



ISSUES IN

INTERNET CIVILIZATION

FOR RANCO-JAPANESE CYBER SECURITY WORKSHOP
OCT. 30, 2018

KEIO University
Jun Murai



Founded in 1858

- MEIJI Era(Modern Japan) Started in 1868.



Internet Civilization

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 Civilization
- Segment of Civilization
- Conflict of Civilization



"Affairs in Western Countries By Yukichi Fukuzawa 1866

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



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 Earthquake)
- 1997 Internet 'bubble'. The Internet for big economy move

- 2000 Y2K
- 2001 9.11
- 2005 Internet Neutrality+

- 2007 iPhone, SCRATCH
- 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

Business

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

Security

- 2000 Y2K
- 2001 9.11
- 2005 Internet Neutrality+

Users

- 2007 iPhone, SCRATCH
- 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

Internet Users

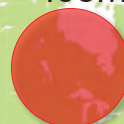
Europe
105M



Asia
114M



North America
108M



Middle East
3.3M



Africa
4.5M



Oceania & Australia
12M



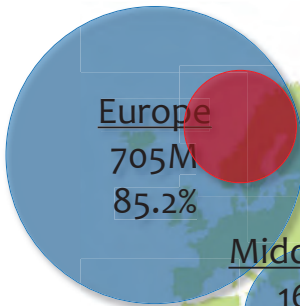
Latin America & Caribbean
18M

2000
361M
6%

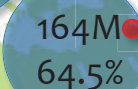
Internet World Stat: <http://www.internetworldstats.com>

Internet Users

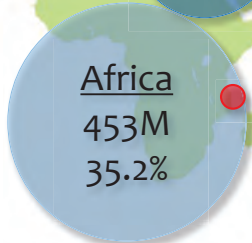
Europe
705M
85.2%



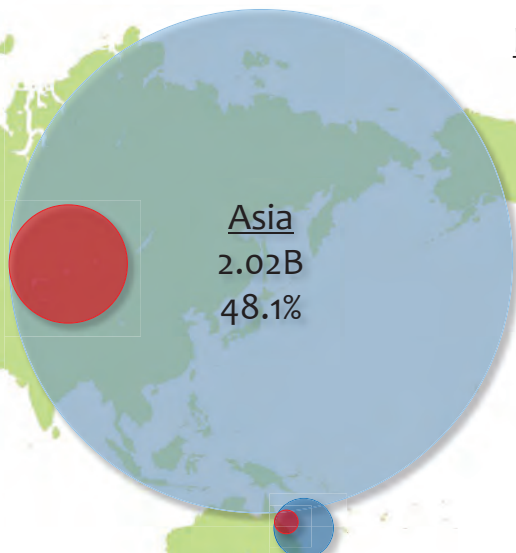
Middle East
164M
64.5%



Africa
453M
35.2%



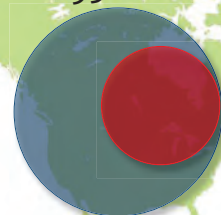
Asia
2.02B
48.1%



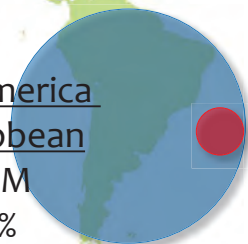
Oceania & Australia
28.4M
68.9%



North America
345M
95%



Latin America & Caribbean
437M
67%



2018
4.16B
54.4%

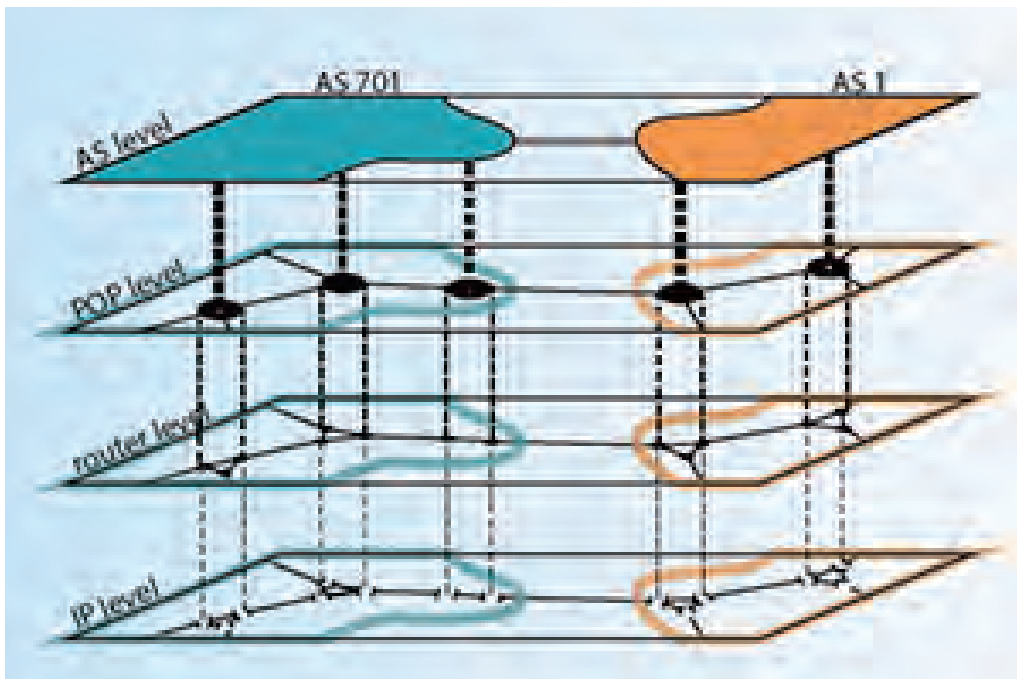
Penetration (% population)

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

The Internet

IP
EGP
IGP

DNS
IP address



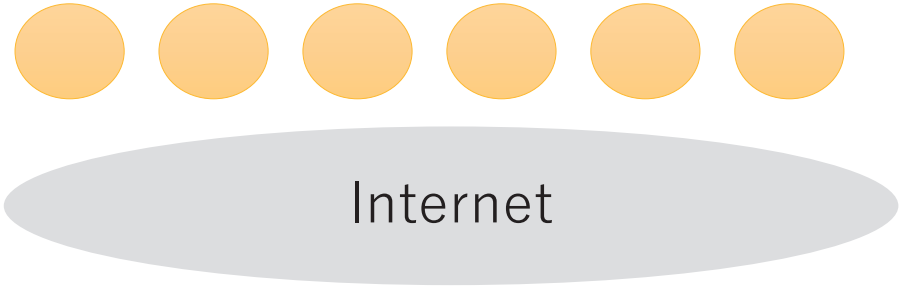
Internet Layers: AS, PoP, Router, and IP.

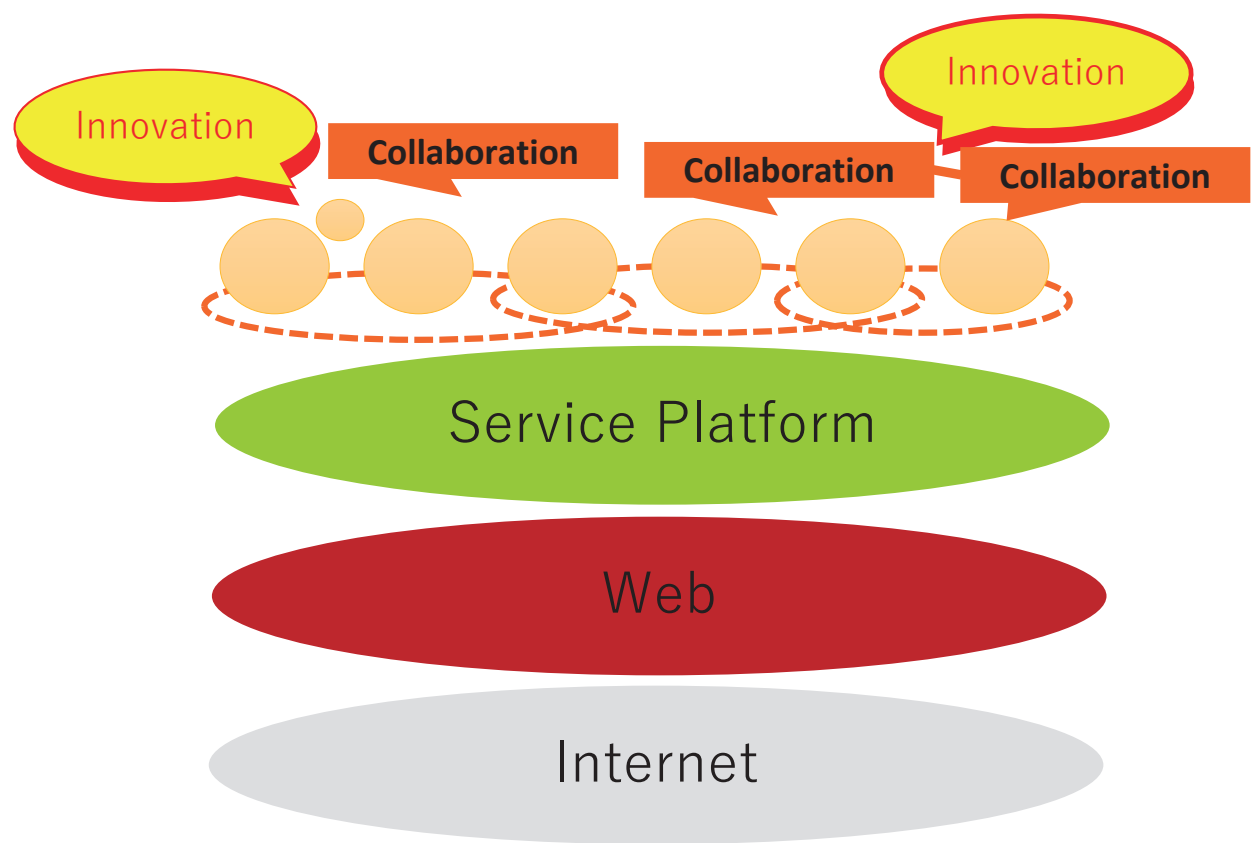
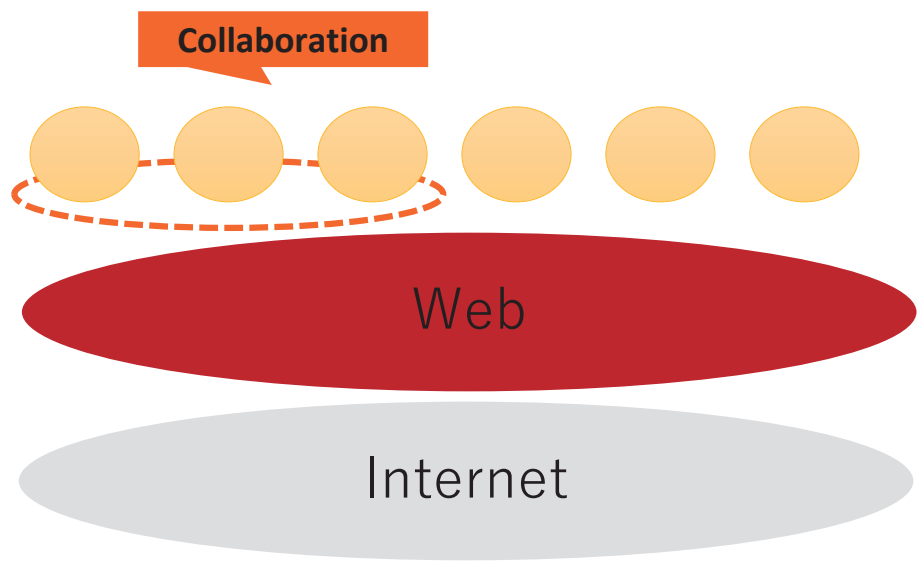
http://www.caida.org/research/topology/as_core_network/2017/



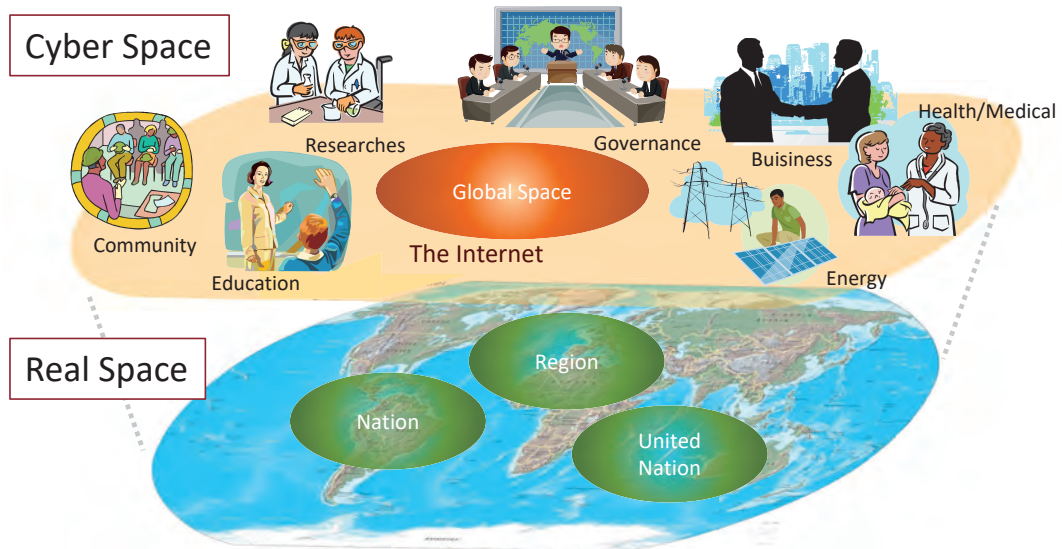
IP
EGP
IGP

DNS
IP address





Cyber Space and Real Space



“The Internet”

in Single Planet

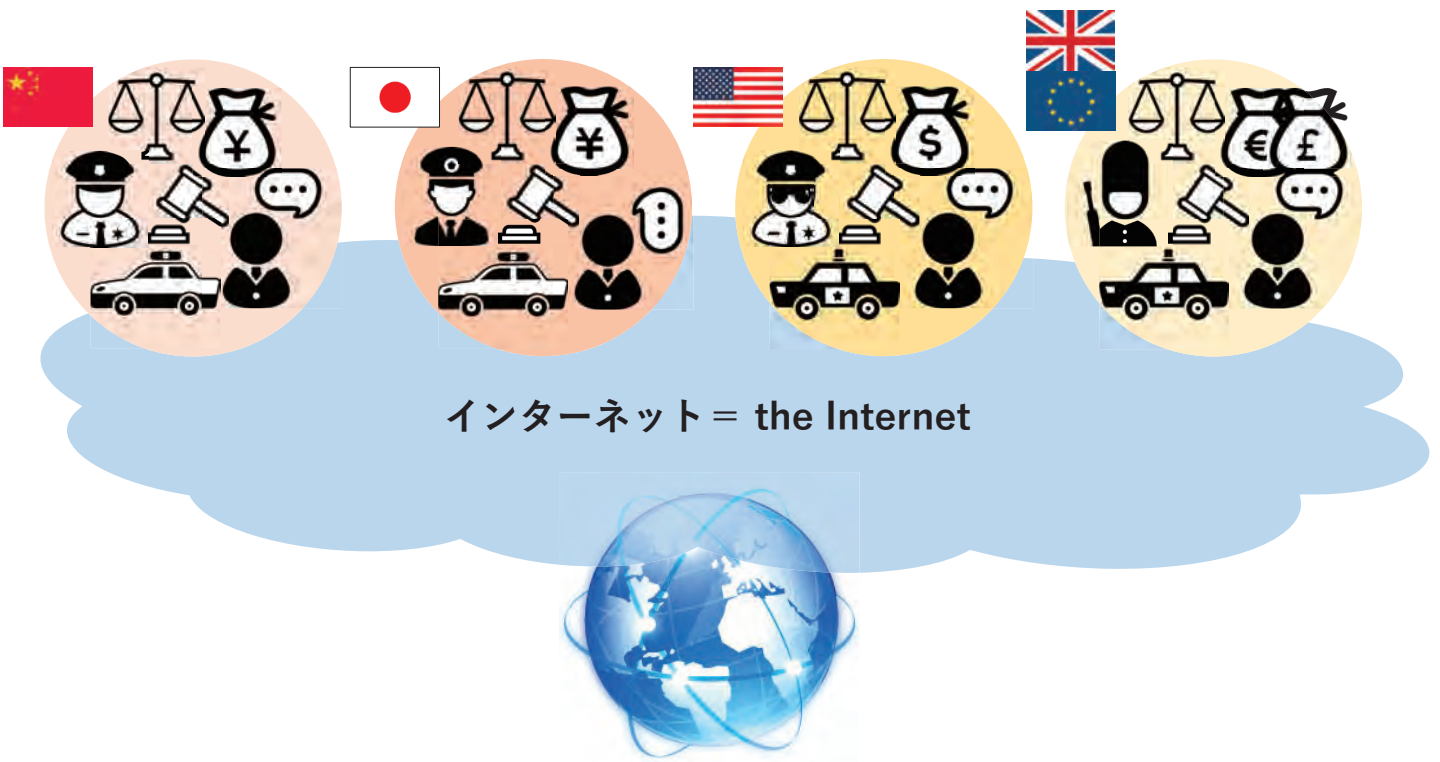
- Multiple Culture
- Multiple Language
- Multiple Nations
- Multiple Laws
- Multiple Court
- Multiple Police



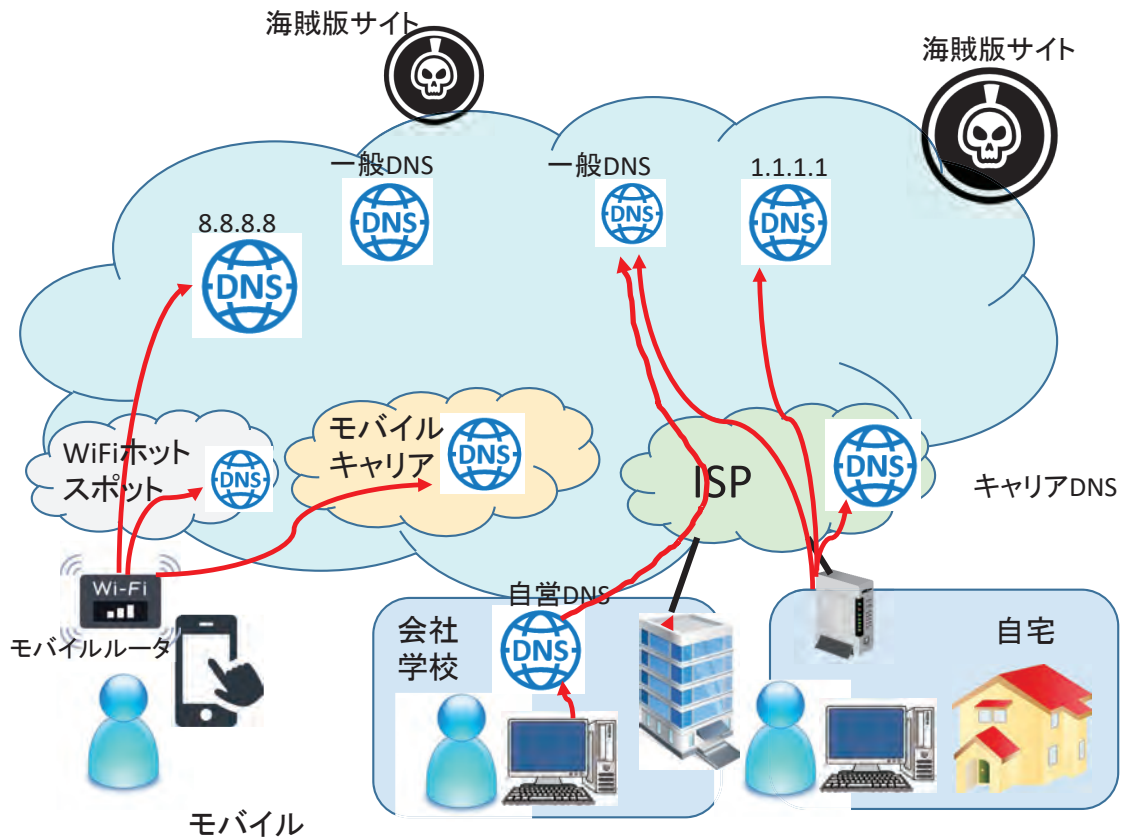


Nations on the Planet

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



インターネット = the Internet



Computer and Operating System

UNIX



- ハードウェアメーカーがOS (オペレーティングシステム) を作るのが普通だった時代、初めて研究機関が開発したOS
- “人間のためにコンピュータを使う” という発想で作られた



DEC PDP-7 : UNIXが最初に動いたコンピュータ
Wikipediaより出典(Creative Commons)



UNIX開発者
ケン・トンプソン、デニス・リッチー
<http://www.catb.org/~esr/jargon/html/U/Unix.html>



Dennis Ritchie

(dmr)

1941-2011

Father of C and UNIX

From dmr: Tue Apr 7 00:01 (EST 1981) message from research:

Don't lose interest in the jarg terminal stuff, no matter what momentary problems you have with the device or the system. I think the approach and the progress so far are very exciting.

There's that line from Breton about standing on the shoulders of giants. We're all standing on Breton's shoulders. - Ken Thompson

```
#include <stdio.h>

int main(void)
{
    char s[]="Hello World!\n";
    printf ("%s",s);
    return 0;
}
```

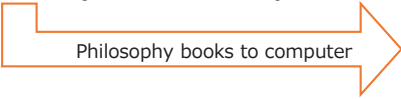
AI and Robotics

Analyzing words



The Critique of Pure Reason by Immanuel Kant

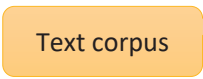
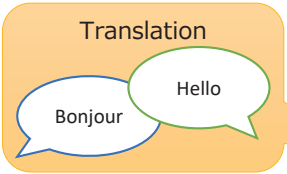
That all our knowledge begins with experience there can be no doubt. For how is it possible that the faculty of cognition should be awakened into exercise otherwise than by means of objects which affect our senses, and partly of themselves produce representations, partly rouse our powers of understanding into activity, to compare to connect, or to separate these, and so to convert the raw material of our sensuous impressions into a knowledge of objects, which is called experience? In respect of time, therefore, no knowledge of ours is antecedent to experience, but begins with



*1) https://commons.wikimedia.org/wiki/File:IBM_System360_Mainframe.jpg

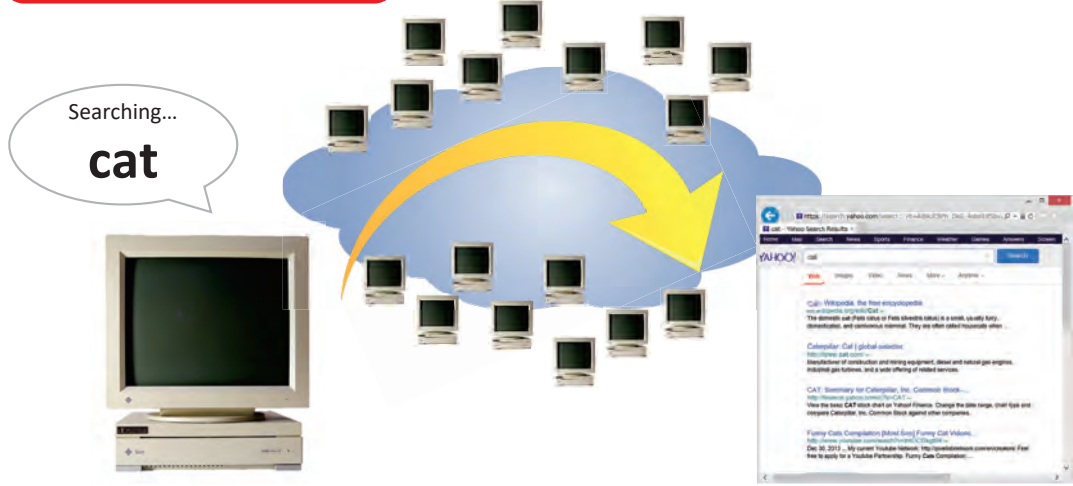
*2) Excerpts from The Critique of Pure Reason, 1781 [B edition]

Analyzing language

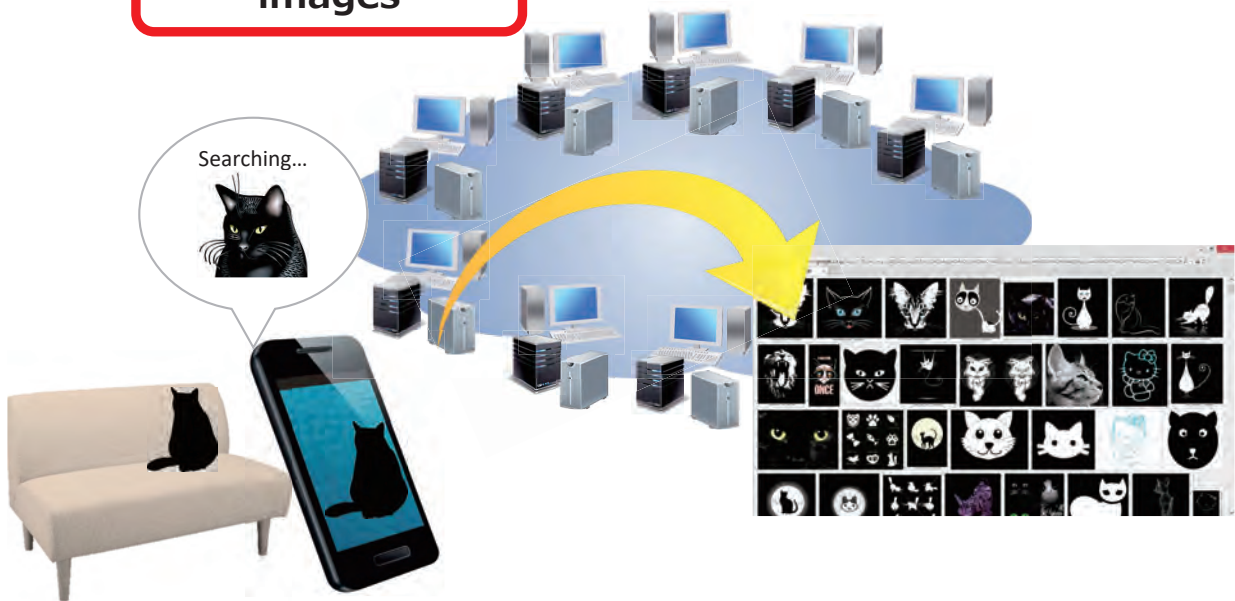


https://en.wikipedia.org/wiki/Ken_Thompson#/media/File:Pdp7-oslo-2005.jpeg

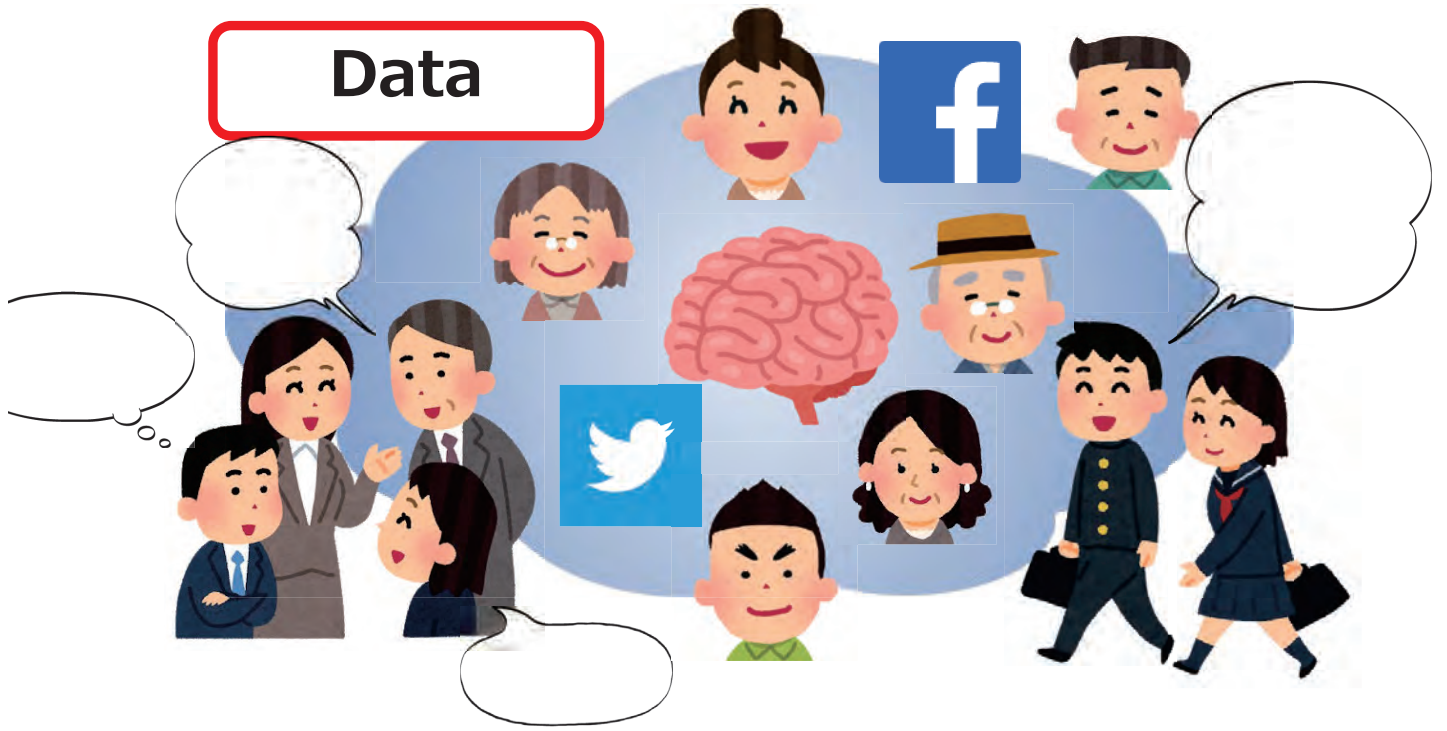
Analyzing WEB



Analyzing images

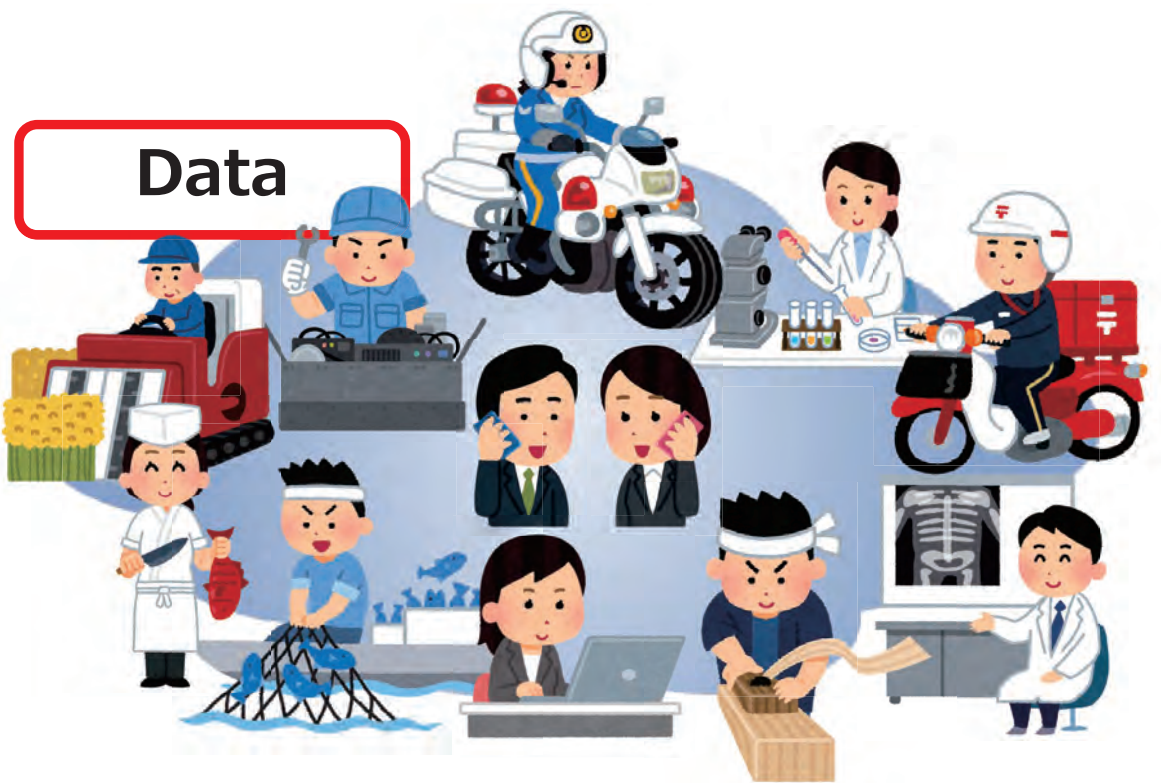


Data



Data





Volume 14, Issue 3
 November 2017, pp. 633-660
 THE MECHANICAL DAUGHTER OF RENE DESCARTES:
 THE ORIGIN AND HISTORY OF AN INTELLECTUAL FABLE
 MINSOO KANG (a1)
<https://doi.org/10.1017/S147924431600024X>
 Published online: 19 August 2016
 COPYRIGHT: © Cambridge University Press 2016

DESCARTES' "WOODEN DAUGHTER"



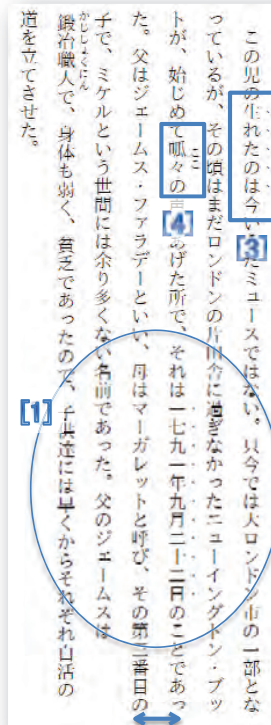
Fig. 1. From *Newnes' Pictorial Knowledge*, vol. 6 (London, n.d. but probably 1933-4), 2237.

Chrome

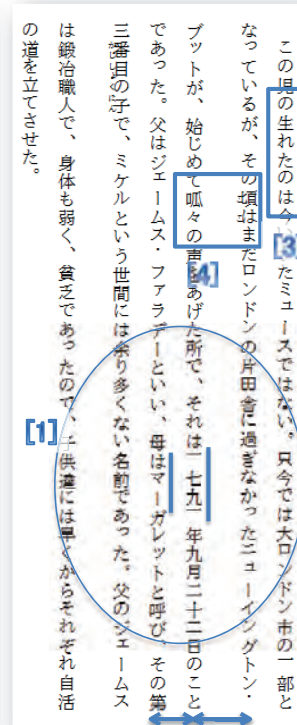
- 1 基本的な縦書き対応
 -
- 2 行間の指定
 -
- 3 傍点
 -
- 4 ルビ
 - △ (縦位置が不自然)

Firefox (Nightly Build)

- 1 基本的な縦書き対応
 - △ (文字により縦位置が不揃い (漢数字の一、カタカナのマ))
- 2 行間の指定
 - △ (ルビにより行間が崩れる)
- 3 傍点(圏点)
 - × (表示されない)
- 4 ルビ
 - △ (位置が極端に離れる)



Chrome



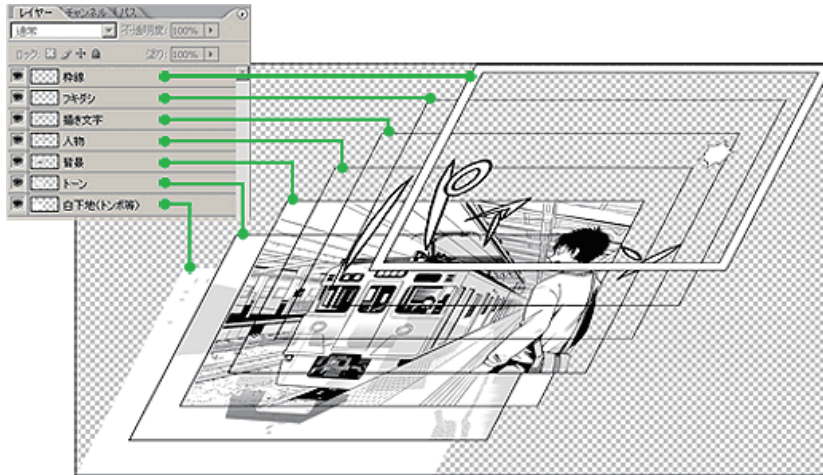
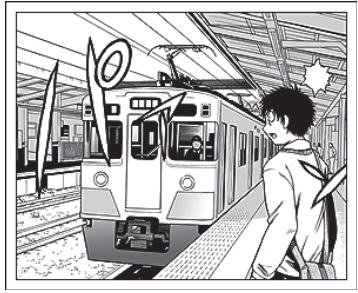
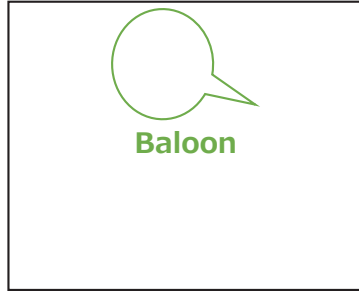
Firefox

Internet Explorer

- 1 テキスト装飾
 - [1a] × (text-strokeの袋文字はできない。text-shadowを使用すればよい)
 - [1b] ○ (text-shadowの袋文字)
- 2 英数字の正立
 -
- 3 縦中横
 - (-ms-text-combine-horizontal: all; をCSS指定)
- 4 行末処理
 - △ (禁則処理は行われる。均等割付は行なわれず、各行の行末の位置が不揃いになる。)



Internet Explorer



http://shinomi.webshogakukan.com/school/2008/03/post_10.html





Wrapping for Outside Advertisement

40

海外では可能なこれらの展開が日本ではできない



プロジェクションマッピング 事例:アメリカ(コカ・コーラ)



ビルラッピング 事例:フィリピン(リーバイス)



電車ラッピング 事例:アメリカ

最優秀賞
 鈴乃屋オリジナルコレクション
 「衣のいのち」
 株式会社プラスディー

- 五百夜夢 — しほよのゆめ
- 登花麗春 — としあけいろはる
- 初薫椿 — ういぐんごぼき
- 累華春秋 — るいかしゅんしゅう
- 和魂羅彩 — わこんらさい
- 深海光巡 — しんかいこうじゆん
- 雪花霰 — ゆきはらあられ
- 明花涼蘭 — めいかりょうらん
- 雲錦市女笠 — うんきんいちめがし
- 鞠に糸巻き — まりにいとまき

衣のいのち®

Vol.37



著者 大塚 千弘



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優秀賞
川柳コンテスト
ドットコム・マーケティング



— 投稿作品一覧 —
ENTRY

最新投票順 新着応募順 獲得票数順

<p>華風にて 父母に感謝の 果報者</p> <p>★★★★★ 2016-04-17 みつかいかささん</p> <p>☆ 詳細へ</p>	<p>春惜しむ 湯けむりの中 友の顔</p> <p>★★★★★ 2016-04-21 ニックちゃんさん</p> <p>☆ 詳細へ</p>	<p>月岡の 温泉バステルカラー おどろきや</p> <p>★★★★★ 2016-04-19 鹿名さん</p> <p>☆ 詳細へ</p>	<p>朝風呂に 浸かりたくて 目が覚めた</p> <p>★★★★★ 2016-04-19 匿名さん</p> <p>☆ 詳細へ</p>
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優秀賞
つれもうていこらよ十津川村
瀬 麻里子



Global Scale System

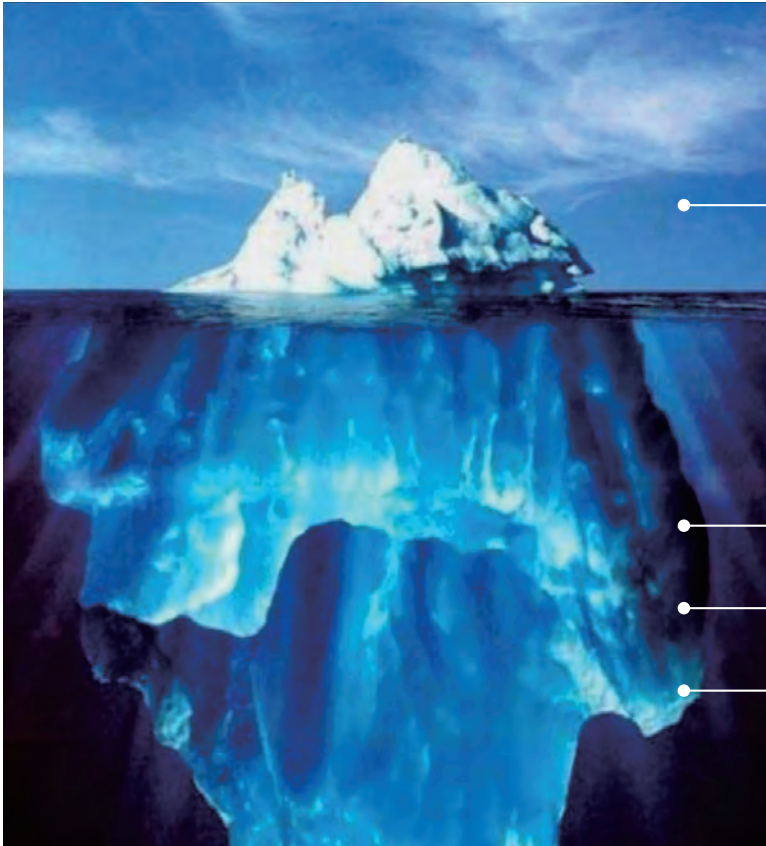
Not,
Centralized,
Please!



Sophisticated Autonomous Distributed Systems



The Internet

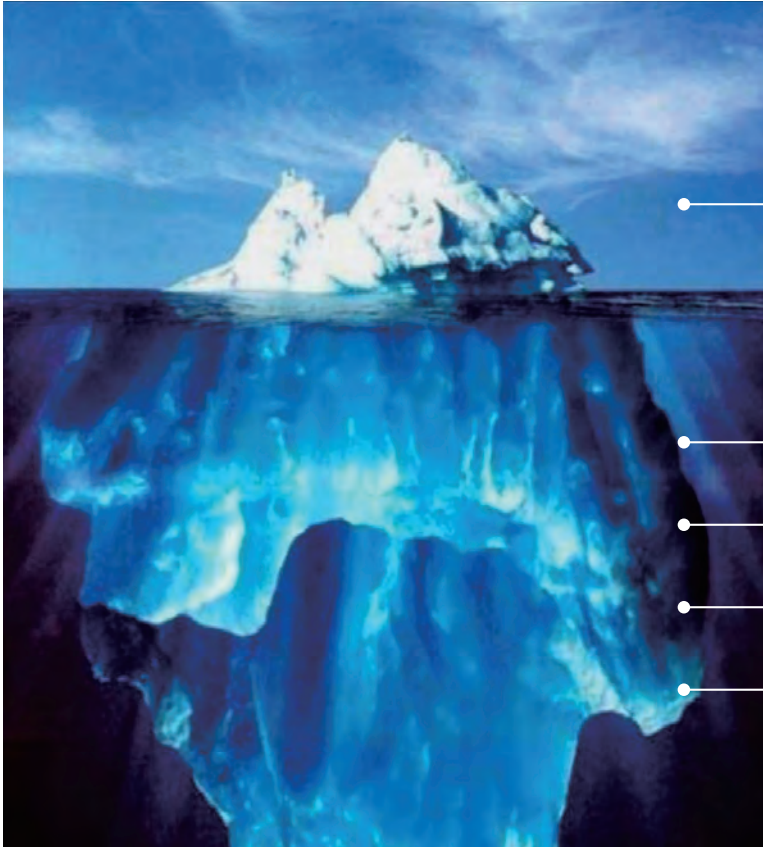


• Applications

• TCP/IP

• Ether, WiFi, Bluetooth

• Fiber, Mobile Wireless, Satellite



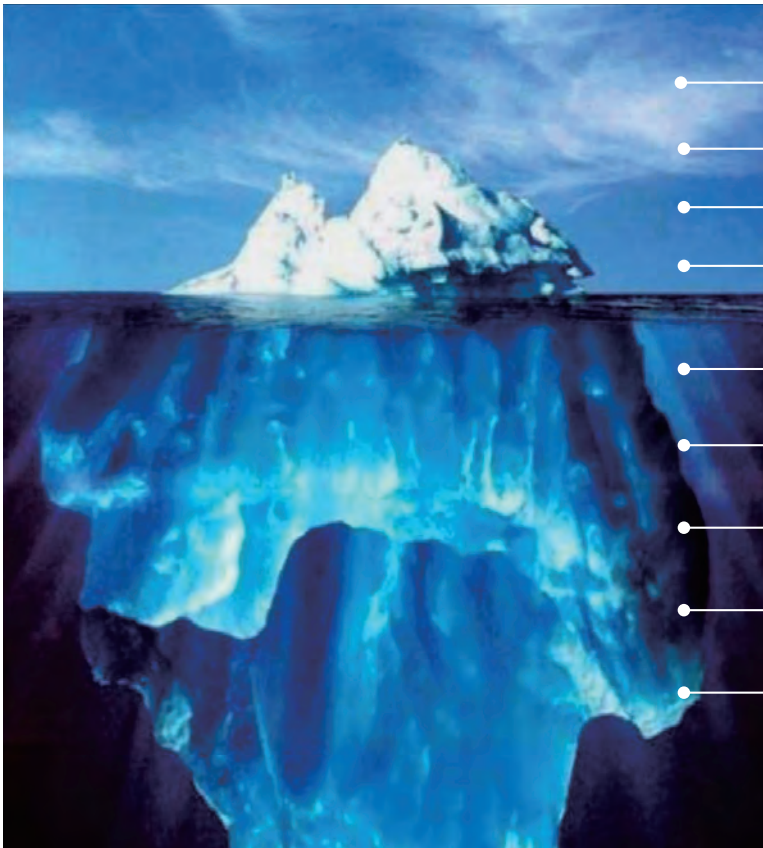
• WWW

• Browser

• TCP/IP

• Ether, WiFi, Bluetooth

• Fiber, Mobile Wireless, Satellite



• Smart Life

• Service

• AI

• **APP Security**

• **Infra Security**

• Web

• TCP/IP

• Ether, WiFi, Bluetooth

• Fiber, Mobile Wireless, Satellite

