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# IT for Management and Strategy

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A decorative graphic on the left side of the slide, consisting of a vertical line of small circles connected by thin lines, resembling a circuit board or data stream.

## Two Roles of IT

- Dreams Come True
- Better Performance

## Wishing Dreams come true

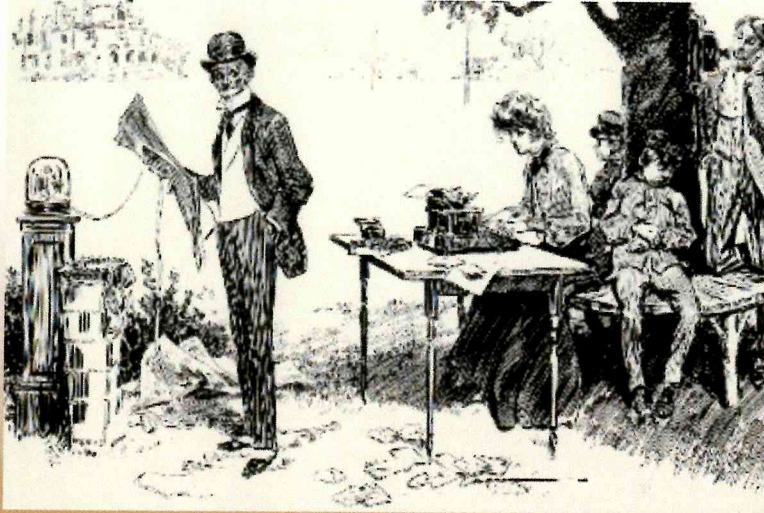


2004、TIMES誌記事より

## Meanwhile, Close Relation between Business and Technology now

- And Works hard for daily business as always
- Managers are always busy for planning, but
  - Business Goals and Systems Plans Need to align
  - Technologies are Rapidly changing
  - Companies need portfolios rather than projects
  - Infrastructure development is difficult to fund
  - Responsibility needs to be joint
  - Other planning issues. Tension between top-down and bottom-up etc.

"MR A Merger Hoggs taking a few days  
much-needed rest at his country home.  
*Drawn by Charles Dana Gibson in 1903*"

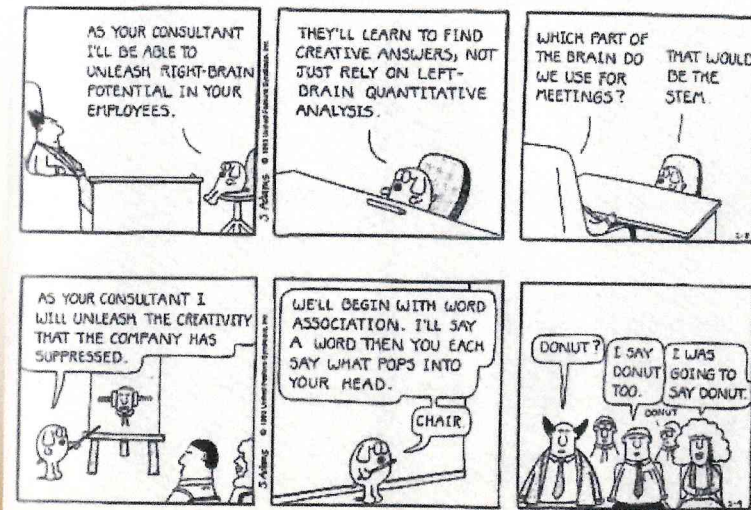


In InfoCulture, 1993

## Organizational Use of IT requires other considerations

- Organization is not like army, always
- Internet had brought new types of difficulty for management
  - The Future cannot be predicted
  - Time is NOT available for the sequence
  - IS does not just support the business anymore
  - Top Management may not know best



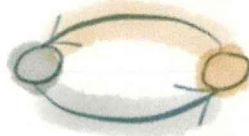
Dogbert the Creativity Consultant

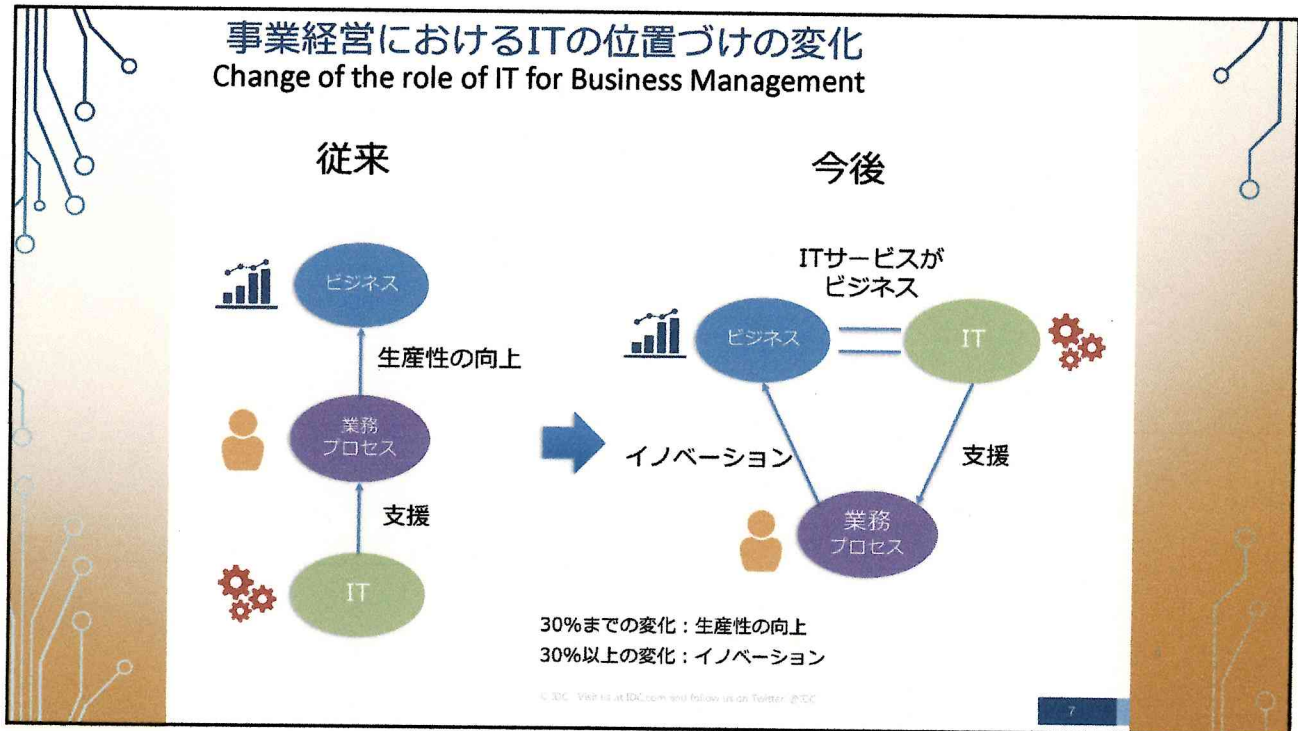


Scott Adams, Still Pumped from Using the Mouse, 1996

Mutual Relation between Strategy and Technology

Strategy Technology

- A)  Linear, strategy first
- B)  Linear, technology first
- C)  Circular, both intertwined



World is Connected,  
unevenly, in heterogeneous distribution

- Do we simply complain and sigh?
- Time and stage of growth is different among the regions

*"Internet connects our world"  
"Everyone access SNS using  
Smartphones"*

Global distribution of Information  
Is World Flat?



*The reality is not so simple...*

Gap between Idea and Reality



A Day in June, 2013

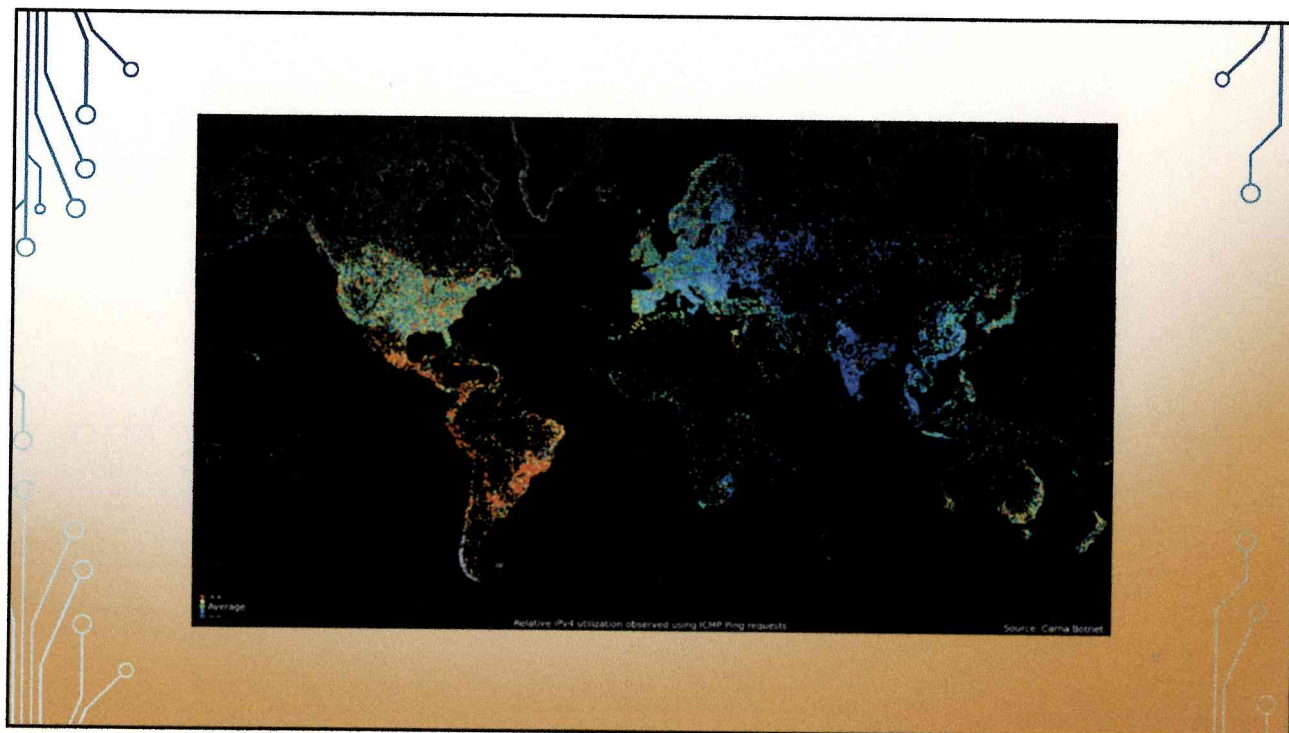
"Global"  
is  
NOT  
"Inter-national"

WORLD IS FLAT

*Already in non polar flow  
using the Internet*

Importance of Understanding  
Global IT

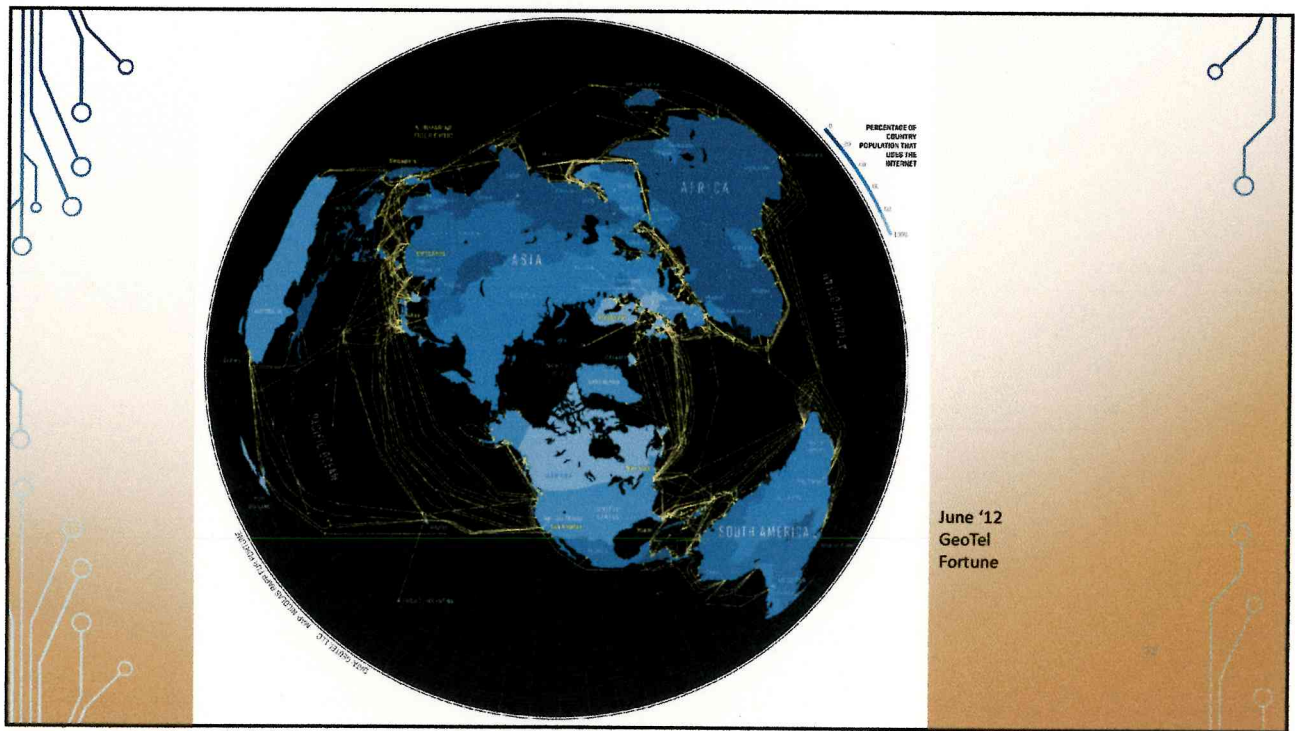
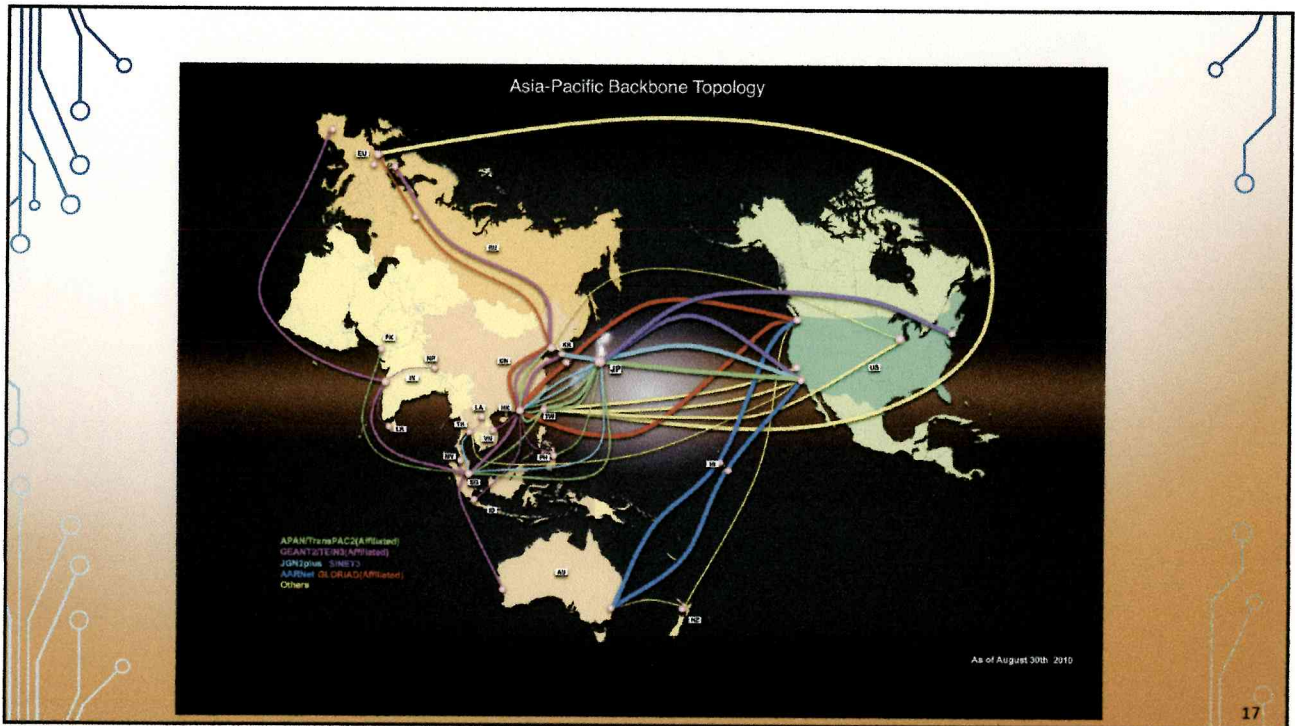




“Internet is a Cloud covering the earth,  
accessible from everywhere, by everyone”

The illustration features a large, light-brown cloud in the center. To the left, a woman in a grey jacket is talking on a mobile phone. To the right, a person wearing a traditional conical hat carries a basket on a shoulder. Below the cloud, three server racks are shown, each with a small colored circle (green, blue, yellow) around its base. On the far right, a person is sitting at a desk with a computer, working. The entire scene is set against a light brown background with decorative circuit-like borders.





## Big Data

- Recent Buzzword
- Unorganized huge amount of data
- Big Database holding different contents
- Ex. SNS storage, archives for individual users, mail archives, or huge sparse matrix containing numeric data and multi media data

## We can see the internet has full of unorganized and unstructured data

- Originally, business firms are just utilizing organized data in data base
- Even mail log, web site access log are valuable data
- “life log” means “if aggregation goes perfectly, we can tell one’s private information from big data easily as possible.”

## Big Data causes issues for

- Data Science theory
- Storage Architecture and its management
- Cloud and Cloud storage

## Cloud, Cloud storage are just the technical keywords

- Which bring better performance, better flexibility, better price
- Remember, the US has the Patriot act.
- Cloud service totally depends on the network
  - Bandwidth and response time
- Disaster management or Business Continuity is another consideration
- Also green computing

## Curation

- Digital curation to guide people in the internet, the sea of data
  - “Digital curation is generally referred to the process of establishing and developing long term repositories of digital assets for current and future reference[2] by researchers, scientists, historians, and scholars” – Wikipedia
  - Google can give you the responses on your query, but it is just a fragment data of whole story. It will NOT give you the way to see the data or the stream where the data exists

## So, the Curation is

- A process to organize existing data in one's viewpoint
- Explanation of the data you found in Google
- Creation vs Curation
- Need Good curator, a person for curation, at your organization!

## Tablet

- As a national notebook computer
- As a terminal for business
- New iPad in March

**Tablet computers thrust Thailand classrooms into digital era**  
**Japan Times June 19, 2013**



On Sept 19, 2014 I got a news from Thailand



Jmart announced the new SmartPhone series  
Starting from 6240Yen (1890TB).  
To get the share about 2% of the Market next year  
The size of 2014 estimated as 12M units,

## Chance for Oversea Sites?

- Some Data Center in Japan started to find a back up site in some Asian countries
- Details are not sure yet.
- Clearly, NTT Data, KDDI, etc started this year to search or establish it

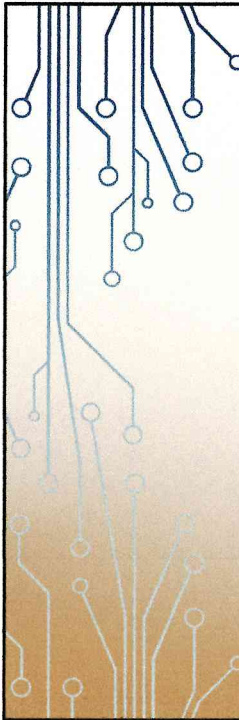
## Components of Cloud

"Decision Support Tools for Cloud Migration in the Enterprise",  
2011 IEEE 4<sup>th</sup> Int'l Conference on Cloud Computingより


- **Virtual Machine**: has an operating system, and either a server type (e.g. AWS.OnDemand.Standard.Small) or server specifications (e.g. CPU clock rate and RAM).
- **Virtual Storage**: represents persistent storage and can have a type (e.g. AWS.EBS or AWS.S3) in addition to a size (e.g. 100GB) and the number of input and output requests that are expected per month.
- **Application**: represents software applications that are deployed on virtual machines.
- **Data**: represents application data that is deployed on virtual storage.
- **Database**: represents hosted databases such as Amazon's Relational Database Service or Microsoft's SQL Azure.
- **Remote Node**: represents nodes outside of the cloud such as in-house servers or desktop PCs.
- **Communication Path**: represents data transfer between any pair of nodes.
- **Deployment**: represents the deployment of applications onto virtual machines, or data onto virtual storage.

## Intellectual Property and Open Source

- Recent IEEE Spectrum Tech Alert on March 22,2012 for the US and China
  - the U.S. green energy company AMSC, which is suing Sinovel Wind Group Co., China's biggest wind turbine manufacturer, for breach of contract, copyright infringement, and theft of trade secrets, appears to have strong evidence—including a full confession from an AMSC employee who said he sold trade secrets to Sinovel. The legal outcome of the US \$1.2 billion lawsuit is uncertain—and is of great interest to foreign companies interested in gauging the level of risk involved in investing in China's booming markets.



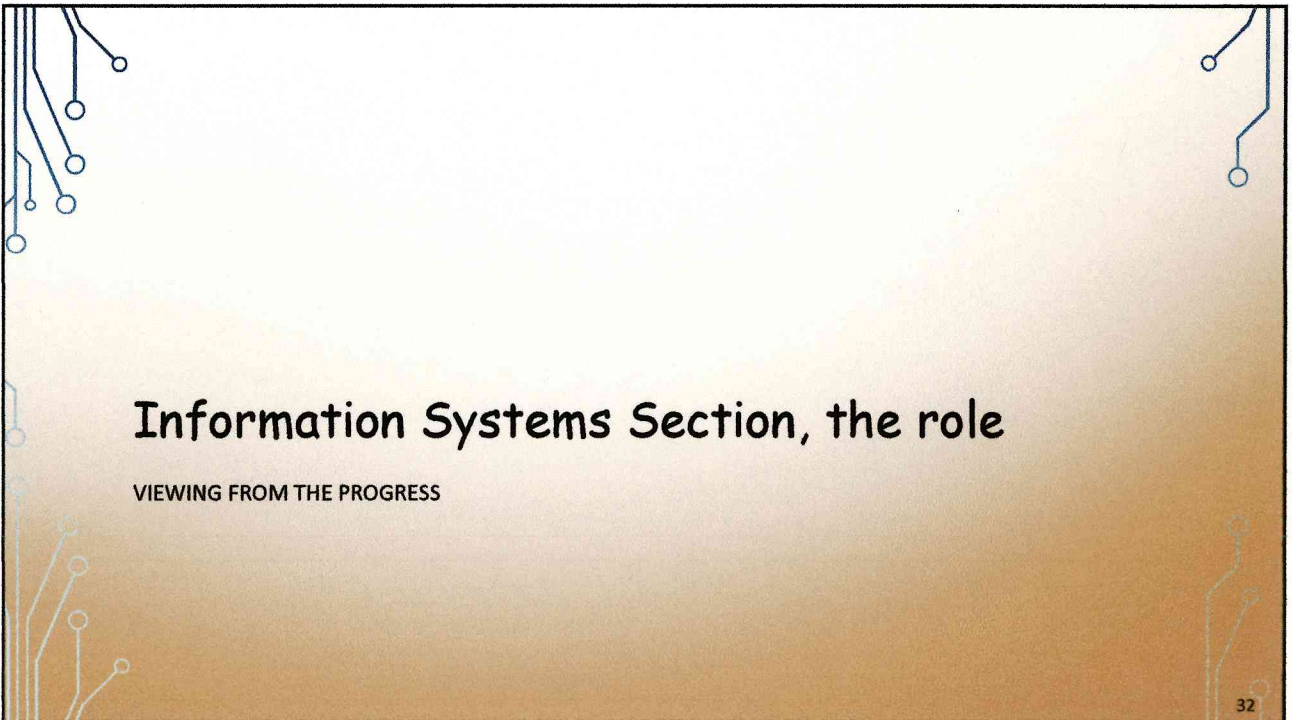
**Why We can Communicate?  
Why Is Global Supply Chain Possible?**



**There is the Net!!**

I myself is being connected since 1986

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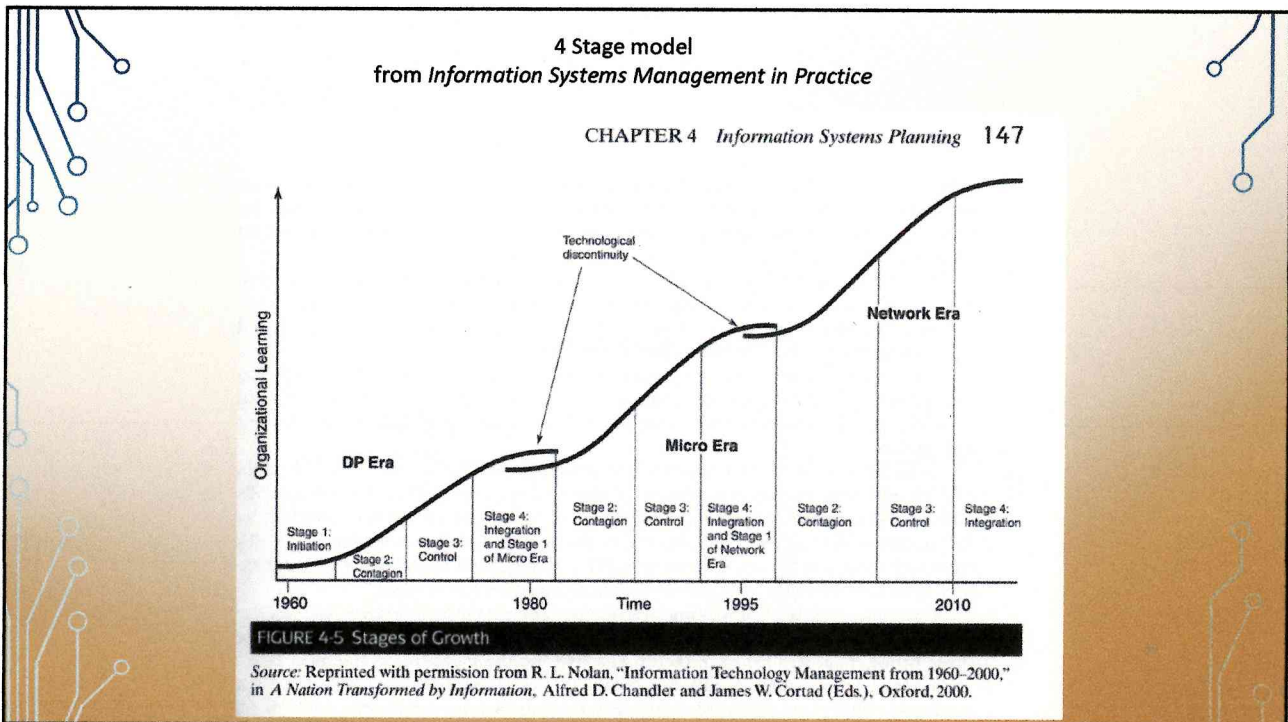


**Information Systems Section, the role**

VIEWING FROM THE PROGRESS

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## Go back to the basics What is 'Data'

- Information?
- Contents?
- Raw Material?
- Records?
- Numbers?
  
- It's all about the organization's activity: Past, Present, and Future  
Data Oriented Management

## 'Information' and 'Data'

- Information
  - Is Different from Data
  - Has meaning
  - Has structures
  - Representation and the meaning can be separated
- Data is Raw Material in IT
  - Data is NOT only number
- Information = Data + Meaning
  - Meaning: Role, Attribute in organizational activities
- Knowledge = Information + Structure

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## Nowadays

- Raw material can be modified, combined later, and are able to add new meaning
- Preserve Data as is and save
  - No compression using statistics to fit with specific usage
  - At the last moment of use, give the meaning for the data
- Huge and high performance Storage Devices are now ready for keeping such data
- Data can be stored in storage with appropriate format for later use
- Origin of Big Data, then IoT
- Deferred judgement becomes more effective
  - Avoiding premature decision
  - Flexible use of data

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## Characteristics of Digital Data

- Digital Data can keep the initial quality level
- Digital Data can be easily copied
- We cannot easily trace the history of digital data modification
- Digital Data is suitable for combining and making huge effects by just using

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## Database systems, Huge storage systems, are now available

Data itself can be managed separately from operations, usage, and statistic analysis

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## Storage Business emergence

Big Master file, High speed access, Stable storage

Enterprise storage systems with RAID, backup, Database friendly, world wide operation and access...

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## Data Centers: Emergence and Progress Ten Years ago: Yr2001

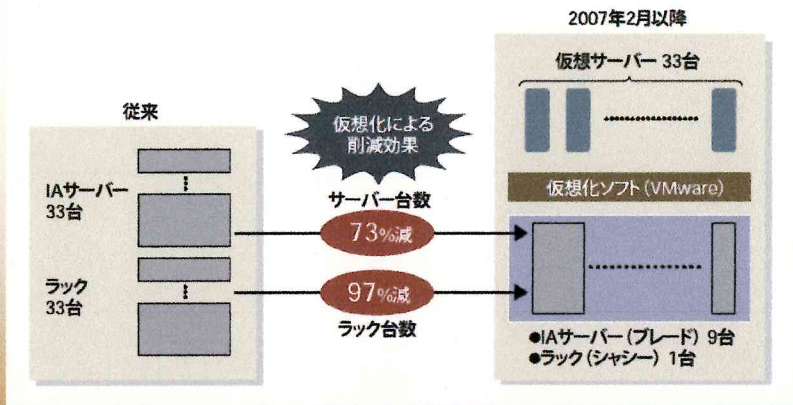
- Data Center provides the very Basic functionalities
  - Housing: a place to set user machines
  - Hosting: a place to set user applications
  - IT Service: a place to carry out user businesses
- Then, the needs for Data Center became larger
  - More floor space
  - More electricity
  - More performance
  - More ...

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## Virtualization Effects!

Among several virtualization success stories  
Saved 73% hardware, Number of racks reduced to just 3%

図2◎三井住友アセットマネジメントは仮想化技術によりサーバー台数を73%削減した  
合併によって増加したIAサーバーを集約し、データセンターへの移設費用を抑えた



Nikkei Cmp 2007.4.16 p108

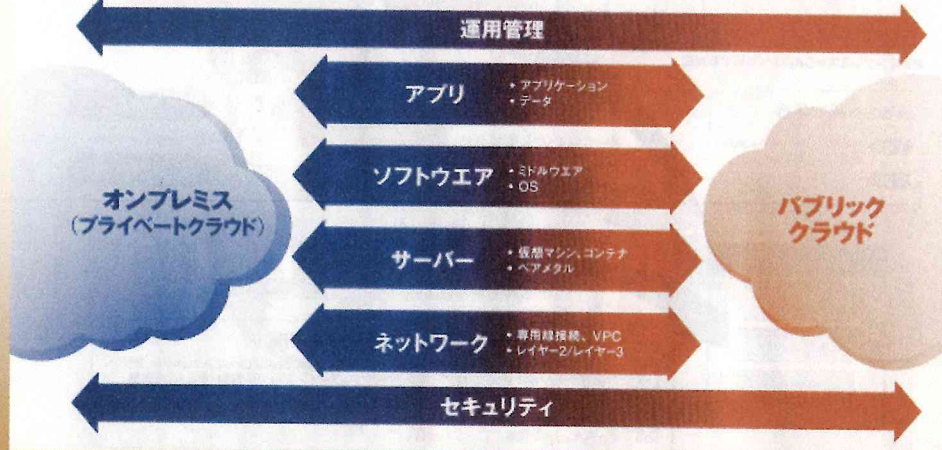
## Cloud had come! Cloud Platform Services ... 2008

- IT Service providing platform for Cloud system
  - Virtual Hosting: Virtualized Hardware, such as EC2
    - NEC (2008.10-), CTC(2008.10-), NSSOL etc.
    - Windows, Linux, Unix
  - SaaS platform: Virtualized hardware + SaaS Development Tools/systems, such as Salesforce dot com
    - NEC(2008.10-), Unisys J(2008.10-), Hitachi(2008.05-) etc.
- Server Integration and Virtualization causes the chances for physically distributed systems design, with very high speed lines
  - As a next step, issues for storage arise

## Variations of combining On-premise and Cloud

オンプレミスとパブリッククラウドに橋を架ける  
図4 ハイブリッドクラウドの連携イメージ

日経コンピュータ2015.4.2 P28



## Data Centric Management

- Managing judgement using data accumulated
  - It's not relying on the past
  - It's not relying on the statistics
  - Future is not the extension of past and present
  - Not relying on some abstract theory
  - Contents is the heart of organizational activities
- Defining Data Policy
  - Which one is the important data to manage your organization?
  - Increasing amount of 'cold data'
    - In 2020, the total data amounts in the world becomes 44ZB (now 4.4ZB)

## What is Data Policy

- Security design and high performance
  - Convenient to the users, but block any others access
- Optimal Allocation of Organizational contents throw TCO
  - Including data retention management
- Life cycle management based on the optimal allocation strategy
  - Balance between Cloud and own hardware
  - Cost
  - Choice of storage device technology: SSD, optical, tape device, ...
  - Designing the timing for data migration
  - Hierarchical storage system or entire back up method
  - Storing data on hard disks which have no powered on

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## Introduction to Data Management

- Data is the core for organizational works
  - Proper design of information flow with proper systems and processes
- And, close relation with organizational strategy
  - Business and Technology are quite close now

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## Management needs to oversee the flow of information related with organizational activities

- Data itself contains Value, and dispersed anywhere
- Most important function is tell and select effective data and meaningful data in data streams
- And, check yourself the utilization of data you have
  - Managers have quite important data in their hands
- Advanced organizations have “Chief Digital Officer”

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## Virtualization as a most important keyword

- Virtualization = Separation of logical scheme from physical devices
  - Various merit to keep sustainable development
  - Physical devices can be outsourced
- Increasing Security and Cost down

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## Virtualization and Cloud

- Cloud = Virtualization into the net
  - No more physical computers in your organizations
- Desktop virtualization
- Isolation of Corporate data, can be sharable with alliance members
- Server virtualization
- Information systems Section in some other countries

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Think differently,

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## Expanding the market, creating new business models keeps going forward

- Vietnam for example
- E-Commerce doubled the scale in 2015 of the 2013 achievement
  - 4Billion USD in 2015
  - E-Commerce as B2B and B2C
  - Internet users in 2013 was 36% of total population, 2.2Billion USD transactions
  - In 2015, estimated to increase 40-45%, resulting more than 4BUSD
  - Amazon or Taobao is aiming to enter Vietnam market so soon

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## Factors affected by net business introduction

- Information systems design concept are changing
- Productivity measure for employee/works is changing
- Expanding the activity domain of the organization
- Social change due to the introduction of the internet
- Information flow becomes high level, and internationalized
- New types of division of labor or corporation strategies
  
- There are Risks and Benefits!

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## 新たな顧客体験を提供するビジネス・モデル

世界一の  
タクシー会社

1台も  
タクシーを  
持っていない

**UBER**

世界で最大の  
宿泊仲介者

何の**ホテル**  
も持っていない

**airbnb**

世界で最も  
価値が高いと  
される小売会社

**在庫**を一つも  
持っていない

**Alibaba.com**

世界一で最も  
有名な  
メディア会社

一つの  
**コンテンツ**  
も作っていない

**FaceBook**

そして、次の  
破壊者は？

どんな  
**アイデア**を  
持っている  
会社なのか？



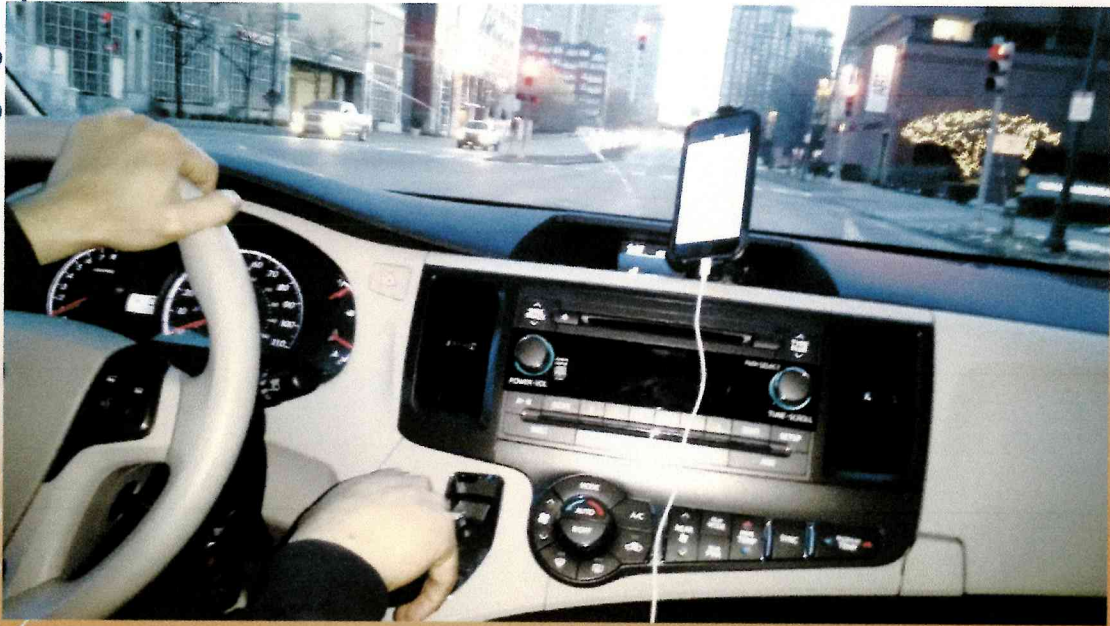
外からの脅威

出典: The Battle Is For The Customer Interface, Tom Goodwin, Havas Media, March 2015

IBM Watson Summit2016でのスライドより

## Sharing Economy Wikipediaより

- A sharing economy takes a variety of forms, often leveraging information technology to empower individuals, corporations, non-profits and government with information that enables distribution, sharing and reuse of excess capacity in goods and services. A common premise is that when information about goods is shared (typically via an online marketplace), the value of those goods may increase, for the business, for individuals, and for the community.
- Collaborative consumption as a phenomenon is a class of economic arrangements in which participants share access to products or services, rather than having individual ownership.
- The collaborative consumption model is used in online marketplaces such as eBay as well as emerging sectors such as social lending, peer-to-peer accommodation, peer-to-peer travel experiences, peer-to-peer task assignments or travel advising, car sharing or commute-bus sharing.



早朝も難なくウーバーで空港まで in Boston 2016.3

## Digital Business: A new business model even for manufacturers

- Information flow in your industry may become the business itself
- It's NOT a IT business
- What is the essence of your business?
  - Concentrate the part only

## Industry 4.0

- Next of 3<sup>rd</sup> industry
- Germany is now working for Industry 4.0
  - It's a fourth industrial revolution, renovating manufacturing
  - "Digitalization of Manufacturing"
  - Agricultural firms now try to expand the business for food processing, delivery, and sales
- Digital business would be a real trend

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## At least, Digital Management is a key to survive

- Utilizing Digital data available
- Understanding what data implies at the moment of decision
- CTO or CIO or CDO
- New types of manufacturing begin now
- Even no manufacturing manufactures arises

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*Every Evidence is found  
at the scene of the Event*



**Q & A**

