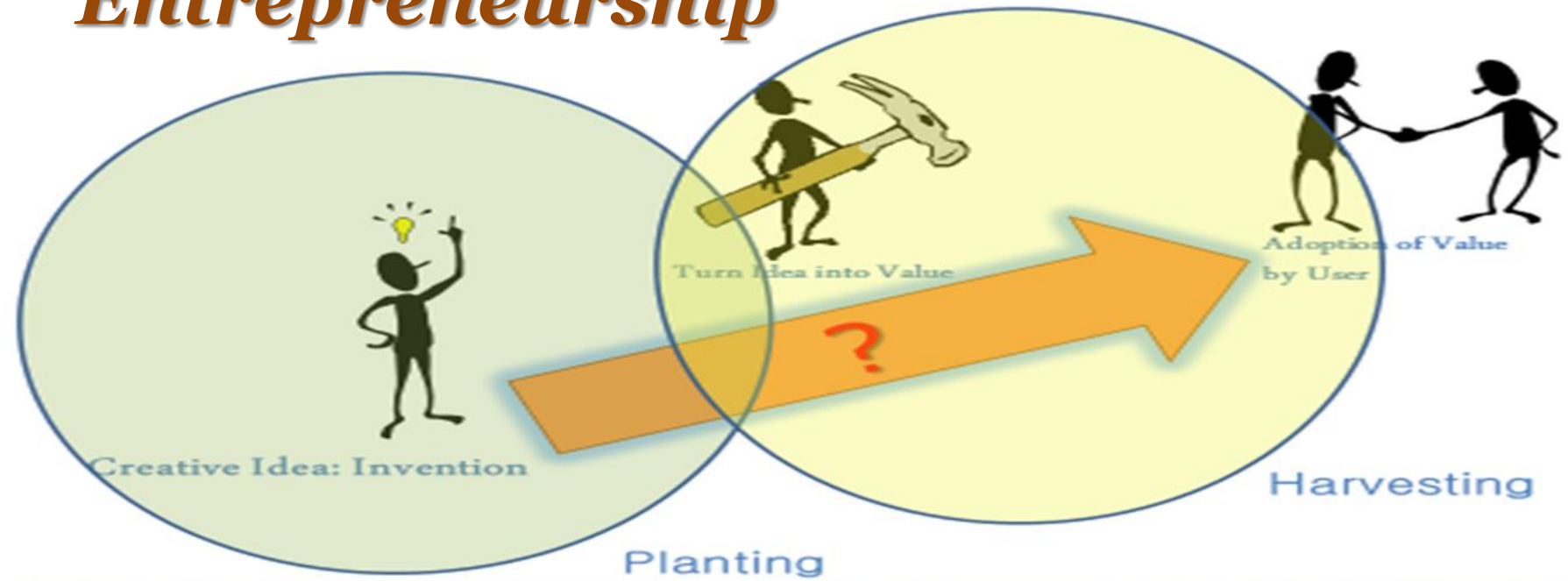
The recent occurrence of fires in high-rise hotels and deaths thereby has given rise to the need for a device and method for supplying hotel guests with fresh air until they can be rescued and method of this invention provides for the use of a breathing tube through the toilet of a hotel room to expose an open end thereof to fresh air. The tube is connected to a sewer pipe and the user breathes fresh air through the tube.

Claims, 5 Drawing Figures



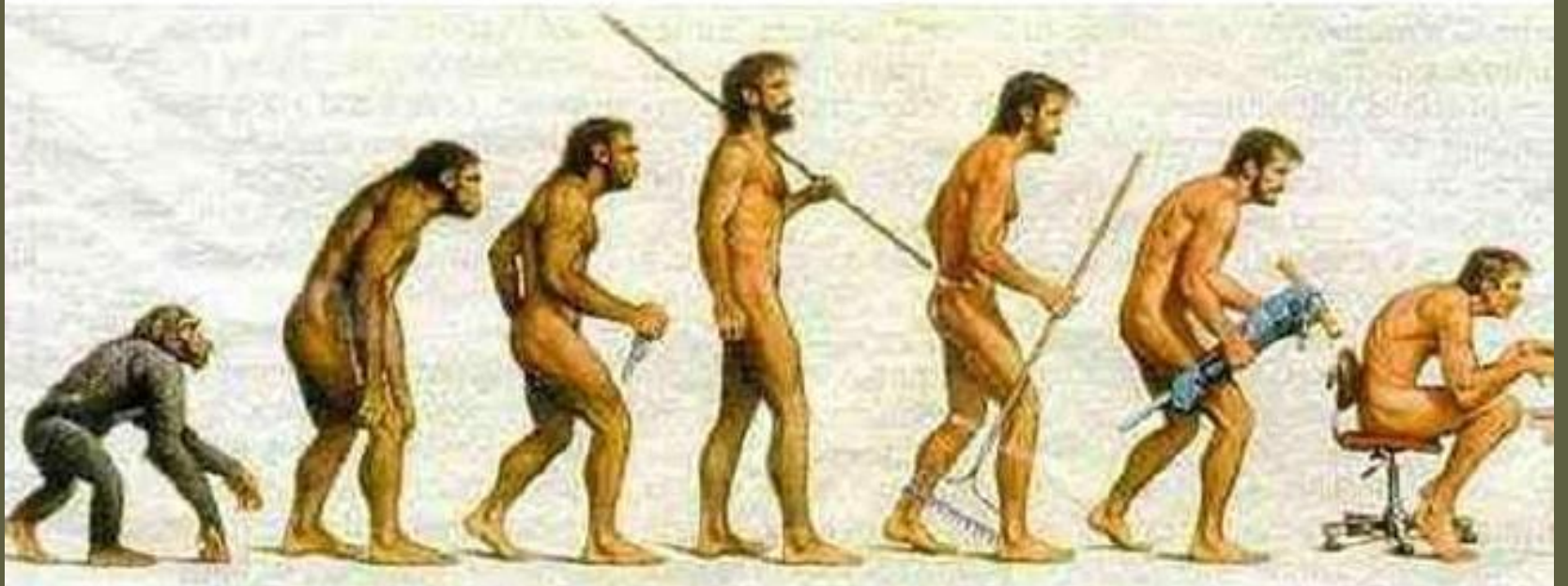


# Entrepreneurship





# Evolution



# Innovation

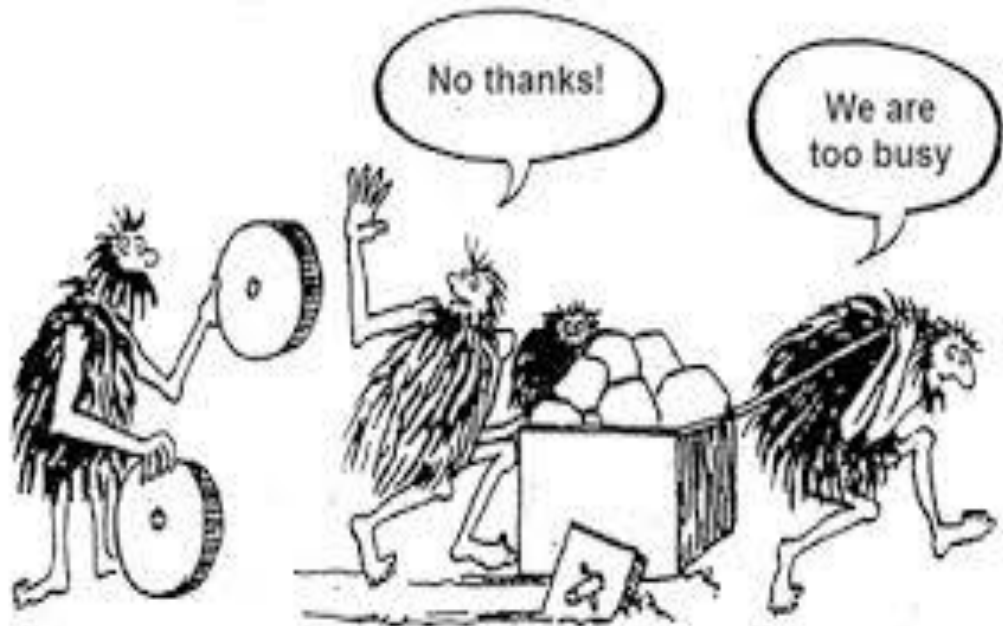
## INNOVATION 1.0

# Closed Innovation



### ❖ Organization bound, closed system

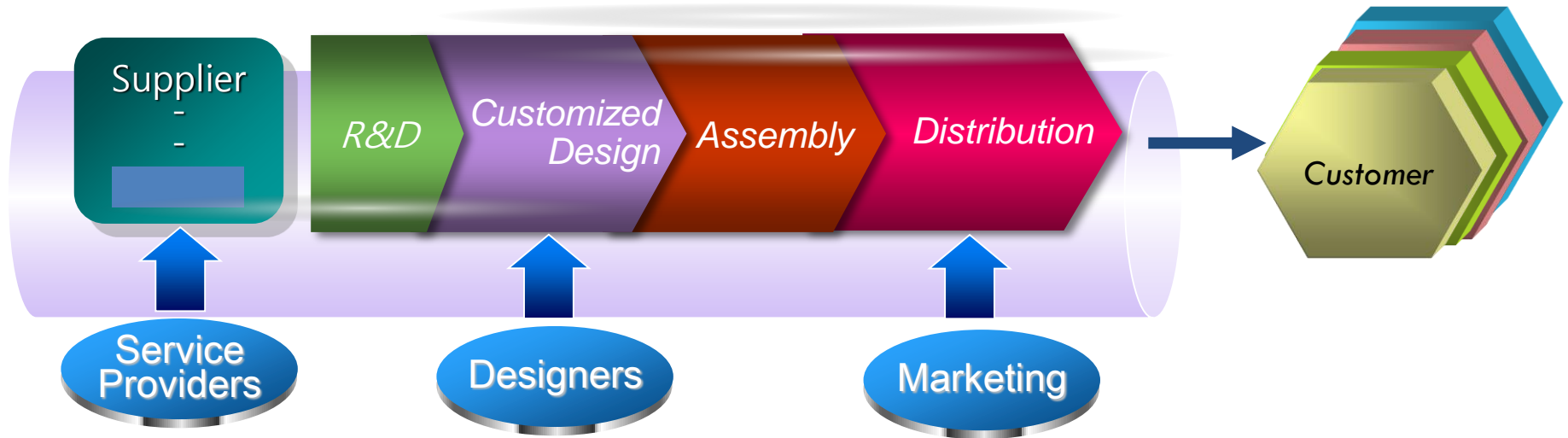
- Independent, isolated value chain
- Conventional innovation strategy
  - Develop own core competence and leverage it
- First to the market
- P&G (Not Invented here), NASA (as Only NASA Can)





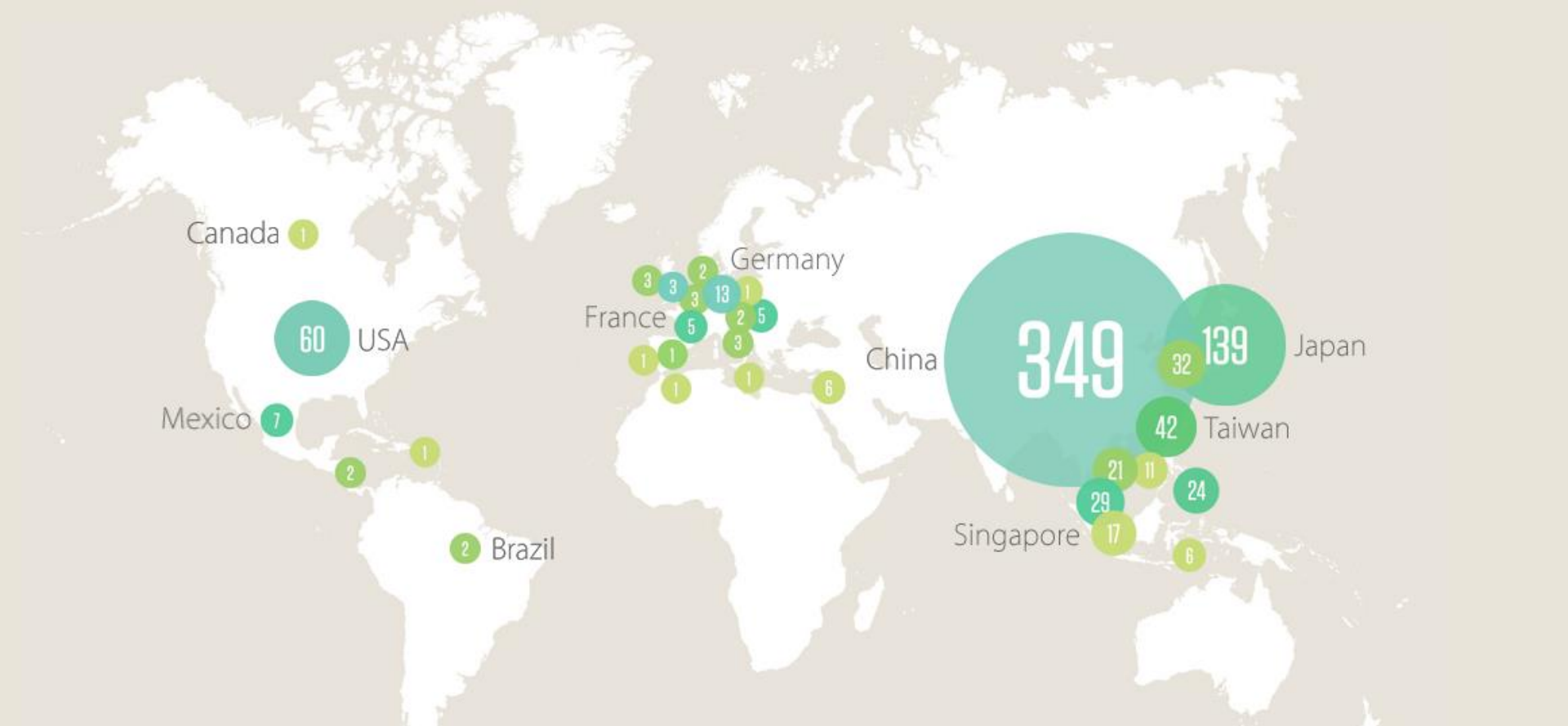
## INNOVATION 2.0

## Collaborative Innovation



### ❖ Organization bound + external partners

- Inter-organizational relationships based value chain
  - Nike, Apple, Dell, VISIO
- Value chain innovation for efficiency
- Core competence + other world class partners



# Apple's Global Supply Chain Network



Sourcing



Manufacturing



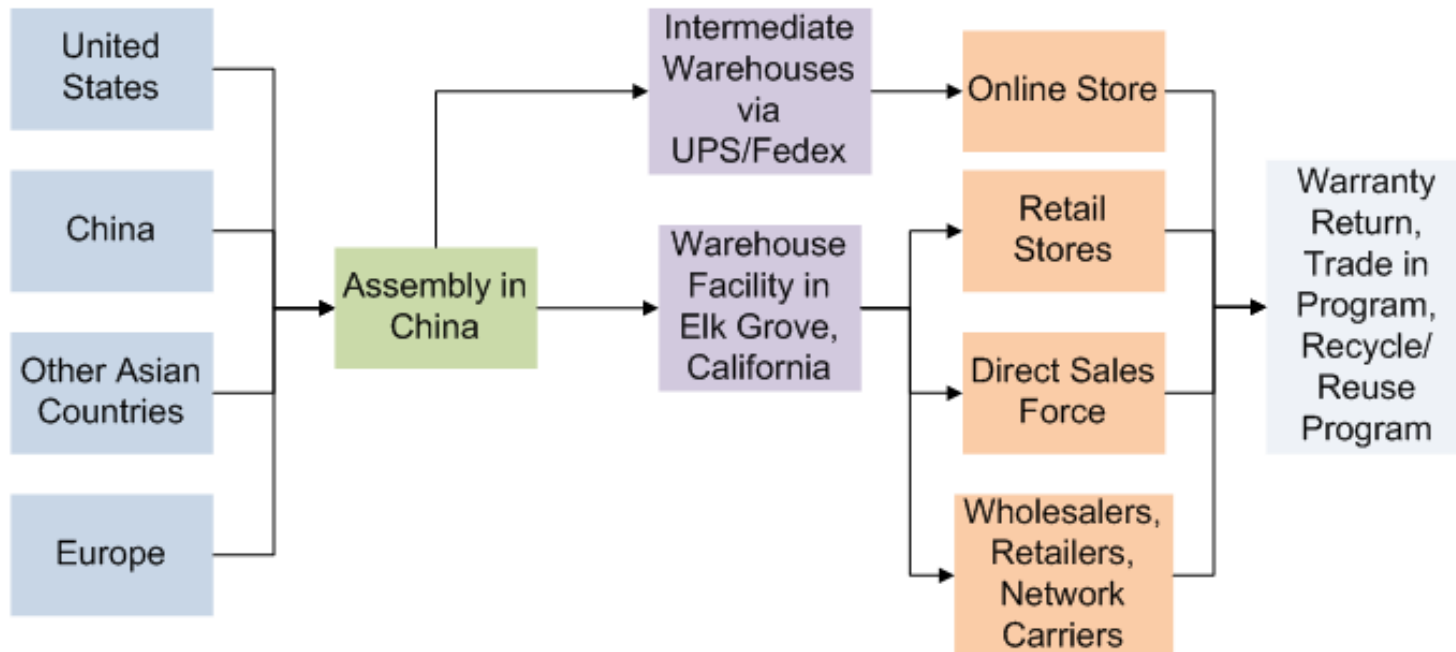
Warehousing



Distribution



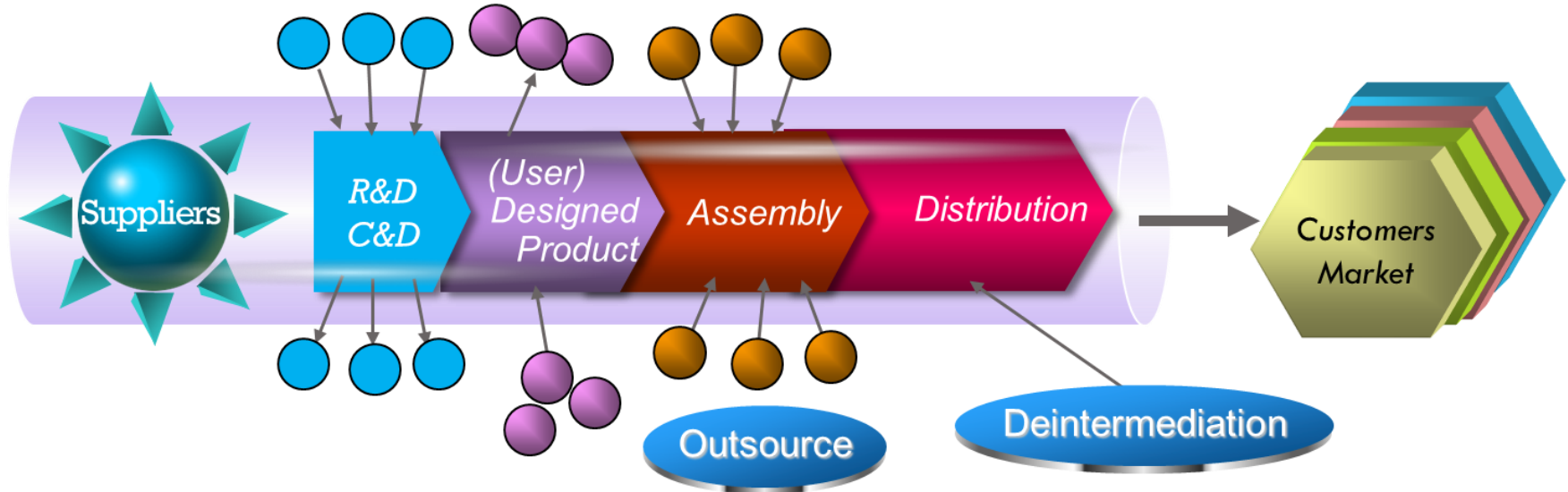
Return





## INNOVATION 3.0

## OPEN INNOVATION



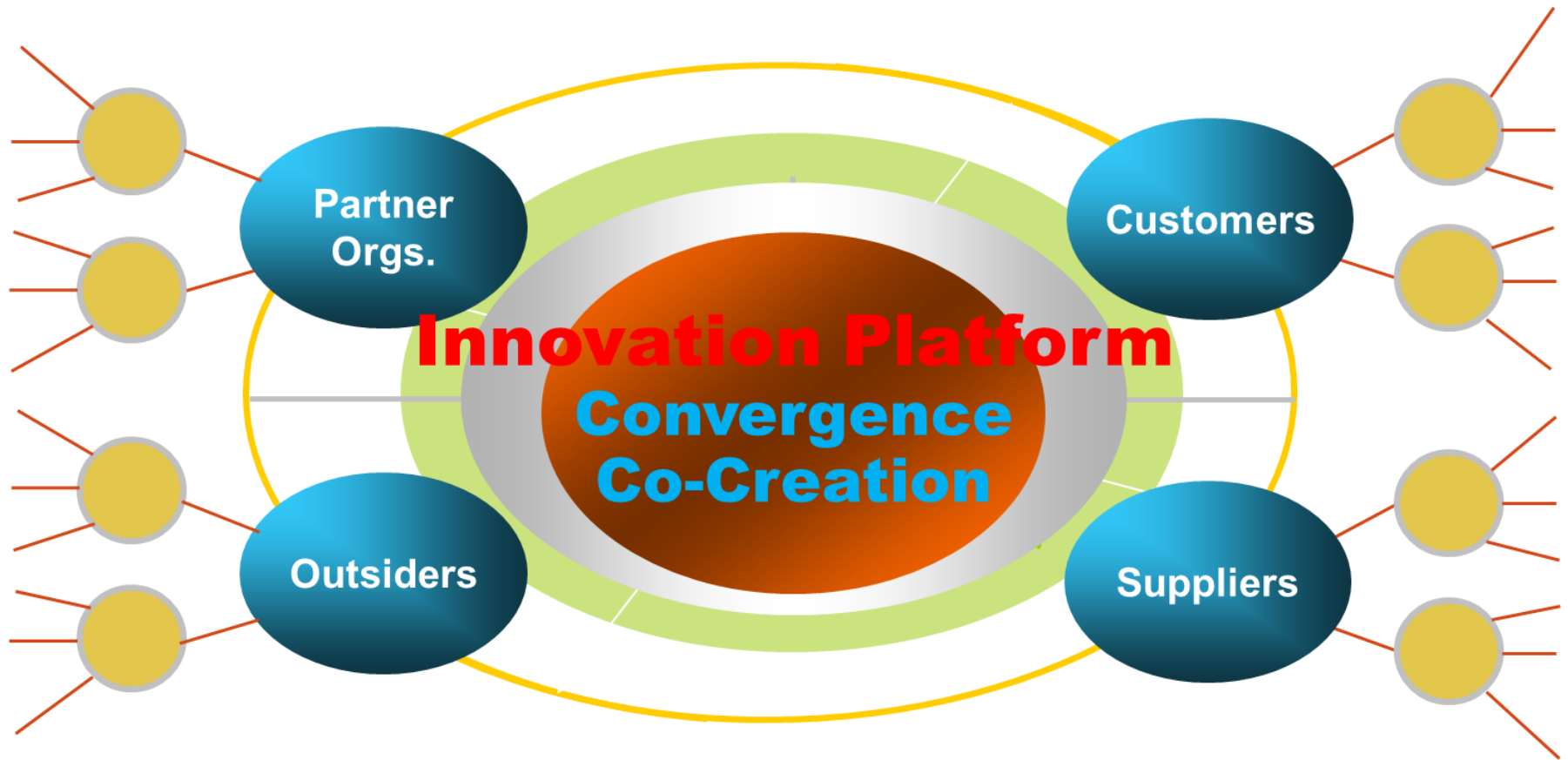
### ❖ Integrated innovation ecosystem – open innovation

- Seamless convergence of organization and open innovation
- Focus on individual contribution
- R&D plus C&D (Connect & Develop), copyright to copyleft,
- PFE (Profoundly Found Elsewhere)
- Inside out, outside in



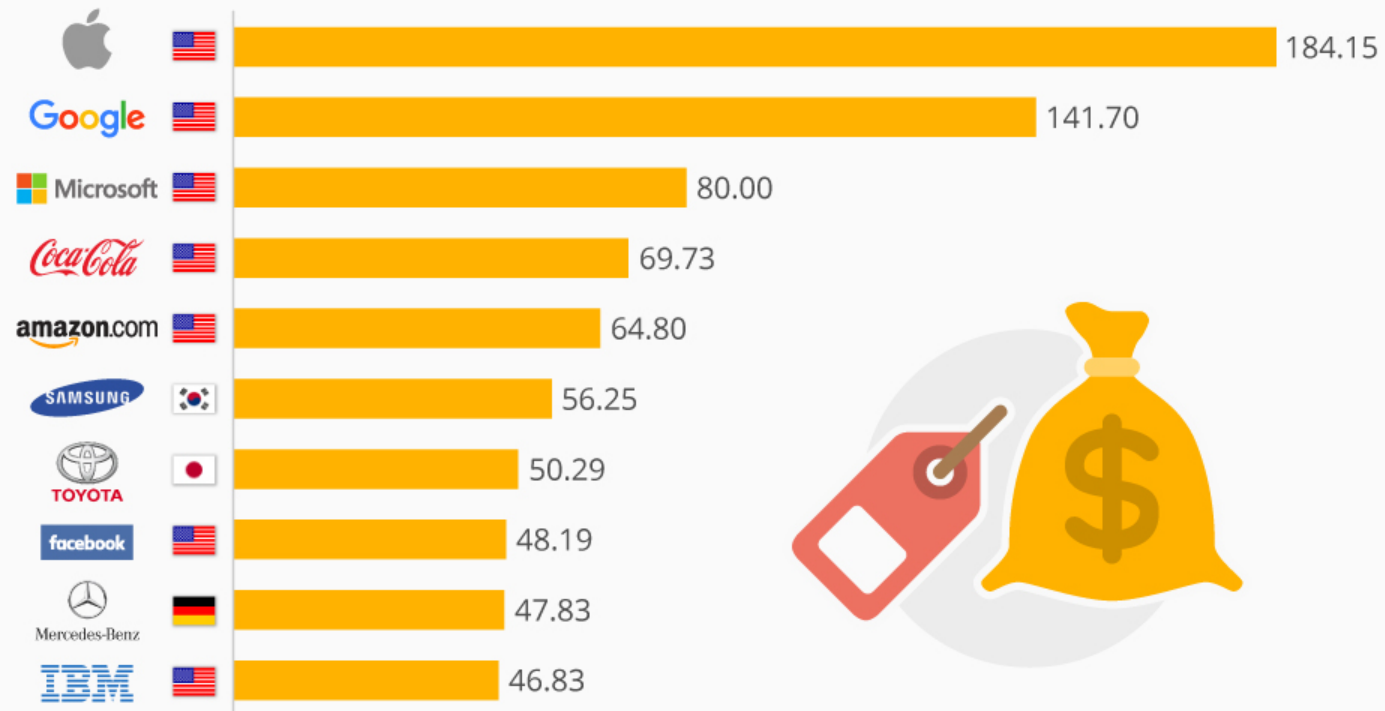


## INNOVATION 4.0 : Co-innovation

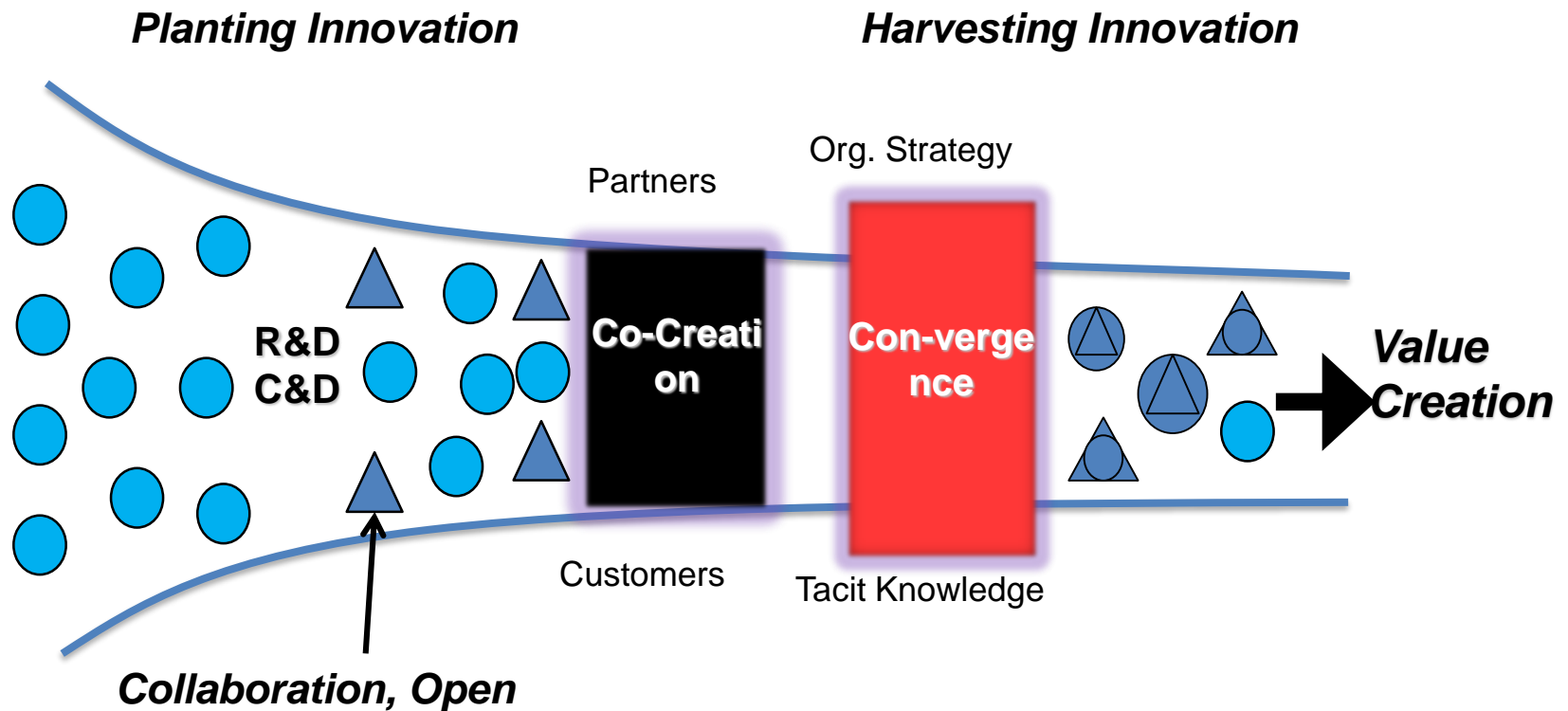


# The World's Most Valuable Brands

Estimated value of the world's most valuable brands in 2017 (in billion USD)



# Co-Innovation Architecture

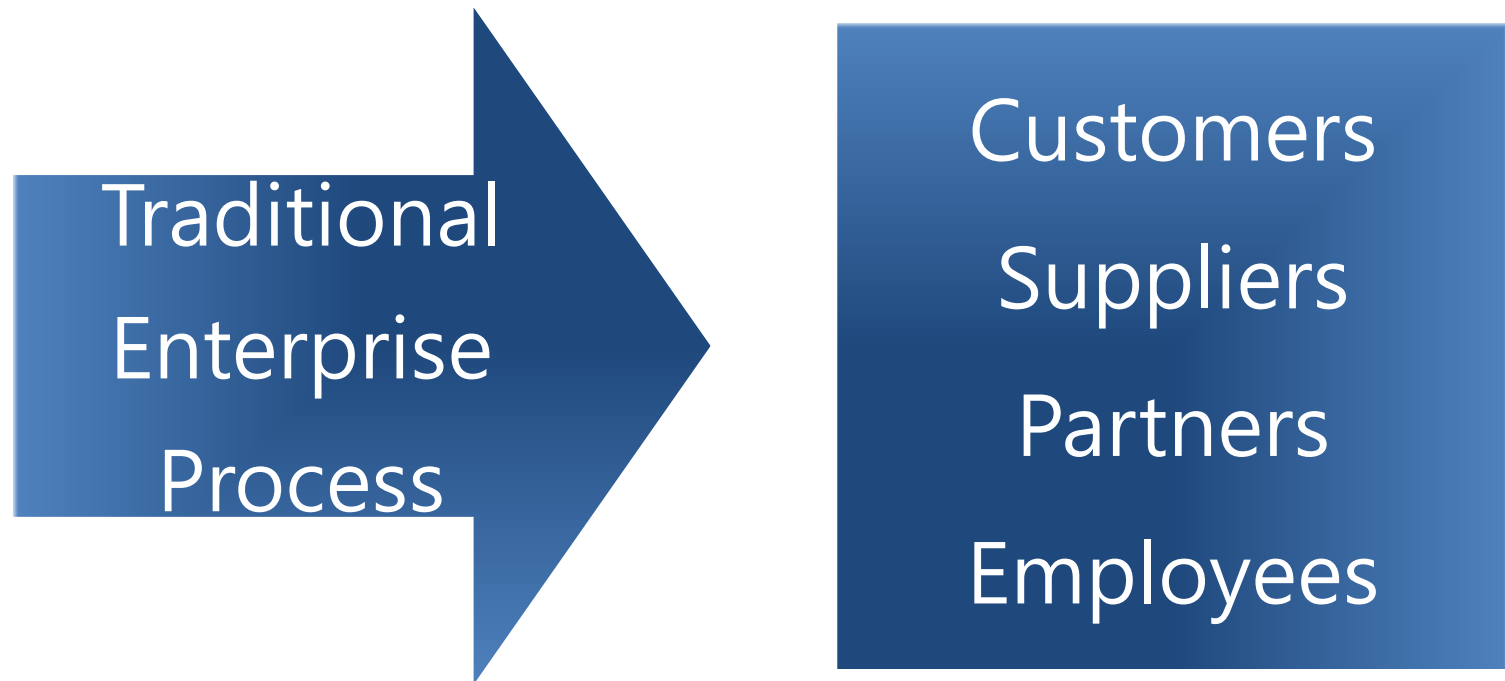




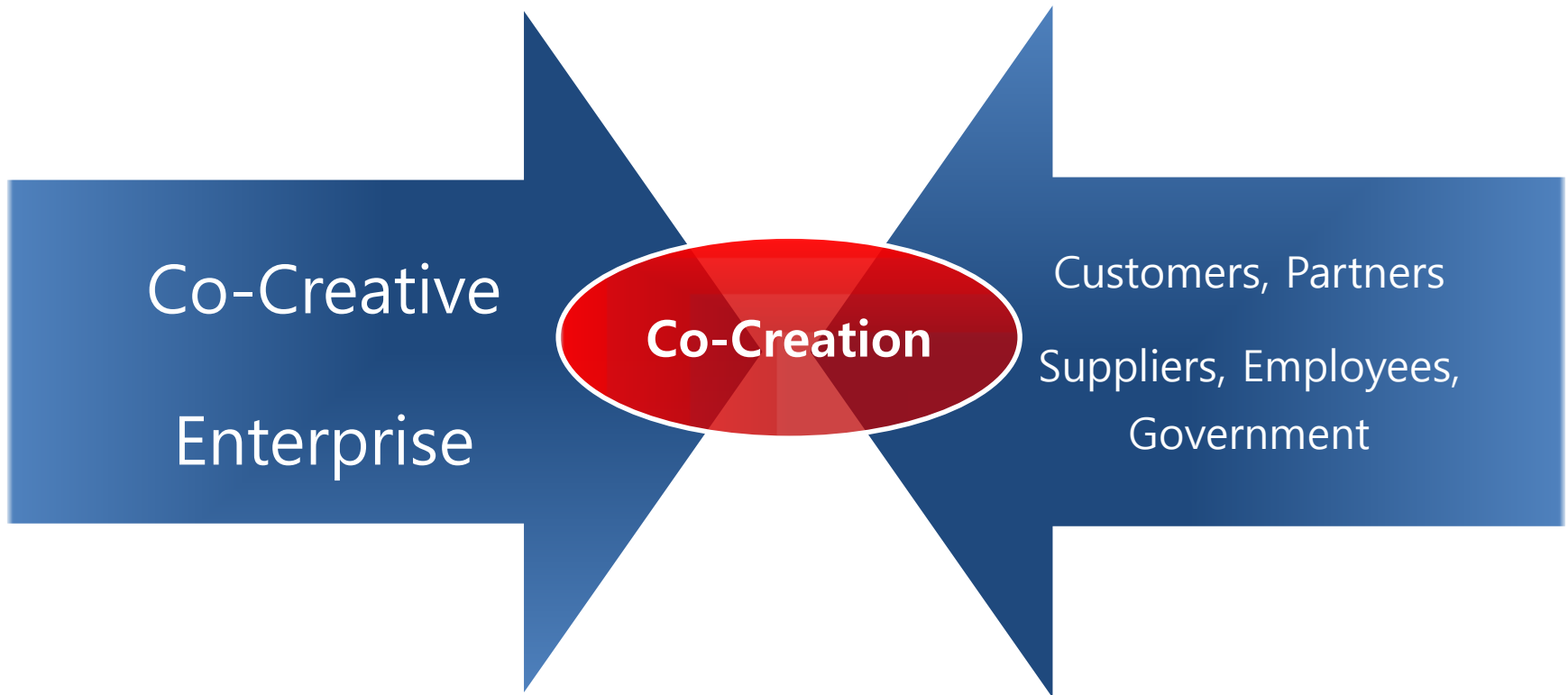
# Co Creation



# Traditional Value Creation



# Value Co-Creation





# Co-Creation Lab



online auto 2010

Opportunity &  
Insight Identification



**Netnography**  
*"Sustainable  
energies"*

Idea  
Generation



**Idea Contest**  
*"Tomorrow's urban  
mobility services"*

Idea  
Evaluation



**CI Lab**  
*"Telematics and  
driver assistance"*

Concept  
Refinement



**Lead User**  
*"BMW on the  
internet"*

Customers

Brand  
evangelists

Lead  
Users

Experts

Innovators

Early  
adopters

Suppliers

Pilot  
customers



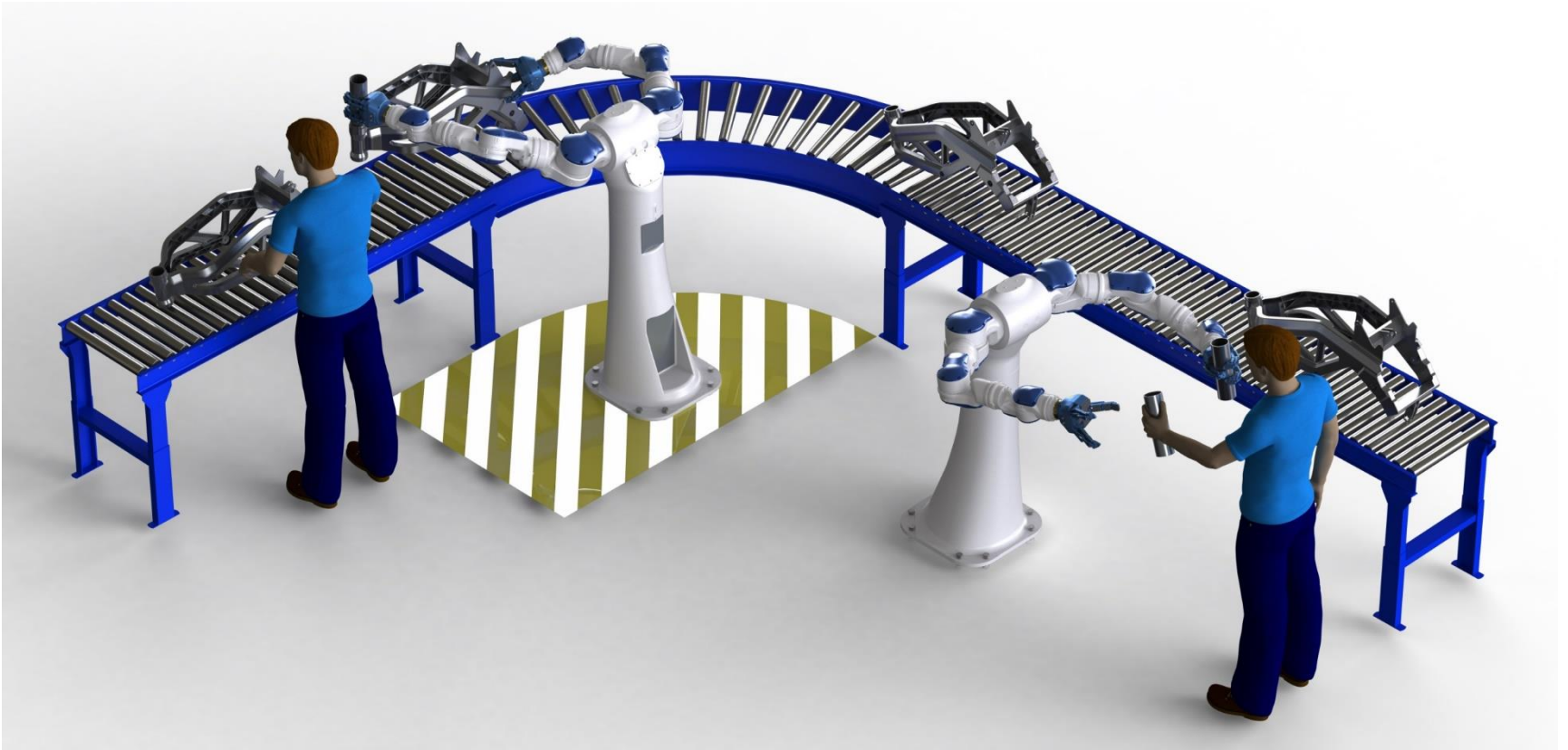


Presents:





# Collaboration with AI





The background is a dark, almost black, space filled with numerous bright, white, and light blue lines. These lines radiate from a central point, creating a starburst or explosion effect. The lines vary in length and thickness, some appearing as sharp, straight beams while others are more diffuse. The overall impression is one of dynamic energy and convergence towards a central focal point.

# Convergence



Copyrighted Material

"IF YOU CAN'T READ IT AND COME UP WITH AT LEAST A  
MINOR MONA LISA OR TWO, YOU'RE NOT TRYING."

—*Entrepreneur Magazine*

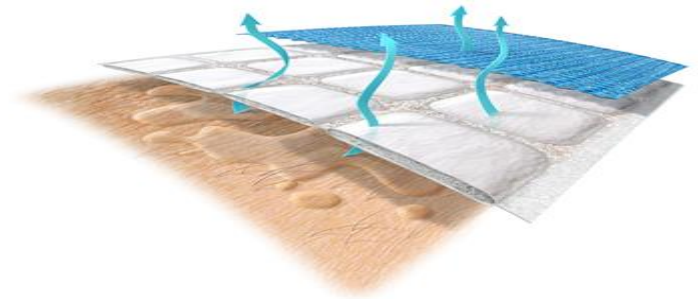


# THE MEDICI EFFECT

WHAT ELEPHANTS & EPIDEMICS  
CAN TEACH US ABOUT INNOVATION

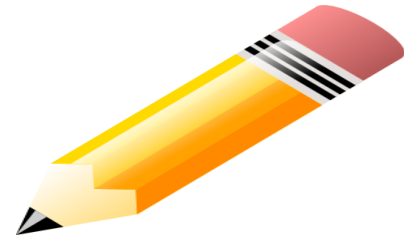
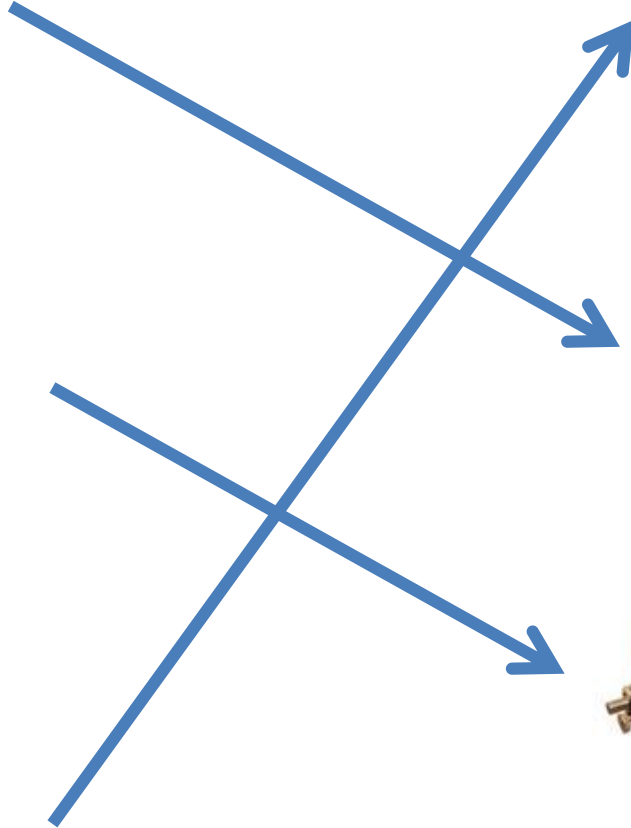
FRANS JOHANSSON

# Convergence Types: Application to Different Context

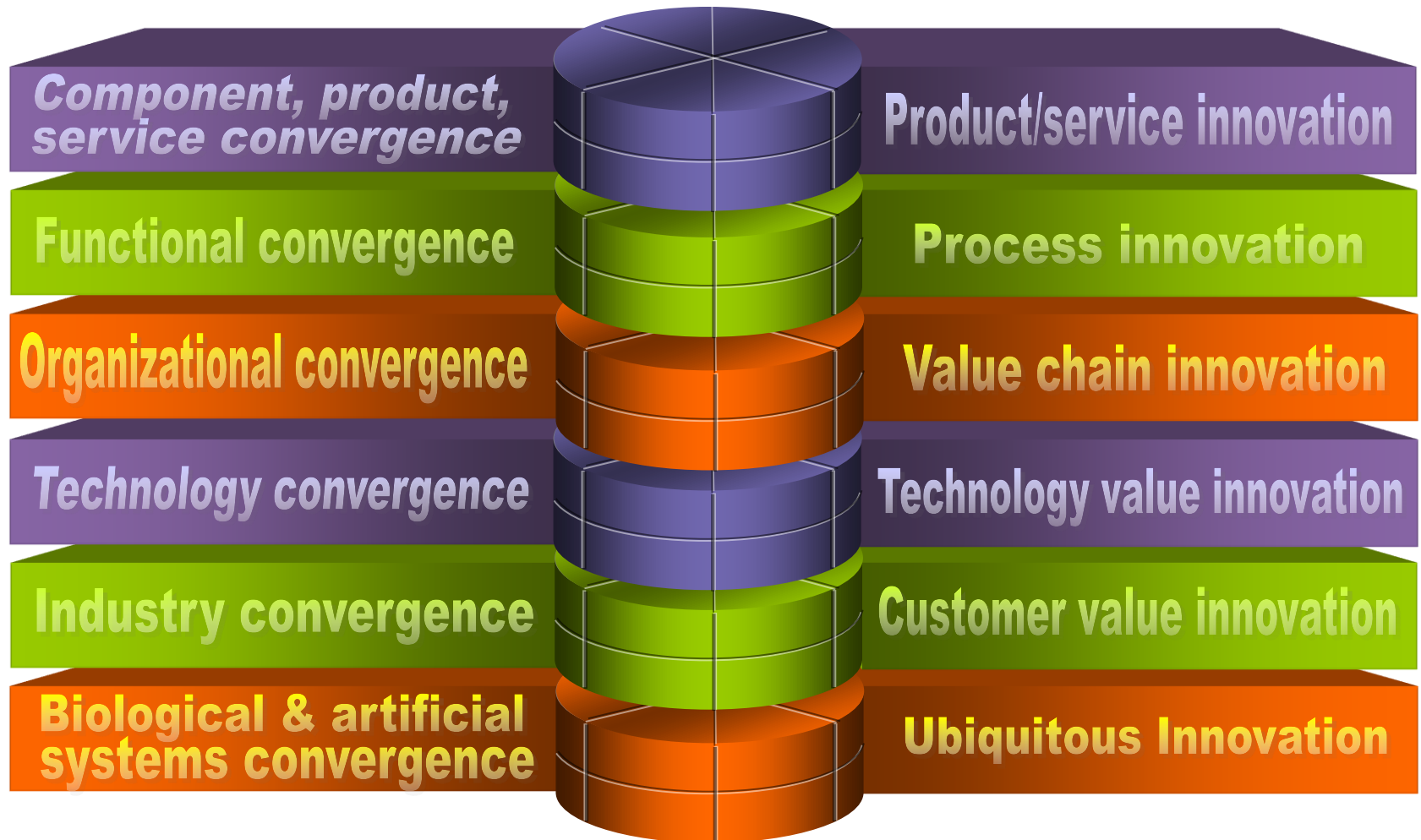


GORE® PROCEL® Cast Liner





# Types of Convergence



# Product and Component Convergence

## Product Innovation



# Functional Convergence

## Business Process Innovation





# Organizational Convergence

## Value Chain Innovation



# Technological Convergence

## Technology and Product Innovation



# BLOCKCHAIN TECHNOLOGY

Incentives  
Participants  
Upgrades  
Defence  
Consensus  
Cryptography  
Digital signatures  
Data storage  
Data distribution

## TECHNOLOGIES OF A BLOCKCHAIN



Asymmetric  
Encryption  
*Transaction signing*



Hash Functions  
*Transaction/block hashing as well  
as obfuscating public keys*



Merkle Trees  
*Efficient way to package  
transactions into blocks*



Key-Value Database  
*Lookups of previous transactions  
(prevent double-spends)*



P2P Communication  
Protocol  
*Sharing transactions and blocks*



Proof of Work  
*Method to achieve consensus*



# Industry Convergence

## Market and Customer Experience Innovation





# Bio-Artificial Convergence

## Ubiquitous Innovation



# FUSION or Confusion ?







Duchess of Cambridge



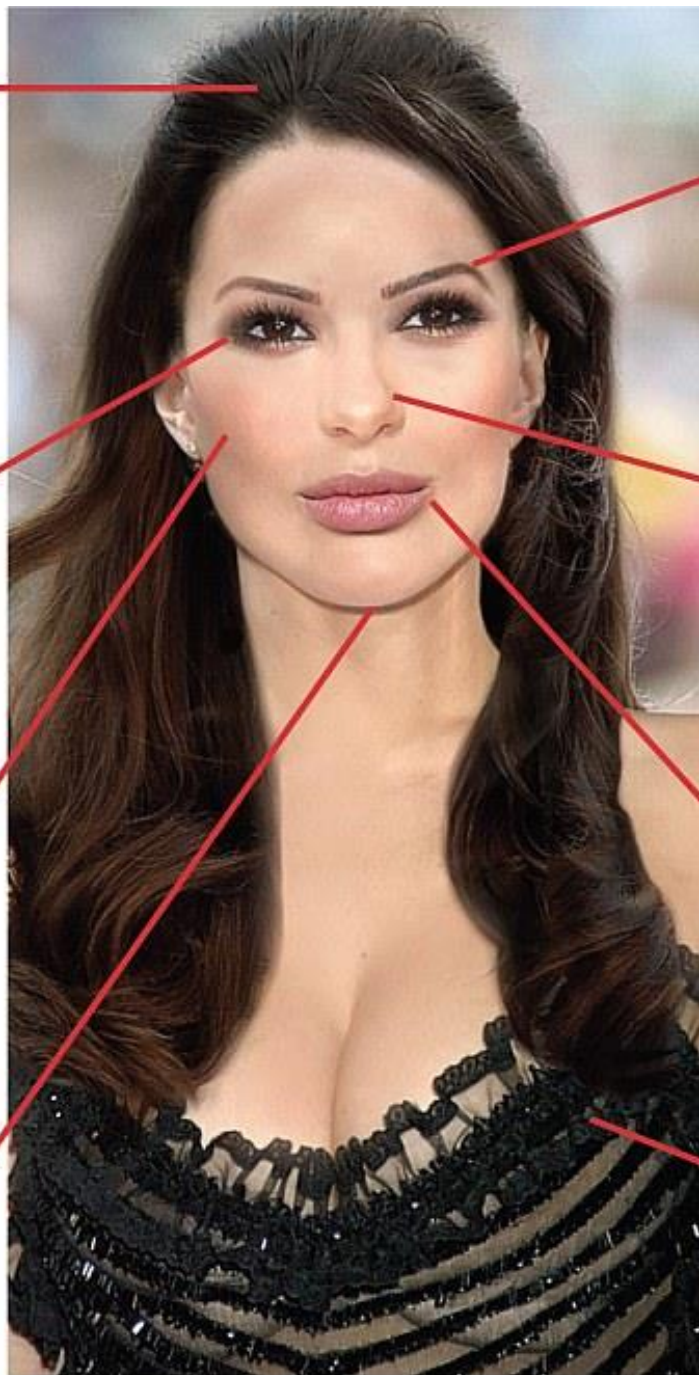
Cheryl Cole



Keira Knightley



Gwyneth Paltrow



Object of desire? Computer image of the 'ideal woman'



Megan Fox



Kate Beckinsale



Angelina Jolie



Kelly Brook

# Innovation 4.0 & One Asia





# Goal Divide



- Conflicts around the world – cultural, ideological, ethnic, gender
- Co-creation of shared vision, goals

# Shared Goal

---



# THE GLOBAL GOALS

For Sustainable Development





# School Bullying





# Aging Society



LI FENG / CH



**POLLUTION**

# Cyber Crime



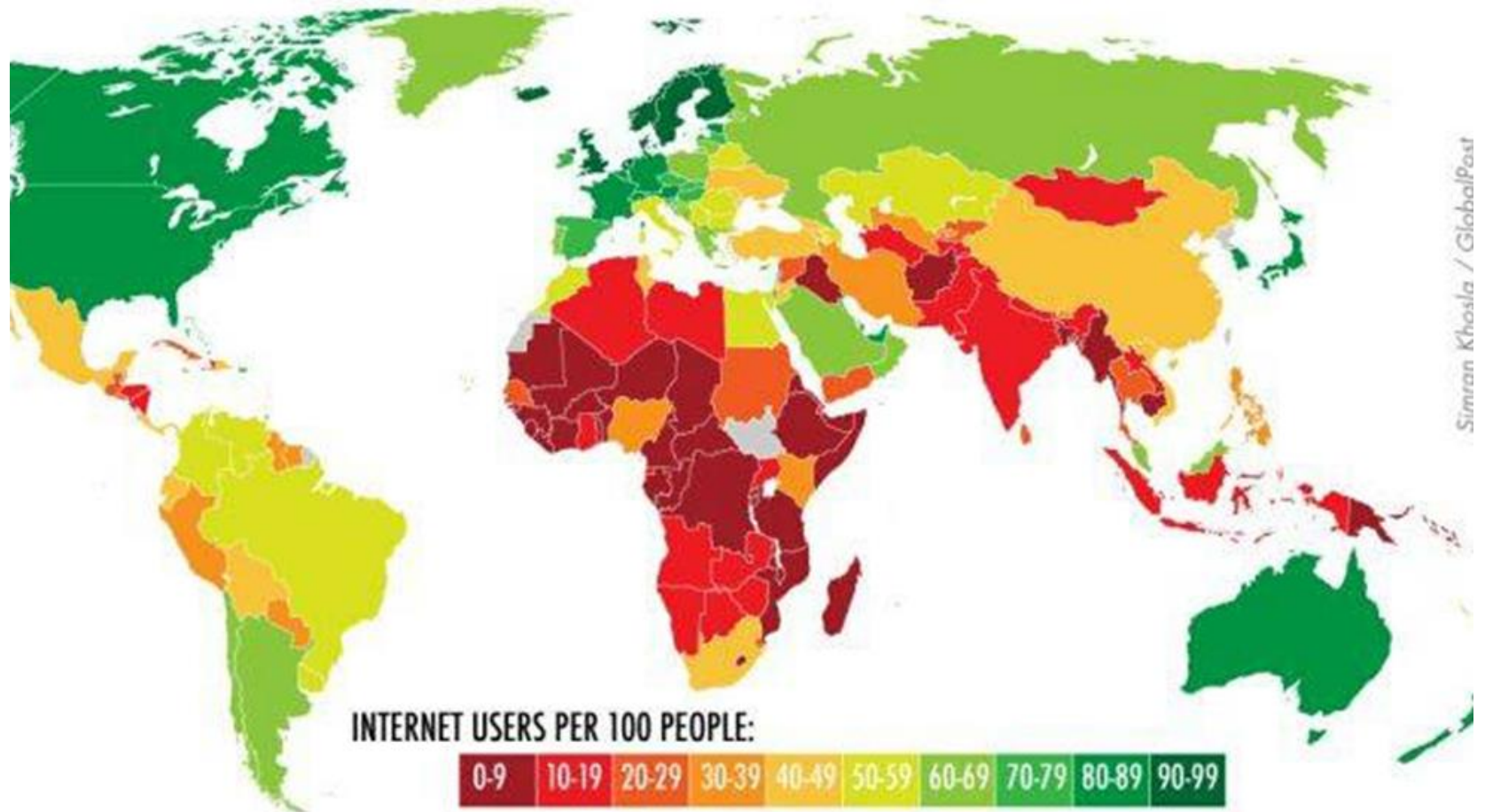


# Digital Divide

- 4 billion people with the Internet access; 3.3 billion do not
- Knowledge creation, sharing, communication



## Internet Users (per 100 people):



COUNTRIES WITH THE MOST PEOPLE ONLINE 1. Iceland (97) 2. Norway (95) 3. Sweden (95) 4. Denmark (95) 5. Netherlands (94) 6. Liechtenstein (94) 7. Luxembourg (94) 8. Finland (92) 9. Bahrain (90) 10. U.K. (90)

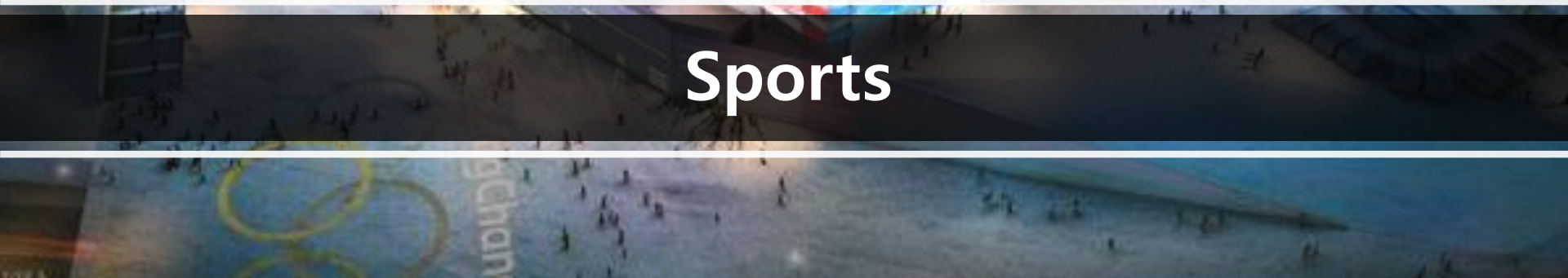
# Clean Energy







Sports



# Buy a Pair, Give a Pair

For every pair purchased,  
a pair is distributed to someone in need.

[LEARN MORE >](#)





JCDecaux

20 de Abril Día Internacional de la Lucha Contra el Maltrato Infantil

A veces el **maltrato infantil**  
solo es visible para el niño  
que lo sufre.

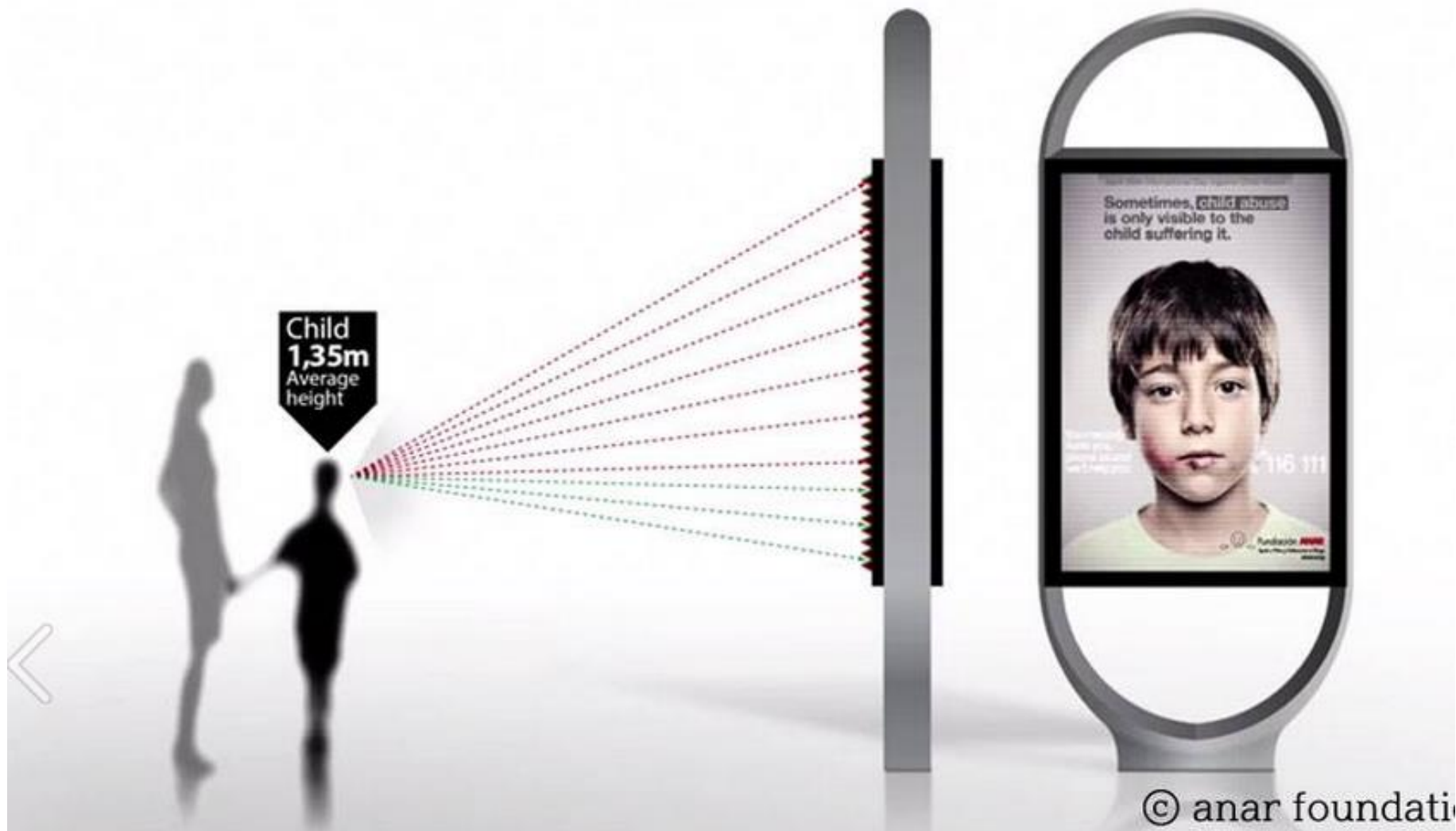
Si alguien  
te hace daño,  
llámanos y  
te ayudaremos

116 111



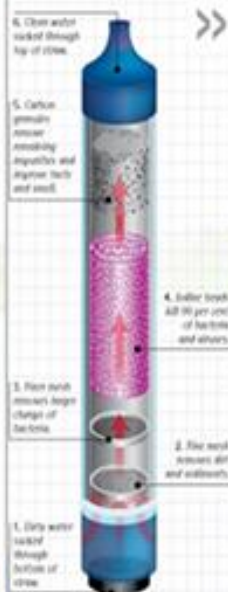
Fundación **ANAR**  
Resistencia y Solidaridad en Aragón

© anar fundatio





## ► HOW LIFESTRAW WORKS



Water in rivers and ponds is unsafe to drink because it contains a mixture of impurities. Lifestraw removes these in stages. At the bottom, a pair of textile filters remove soil and dirt and the larger clumps of bacteria. Filtering alone is not enough to make the water safe, because viruses and bacteria are small enough to pass through. So the next stage of the process uses a chemical called iodine to disinfect the water by killing the bacteria and viruses. At the top of the filter, there are millions of active carbon granules. Each of these acts like a tiny chemical laboratory, and the water is purified on its surface through a process called catalysis. The carbon also helps to remove any unpleasant iodine taste.



Carbon granules (here magnified around 4,000 times) from a filter trap the contaminants like a magnet as the water flows through.

▼ Water, the essence of life, covers more than 70 per cent of Earth's surface, but less than 1 per cent of that is usable freshwater. If all the world's water could fit in a bucket, the amount people could drink would barely fill a teaspoon.



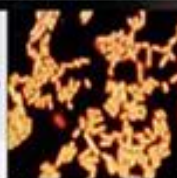
► Lifestraw: Two boys drink water through Lifestraw.

# LIFESTRAW

► Just imagine if the only place to drink from is a dirty river or having to walk an hour each day to collect water. More than 1.1 billion people (one-sixth of the world's population) still do not have access to clean water. The portable Lifestraw® drinking straw could help to improve their lives. ►

## ✂ Risk of disease

► Every day, more than 1,000 children in the developing countries die of diseases such as cholera and typhoid because they lack clean water. Typhoid is transmitted when the bacteria from human faeces contaminates water.



Micrograph of typhoid bacteria

► See also: Hydroponics p28, Cit. Converter p102, Rebreather p206







WHEN YOU'RE WEARY, FEELIN' SMALL, WHEN TEARS  
ARE IN YOUR EYES I WILL DRY THEM ALL

LIKE A BRIDGE

I'M ON YOUR SIDE; WHEN TIMES ARE  
OVER TROUBLED

TOUGH AND FRIENDS JUST CAN'T BE FOUND

WATER I WILL

LAY ME DOWN

***BLOOM  
WHERE  
YOU  
ARE  
PLANTED***





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