INTERNET CIVILIZATION

KAIZEN - DEPLOYING BLOCKCHAIN AT SCALE

FOR SCALING BITCOIN

OCT. 6, 2018

KEIO University

Jun Murai


慶應義塾
Keio University

Keio University

Founded in 1858

- MEIJI Era(Modern Japan) Started in 1868.

“Affairs in Western Countries By Yukichi Fukuzawa 1866

(from right to left, “Four Ocean Family”, “Five Races Brothers”, “Steam”, “Society”, “Electricity”, Communications”)

Keio University

Civilization

注　福澤先生のご著書にすべての項目が書かれているわけではありません。

- Science and Civilization
- Society and Civilization
- Culture and Civilization
- Technology and Civilization
- Geography and Civilizatoin
- Segment of Civilization
- Conflict of Civilization

History of the Internet

- 1969 ARPAnet and UNIX were born
- 1982 4.2BSD (source code TCP/IP deployed)
- 1990 WWW started
- 1993 ISP commercial service launched
- 1995 Windows ’95, 1.17 (Hanshin Awaji Erthquake)
- 1997 Internet ‘bubble’. The Internet for big economy move
- 2000 Y2K
- 2001 9.11
- 2005 Internet Neutrality+
- 2007 iPhone
- 2010 Bitcoin (Pizza)
- 2011 3.11
- 2012 Accessing right to the Internet is ‘Human Right’
- 2012 Cloud Computing, Opendata movement
- 2013 Bigdata, Industry 4.0
- 2014 Deep learning, new AI, ‘Singularity’ HTML5
- 2015 IoT, Cyber Security
- 2016 Data Utilization, Data Privacy
- 2017 Internet Neutrality-, ICO
- 2018 GDPR, Trust framework

History of the Internet

Technology

- 1969 ARPAnet and UNIX were born
- 1982 4.2BSD (source code TCP/IP deployed)
- 1990 WWW started

Buisiness

- 1993 ISP commercial service launched
- 1995 Windows ’95, 1.17 (Hanshin Awaji Erthquake)
- 1997 Internet ‘bubble’. The Internet for big economy move

Security

- 2000 Y2K
- 2001 9.11
- 2005 Internet Neutrality+

Users

- 2007 iPhone
- 2010 Bitcoin (Pizza)
- 2011 3.11
- 2012 Accessing right to the Internet is ‘Human Right’

Data

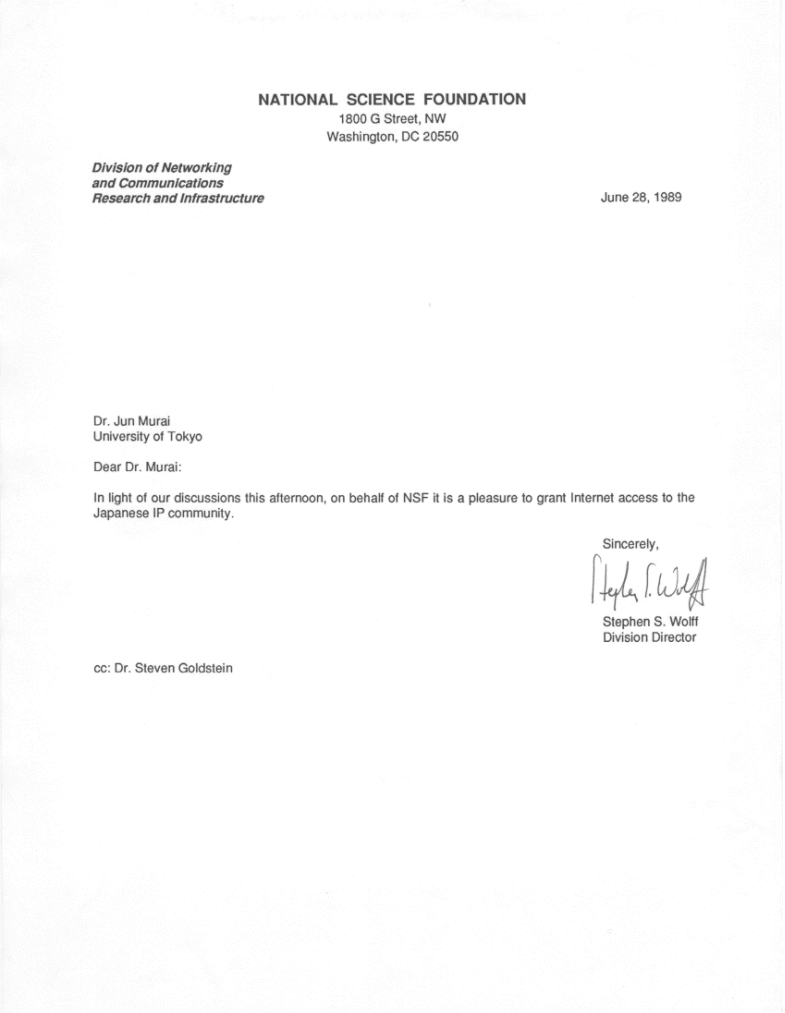
- 2012 Cloud Computing, Opendata movement
- 2013 Bigdata, Industry 4.0
- 2014 Deep learning, new AI, ‘Singularity’ HTML5
- 2015 IoT, Cyber Security
- 2016 Data Utilization, Data Privacy

Trust

- 2017 Internet Neutrality-, ICO
- 2018 GDPR, Trust framework

Stephen Wolff

Stephen Wolff is one of the many fathers of the Internet. He is mainly credited with turning the Internet from a government project into something that proved to have scholarly and commercial interest for the rest of the world. Dr. Wolff realized before most the potential in the Internet and began selling the idea that the Internet could have a profound effect on both the commercial and academic world.



NATIONAL SCIENCE FOUNDATION
1800 G Street, NW
Washington, DC 20550

Division of Networking
and Communications
Research and Infrastructure

June 28, 1989

Dr. Jun Murai
University of Tokyo

Dear Dr. Murai:

In light of our discussions this afternoon, on behalf of NSF it is a pleasure to grant Internet access to the Japanese IP community.

Sincerely,

Stephen S. Wolff
Division Director

cc: Dr. Steven Goldstein

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Division Director

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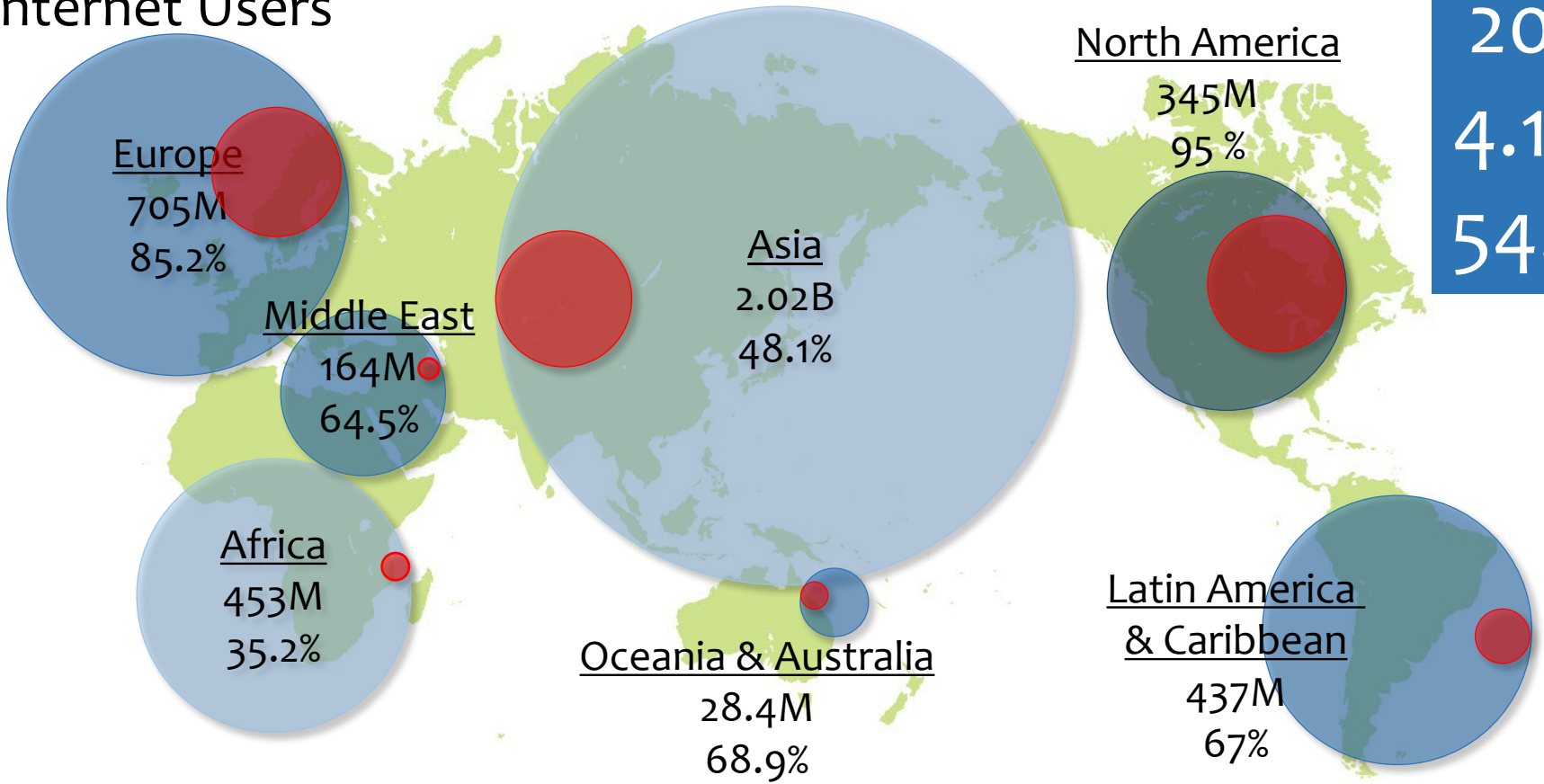
Internet Users

2000
361M
6%

Internet World Stat: http://www.internetworldstats.com

Internet Users



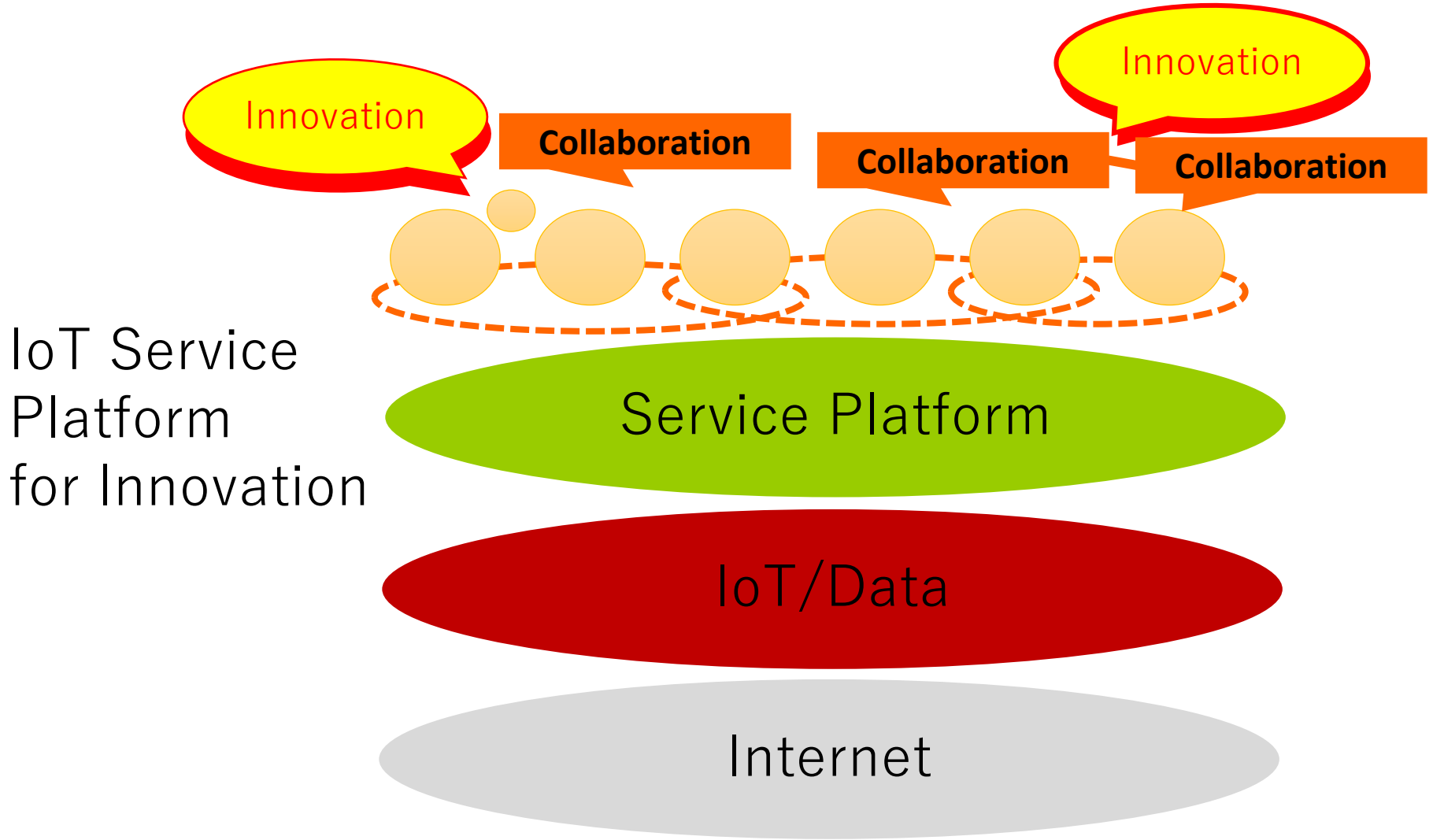
2018
4.16B
54.4%

Penetration (% population)

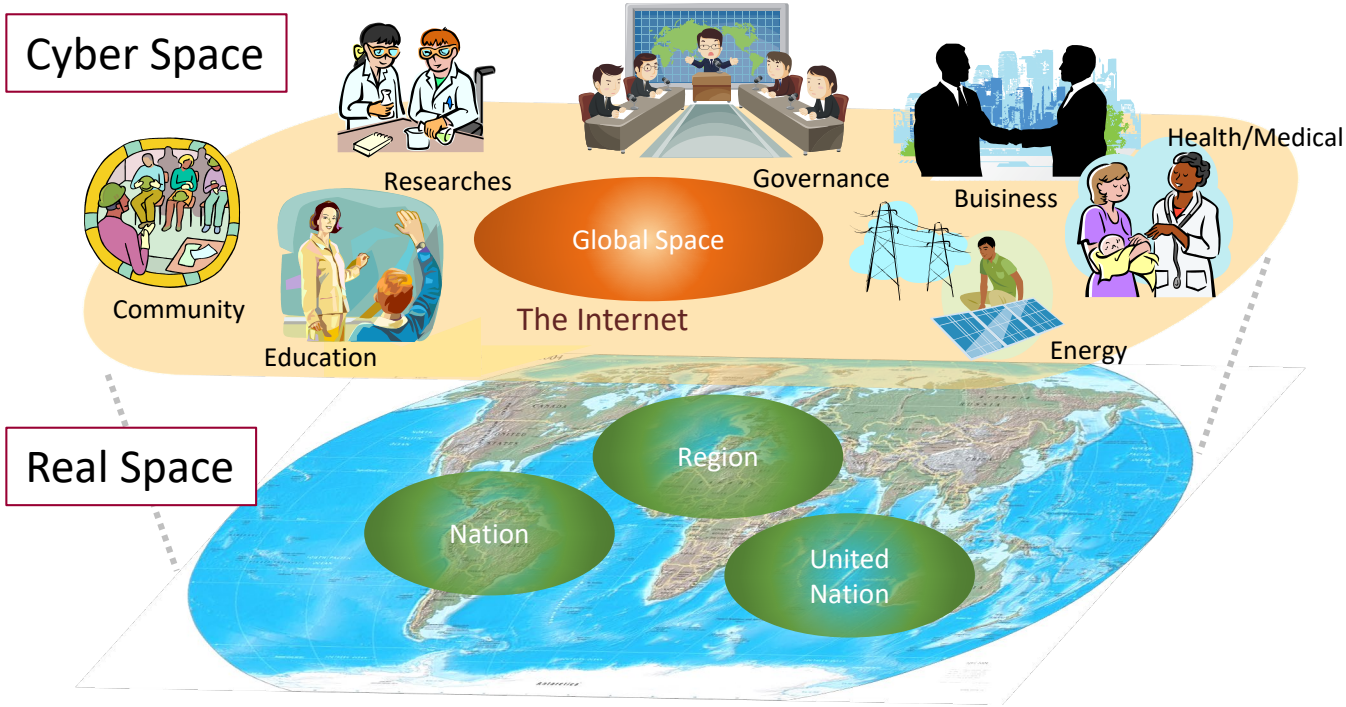
Internet World Stat: http://www.internetworldstats.com
Internet Users as of Dec 31, 2017

IP
EGP
IGP

DNS
IP address


Innovation
Innovation
Collaboration
Collaboration
Collaboration
IoT Service
Platform
for Innovation
Service Platform
IoT/Data
Internet

Cyber Space and Real Space



“The Internet”

in Single Planet

Multiple Culture

Multiple Language

Multiple Nations

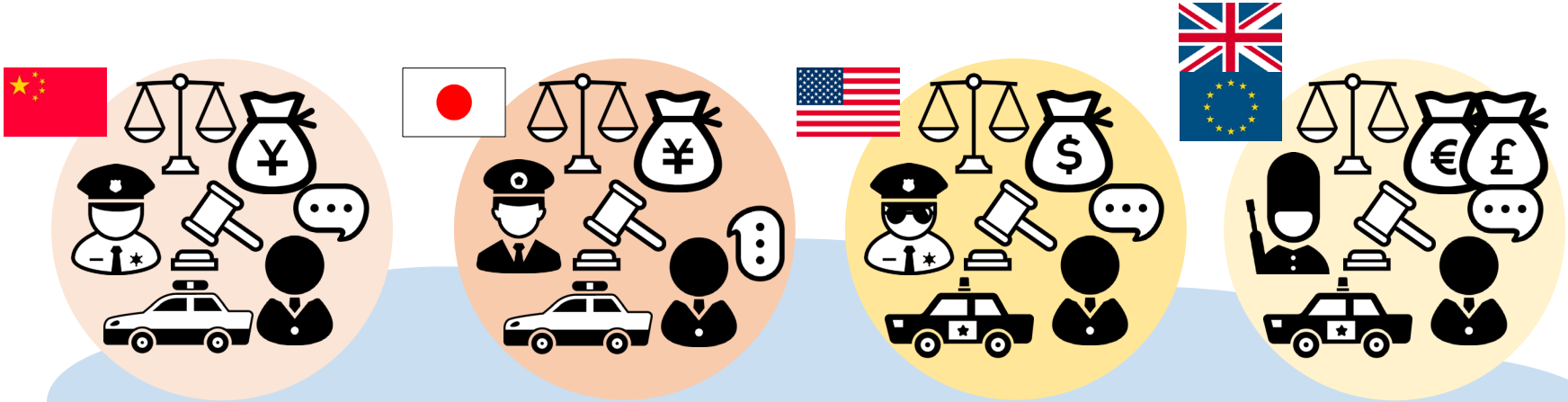
Multiple Laws

Multiple Court

Multiple Police

Nations on the Planet

Law, Legislation, Trial,
Culture, Language, Police
and
Government



インターネット＝ the Internet


(杉 並)
1505
TOKYO 2020
TOYOTA
START YOUR IMPOSSIBLE
TAXI
杉並 510
15-05

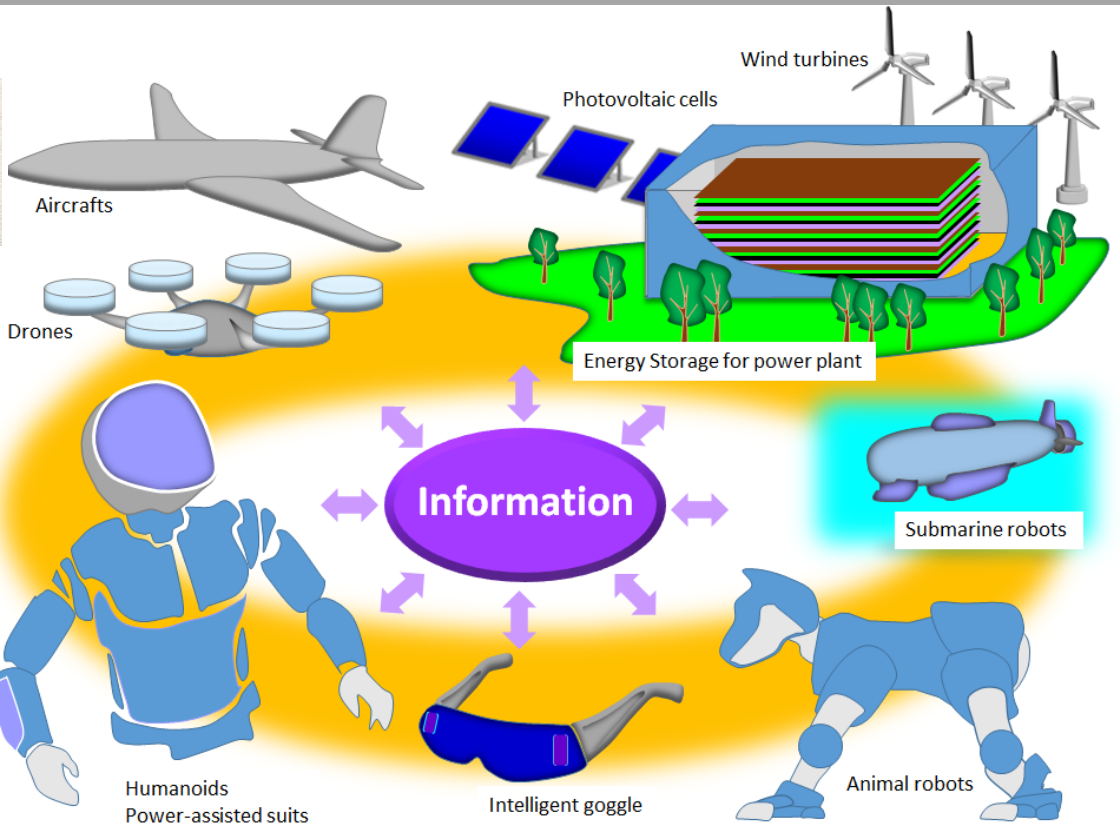
The Internet Battery Society

(R)Evolution by Battery

定置用セル（約 60cm x 100cm）
（手前は比較のためのスマートフォン）

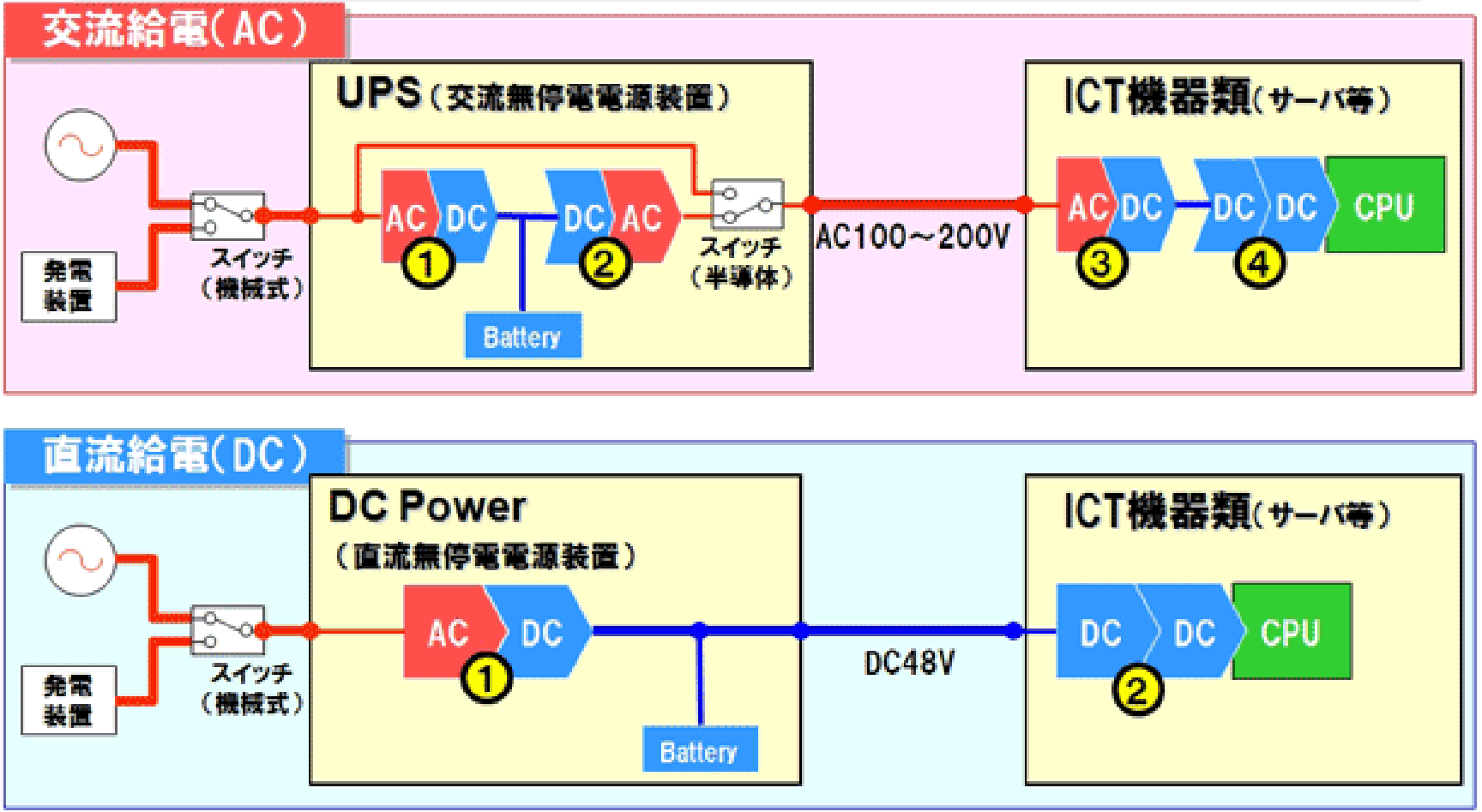
Huge Battery

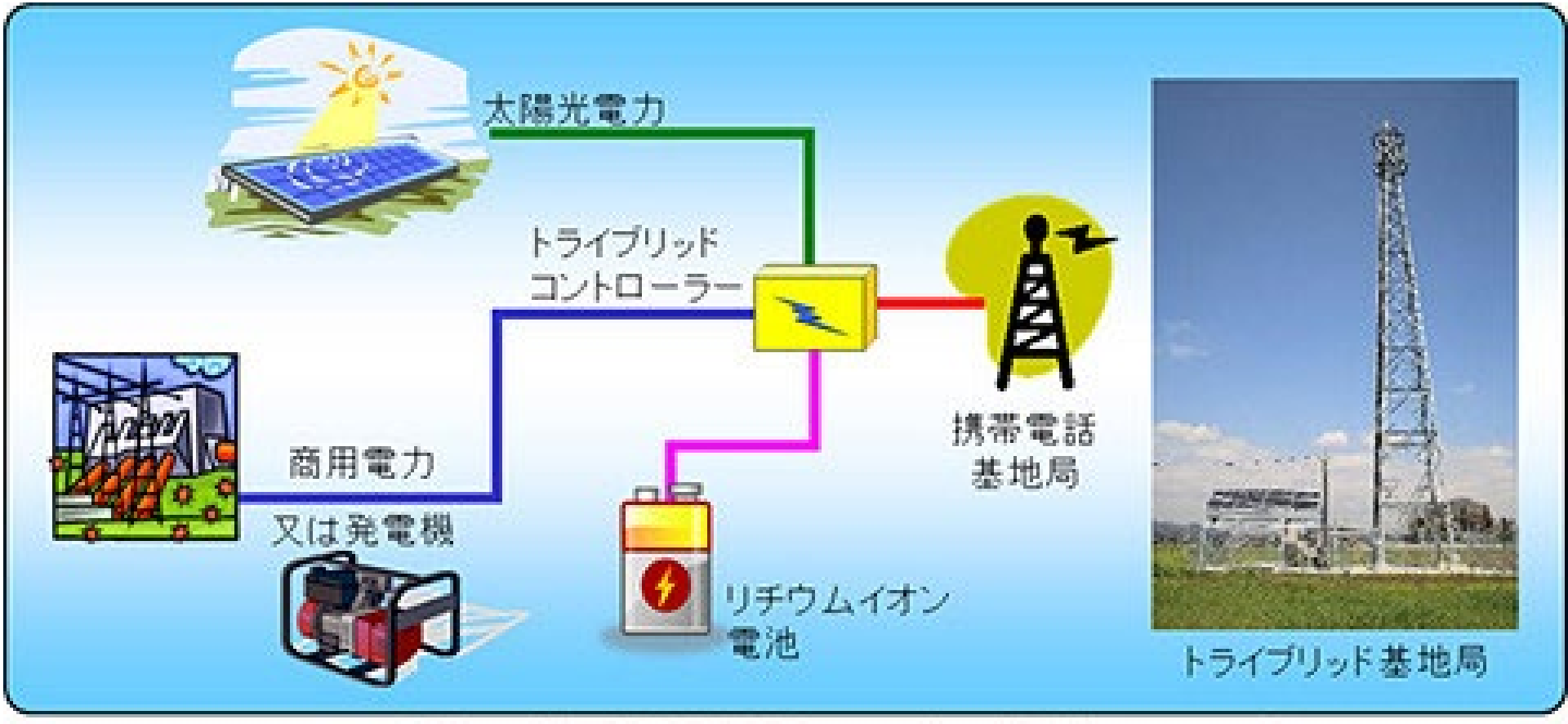
Small Battery

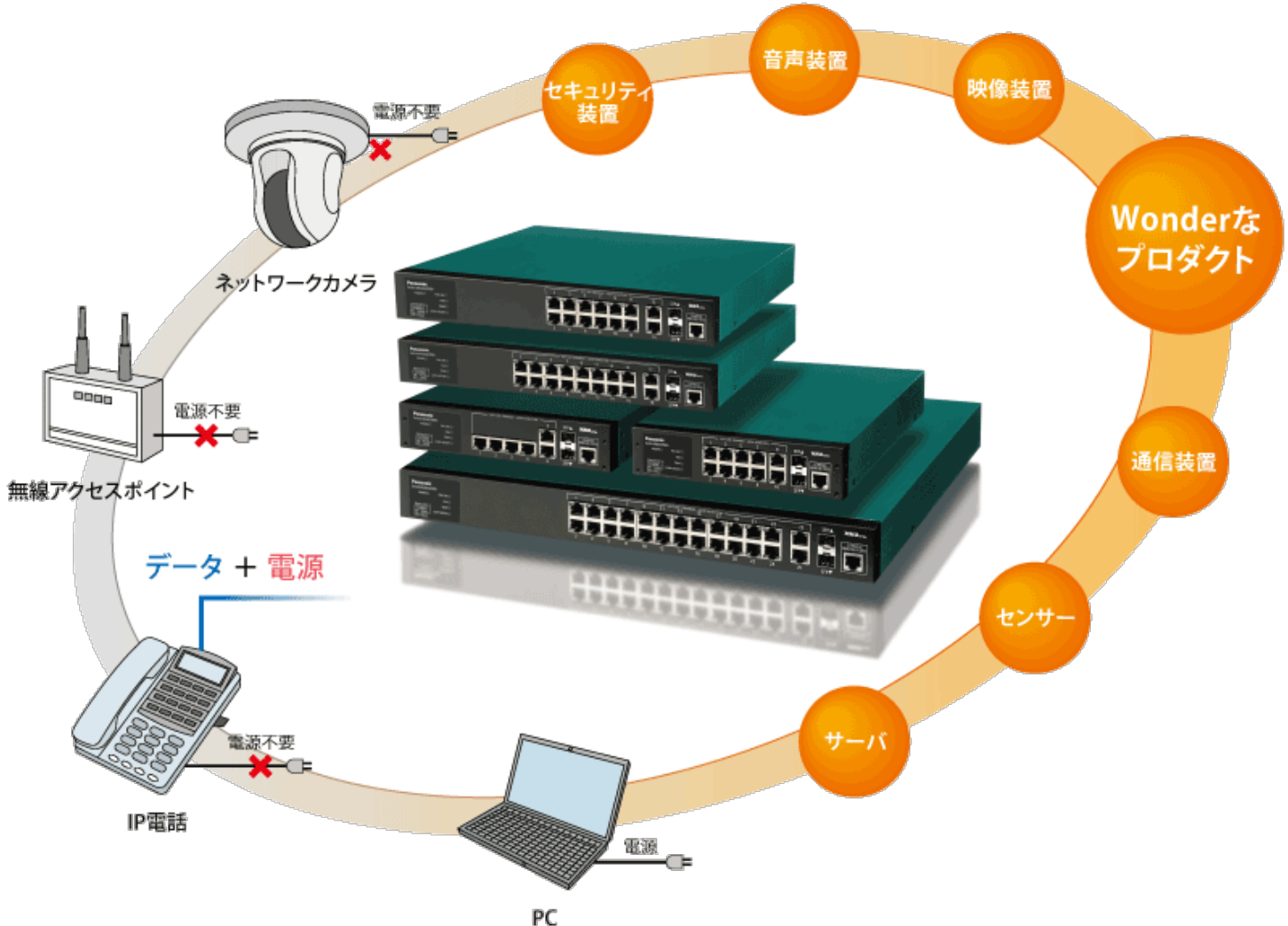


Future artifacts are empowered with high-performance batteries

直流給電は交流給電に比べ、変換段数が少ない

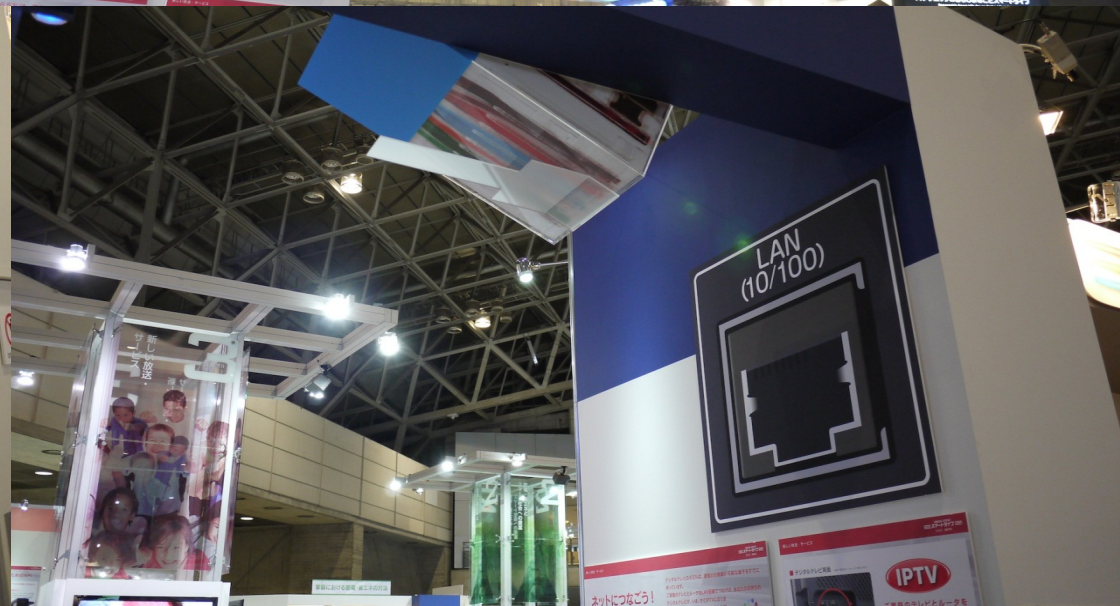





セキュリティ装置
音声装置
映像装置
Wonderなプロダクト
通信装置
センサー
サーバ
電源不要
ネットワークカメラ
電源不要
無線アクセスポイント
データ ＋ 電源
電源不要
IP電話
電源
PC


LAN
(10/100)
ネットにつなごう！
デジタルテレビ
使って便利!! 放送・通信連携コンテンツを体験しよう！
IPTV
JEITA
デジタルテレビ簡単
IPTV
ご家庭のテレビとルータを
LAN回線でつなげば、あなた
のお持ちのデジタルテレビが、
いますぐIPTVになります。
ここに
LANケーブル
を差す！


LAN
(10/100)


LAN
(10/100)
IPTV

小型情報機器用の全樹脂セル

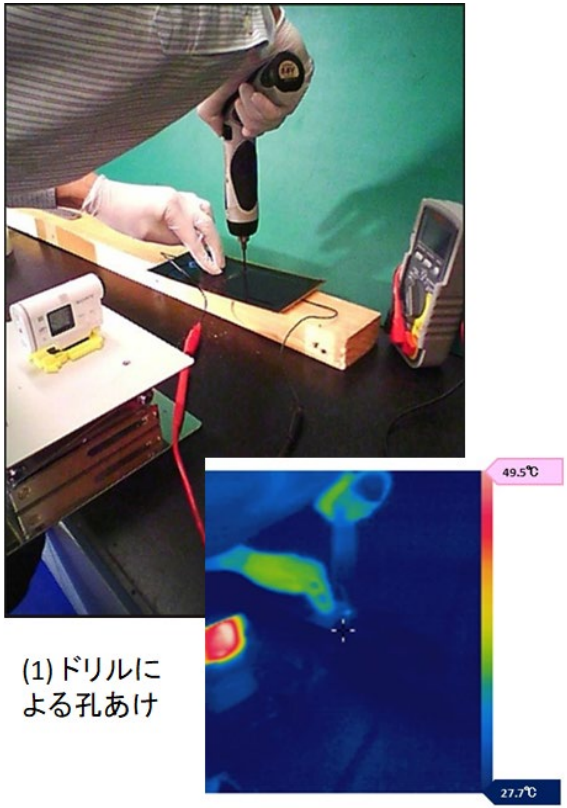
フレキシブル

Smartphone用試作セル

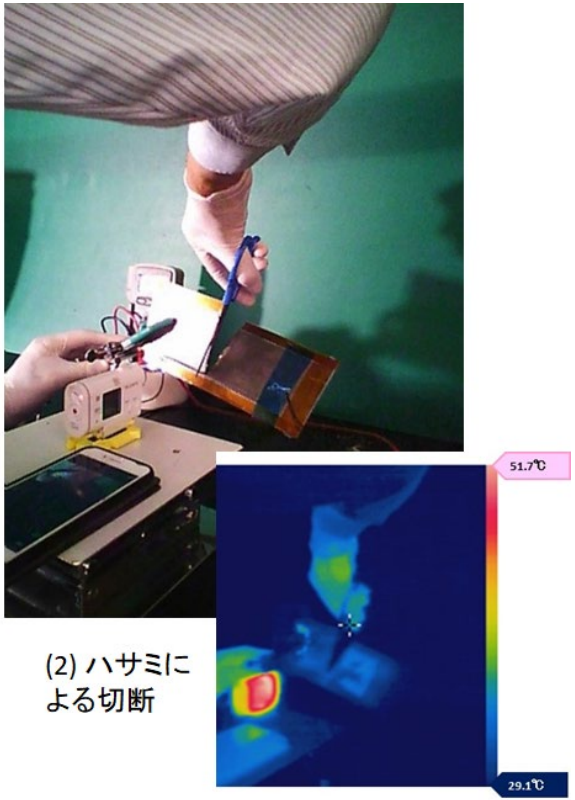
様々なサイズに対応可能

Safty of All Plastic(Resin) Battery

バイポーラ構造の全樹脂電池とすることで、電池として大電流での充放電が可能でありながら、電池内部で局所的な大電流が起こり得ず、爆発・発火を抑える



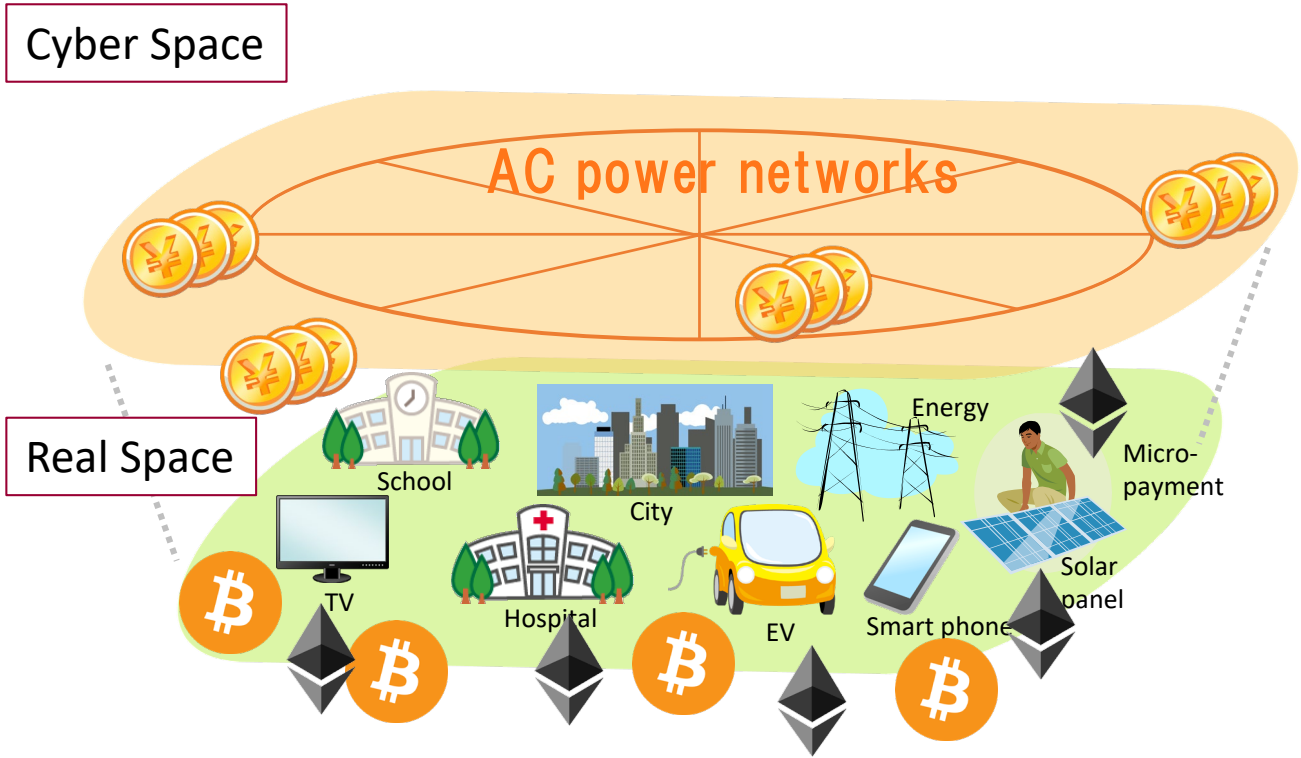
(1) ドリルによる孔あけ



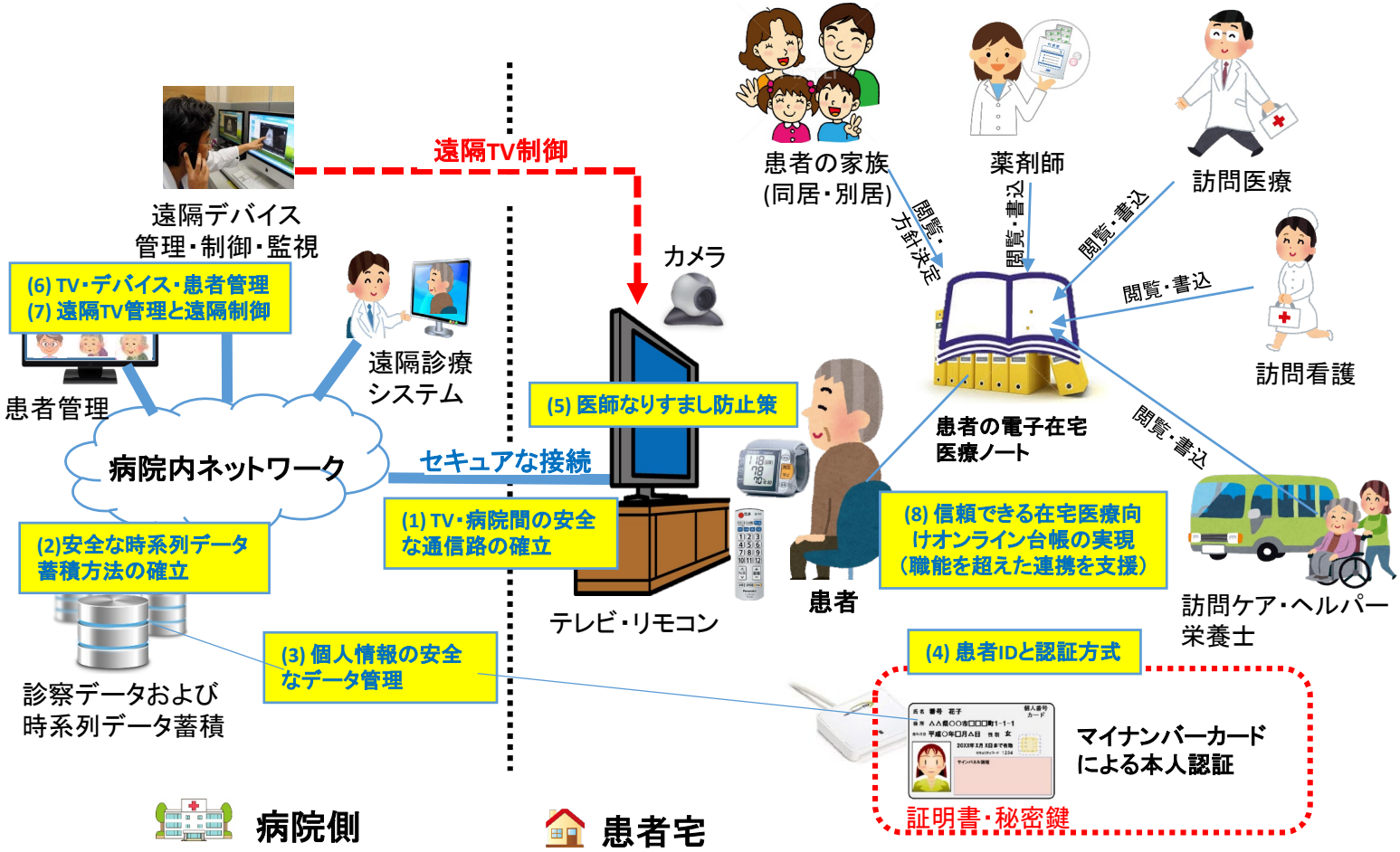
(2) ハサミによる切断

異常時（短絡・破損）の模擬実験（爆発・発火無し：温度上昇 1℃以下）

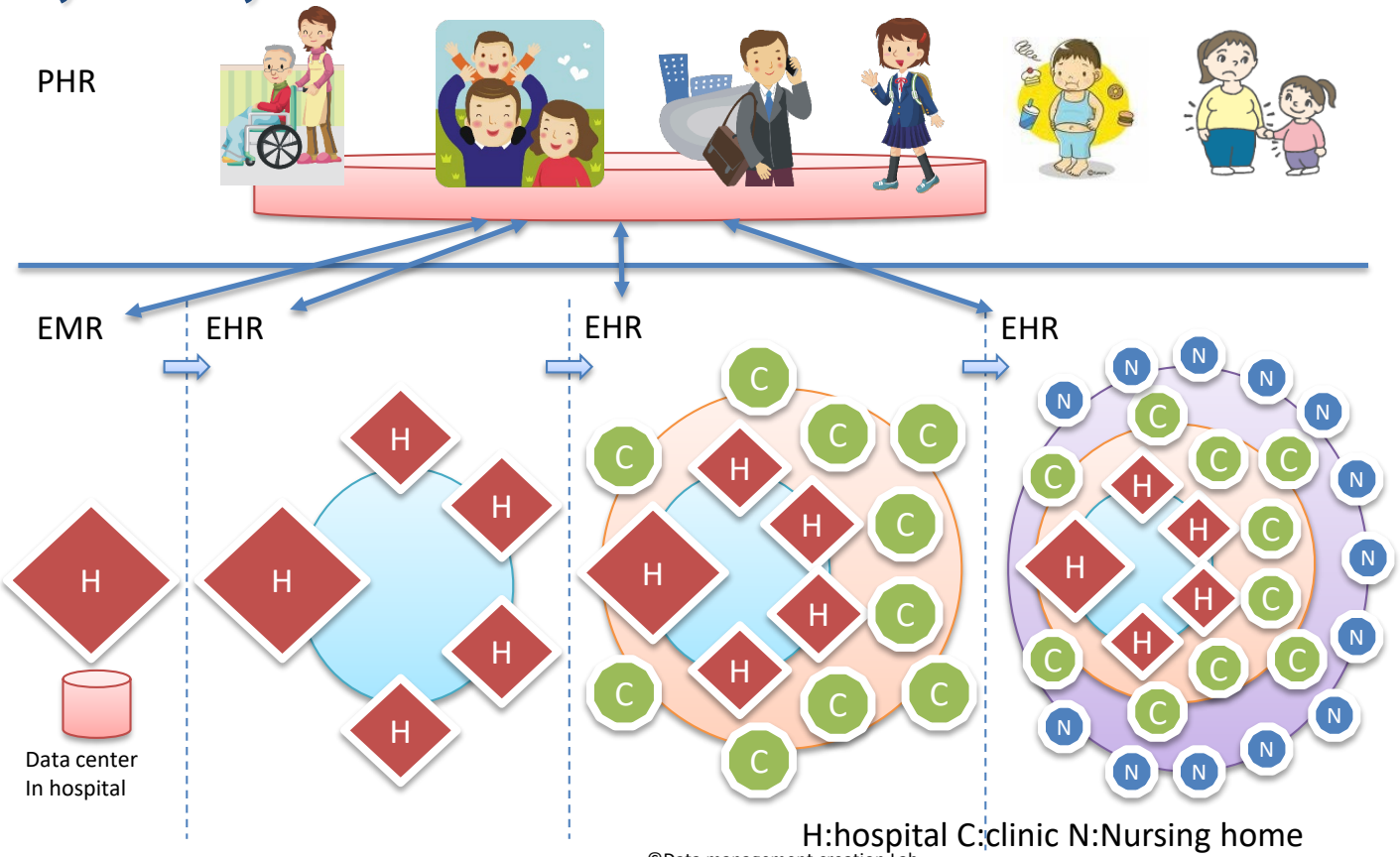
Internet Battery Society

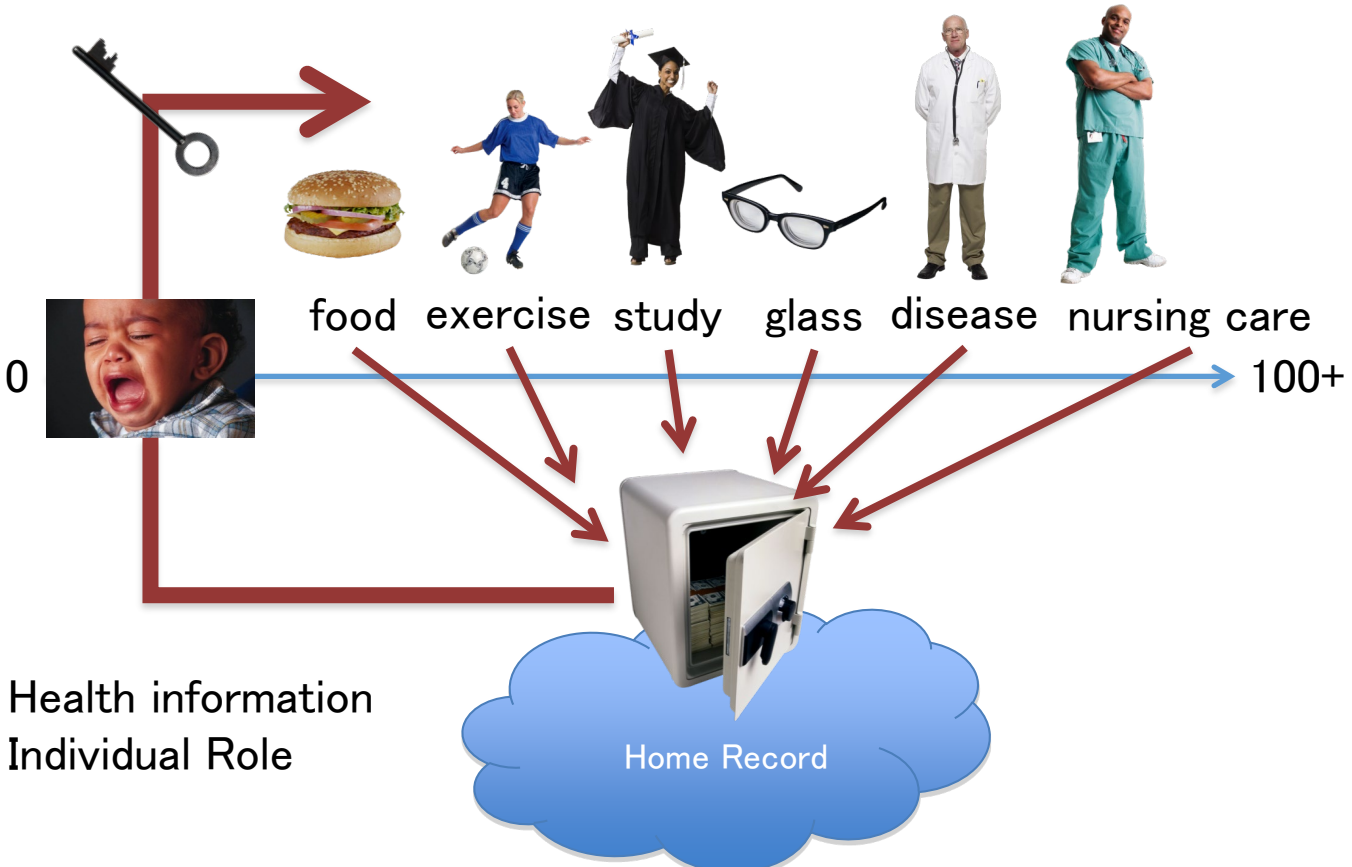


Hospital @ Home



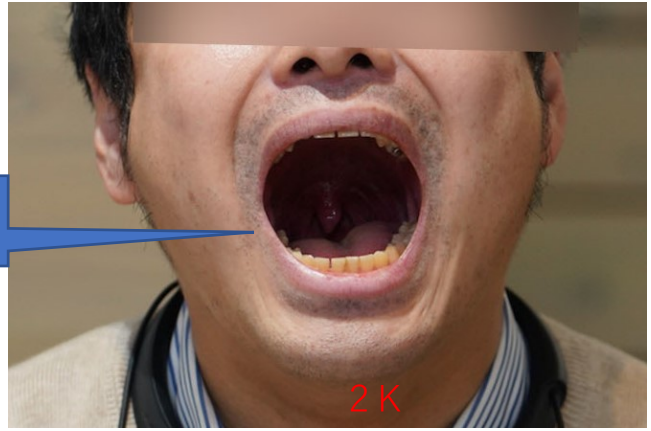
EMR,EHR,PHR

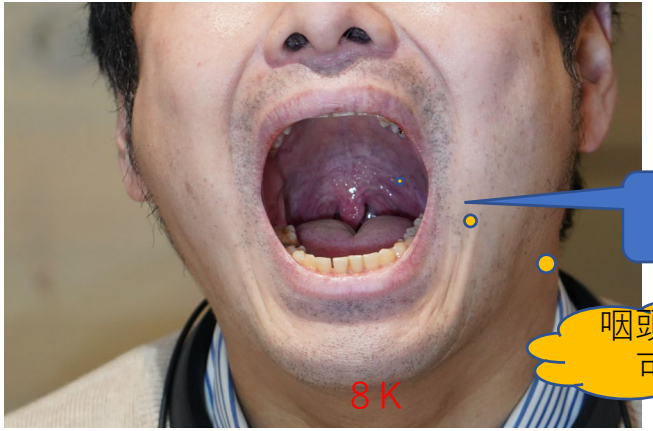




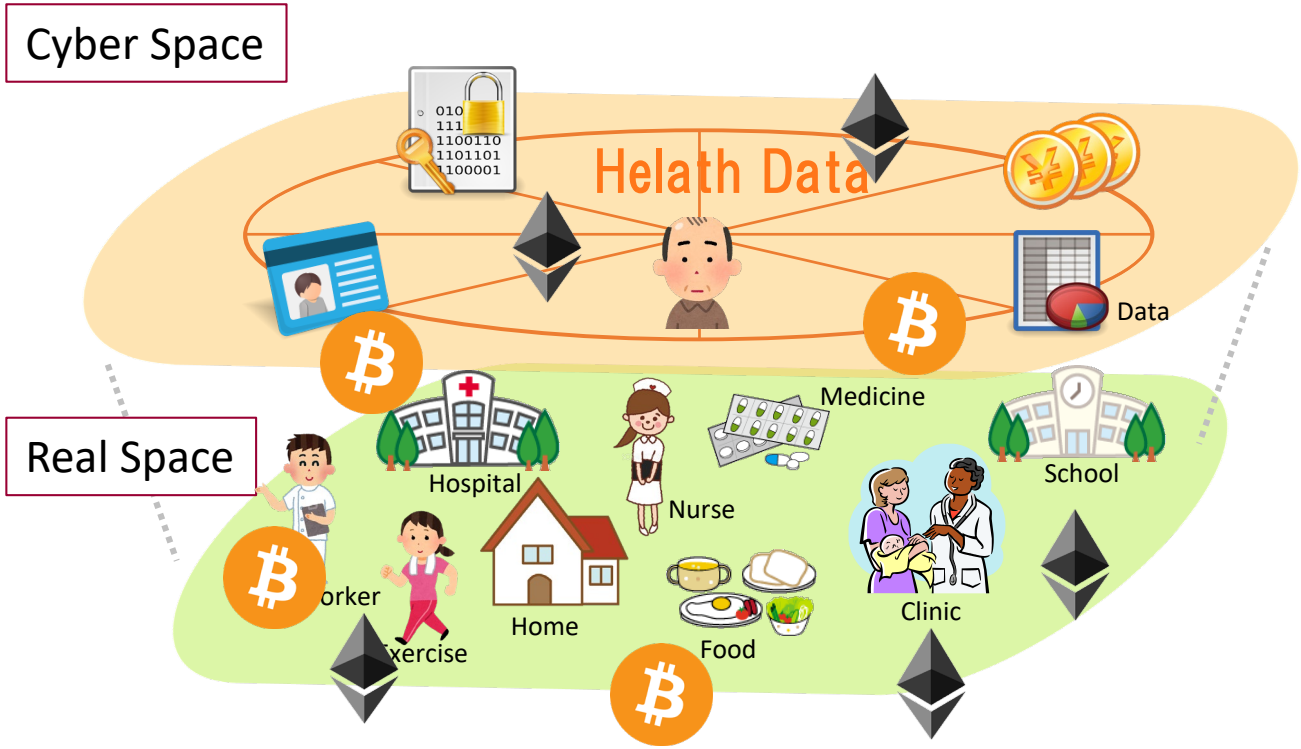
Health information
Individual Role

普通のPC画像２Kと4K,８Kカメラ画像比較





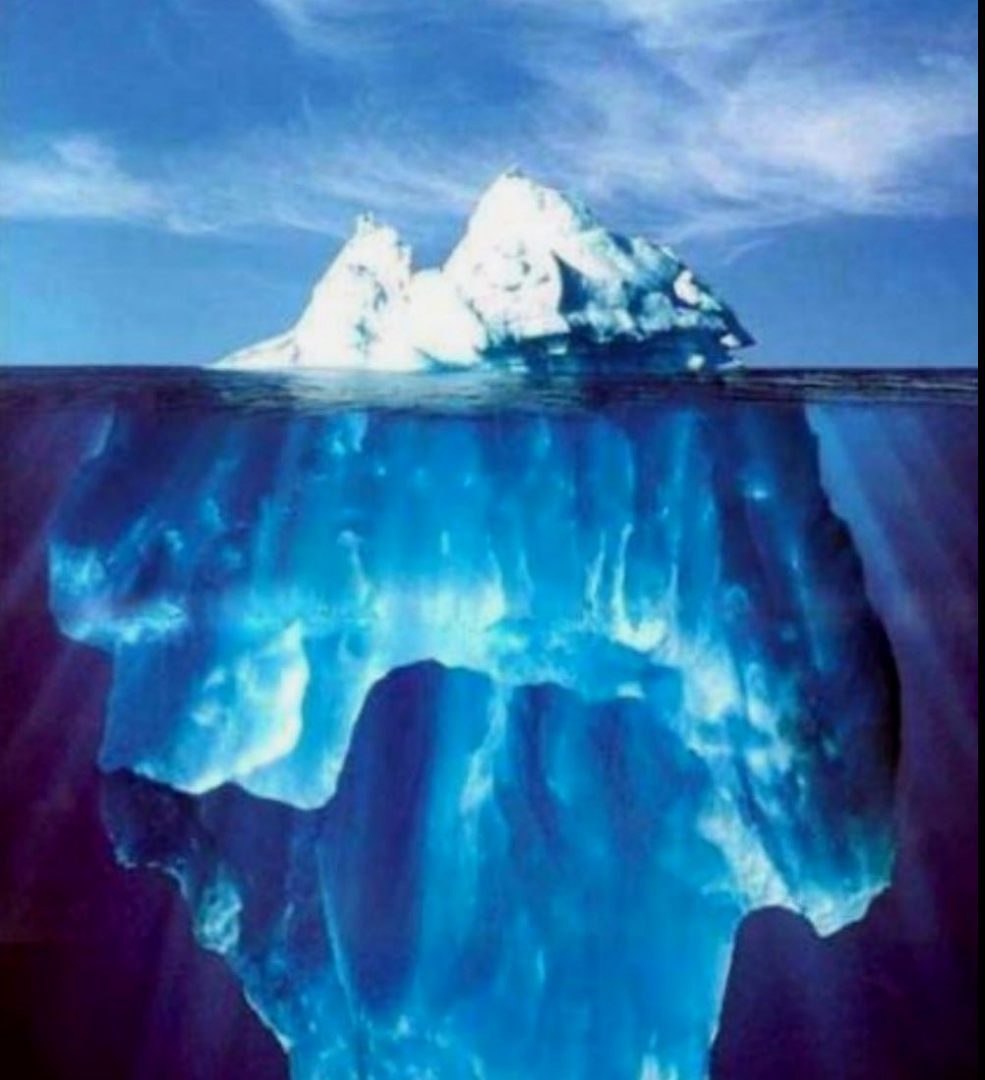
Internet Health Society



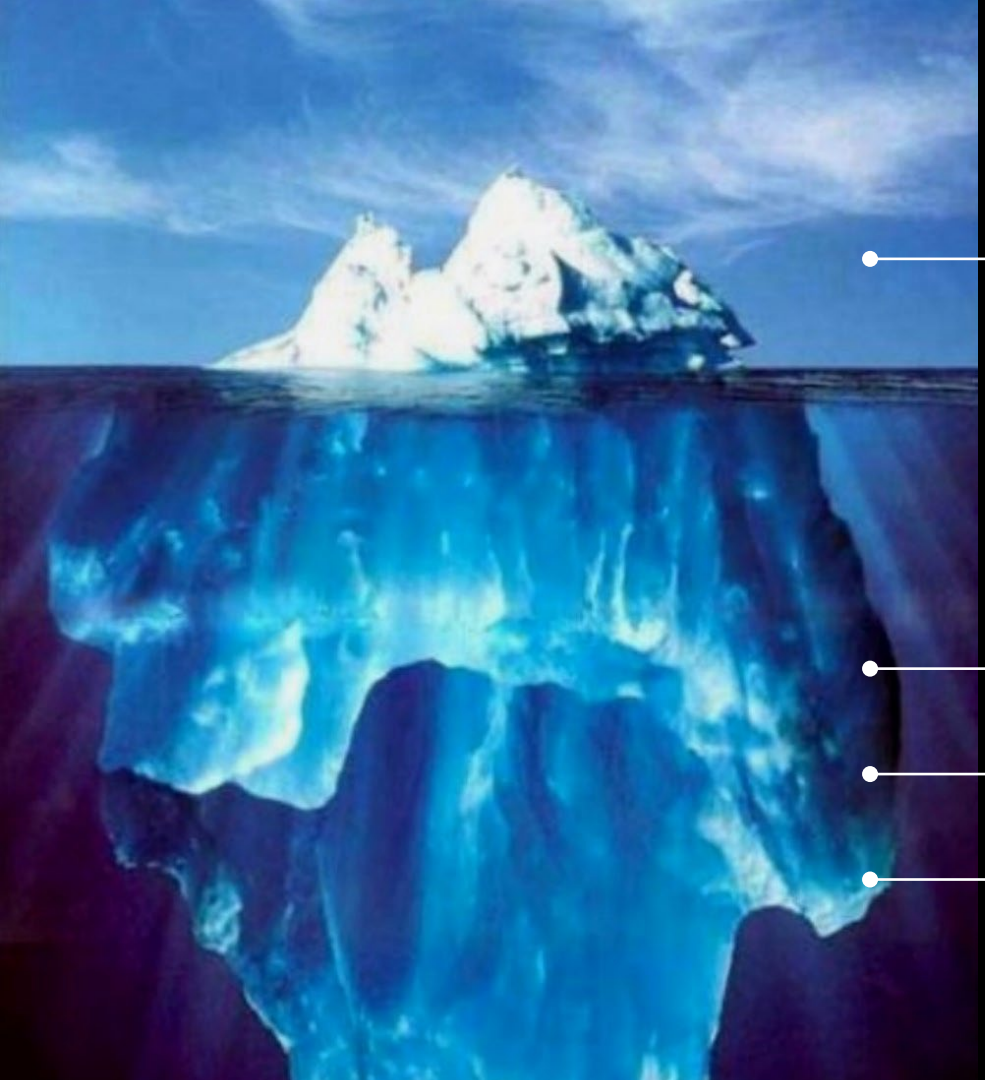
Glocal Scale System

Not,
Centralized,
Please!

Sophisticated Autonomous Distributed Sytems



The Internet

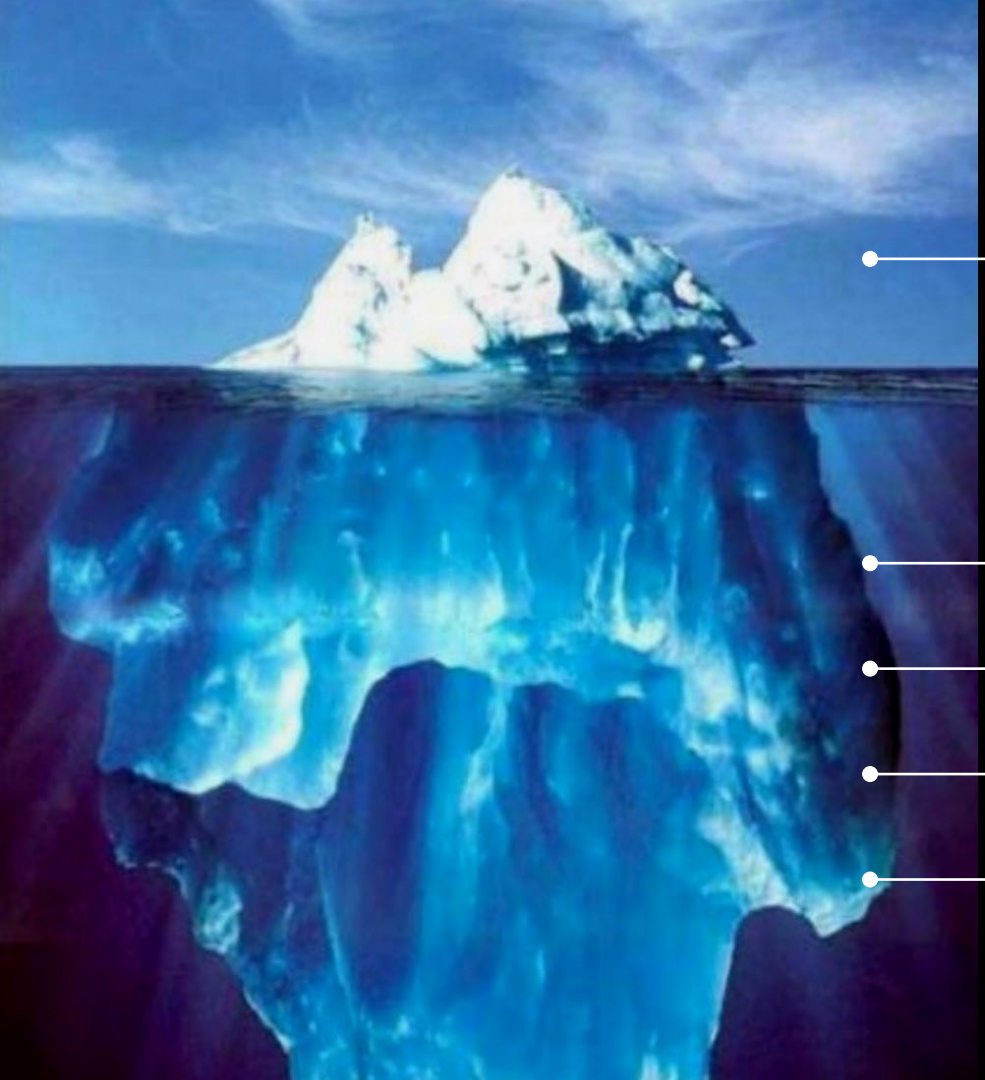


Applications

TCP/IP

Ether, WiFi, Bluetooth

Fiber, Mobile Wireless, Satellite



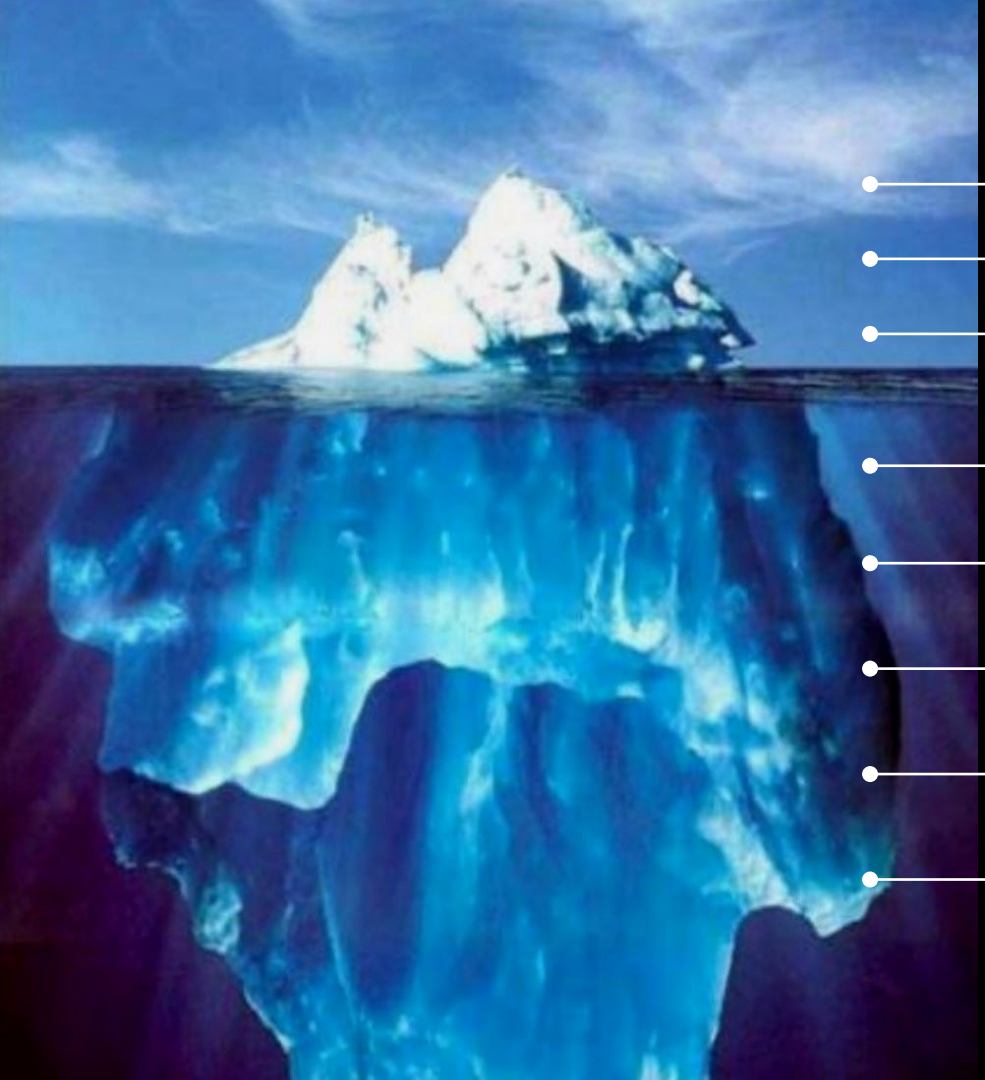
WWW

Browser

TCP/IP

Ether, WiFi, Bluetooth

Fiber, Mobile Wireless, Satellite



Service

IoT, Bigdata

AI

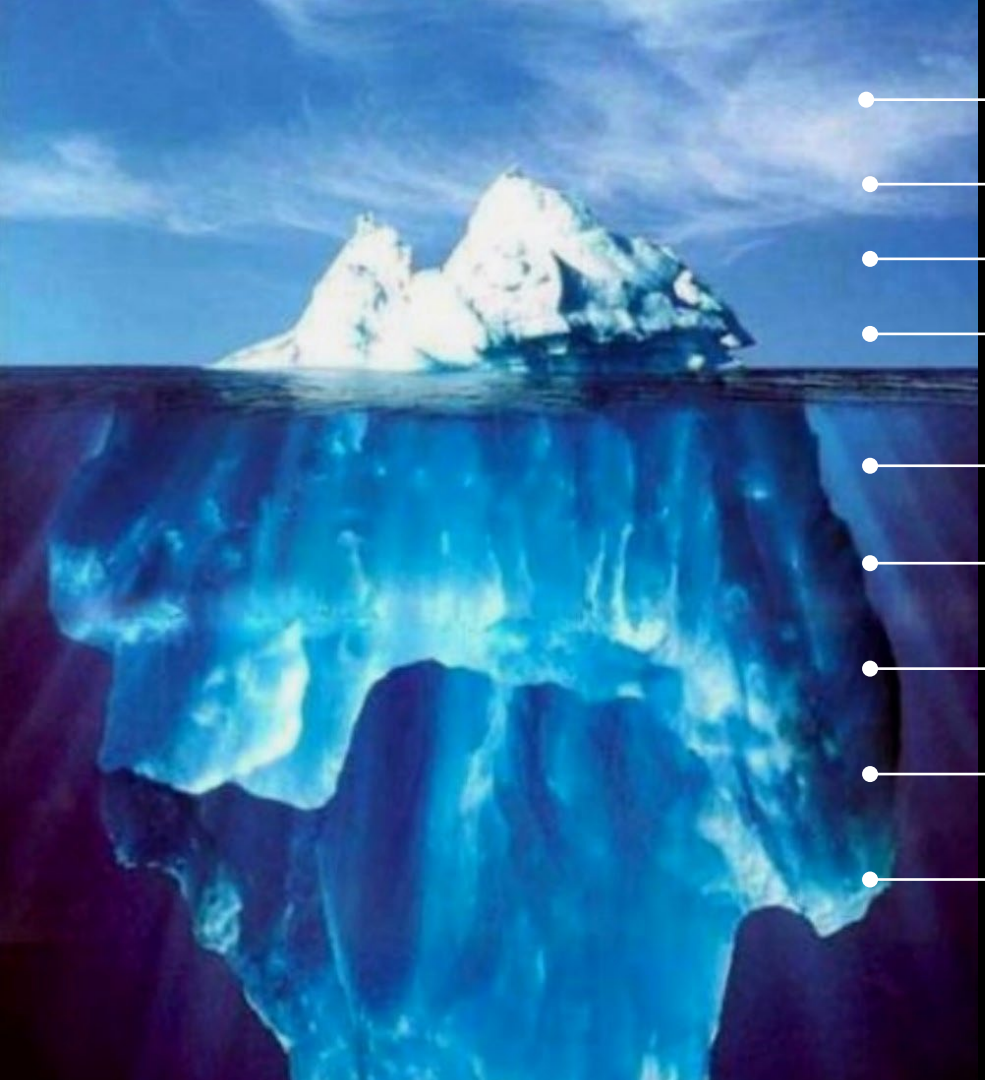
API (Application Interface)

WEB

TCP/IP

Ether, WiFi, Bluetooth

Fiber, Mobile Wireless, Satellite



Bitcoin/Blockchain

Service

IoT, Bigdata

AI

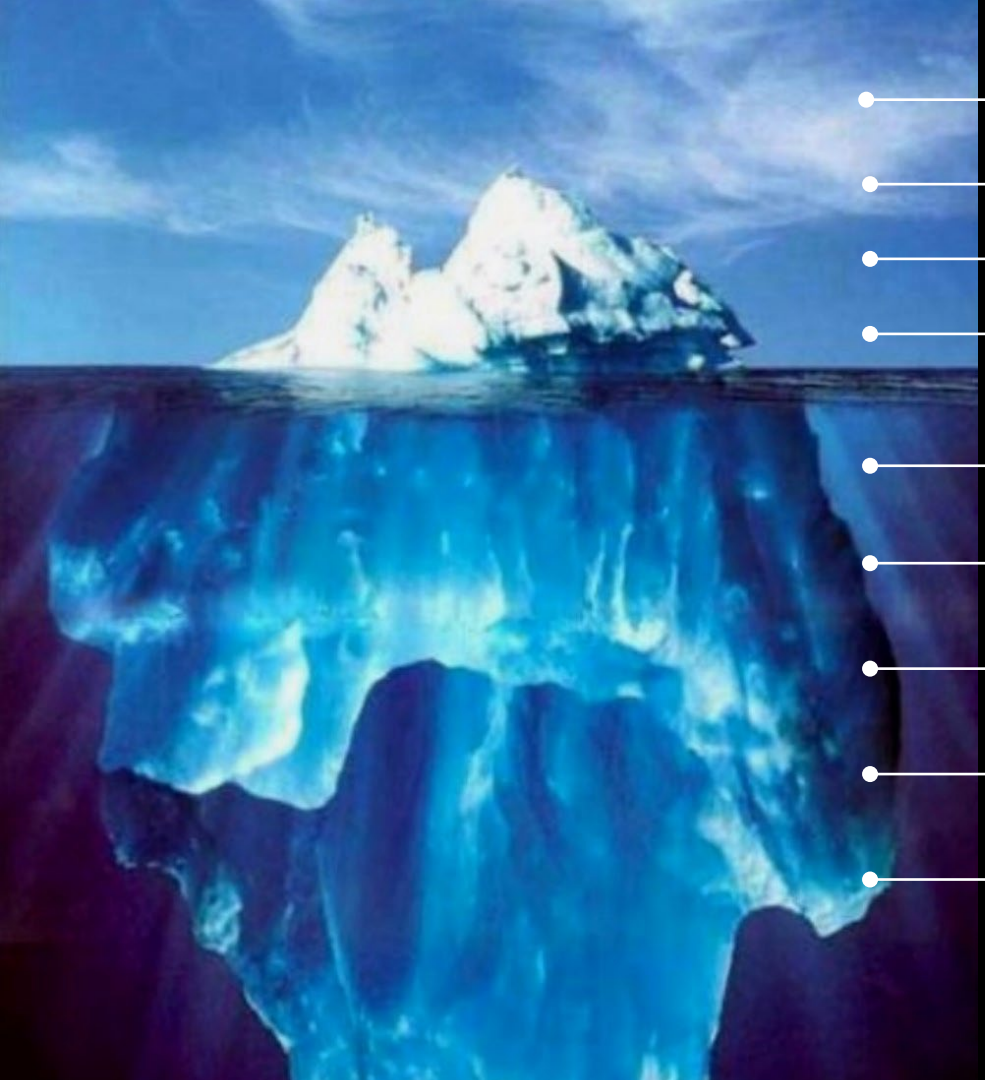
API (Application Interface)

WEB

TCP/IP

Ether, WiFi, Bluetooth

Fiber, Mobile Wireless, Satellite



Smart Economy

Service

IoT, Bigdata

AI

API (Application Interface)

Bitcoin/Blockchain

TCP/IP

Ether, WiFi, Bluetooth

Fiber, Mobile Wireless, Satellite