

Digital Innovation Models and Tools

Digital Innovation Architectures

March 3rd 2017

DIGITAL INNOVATION

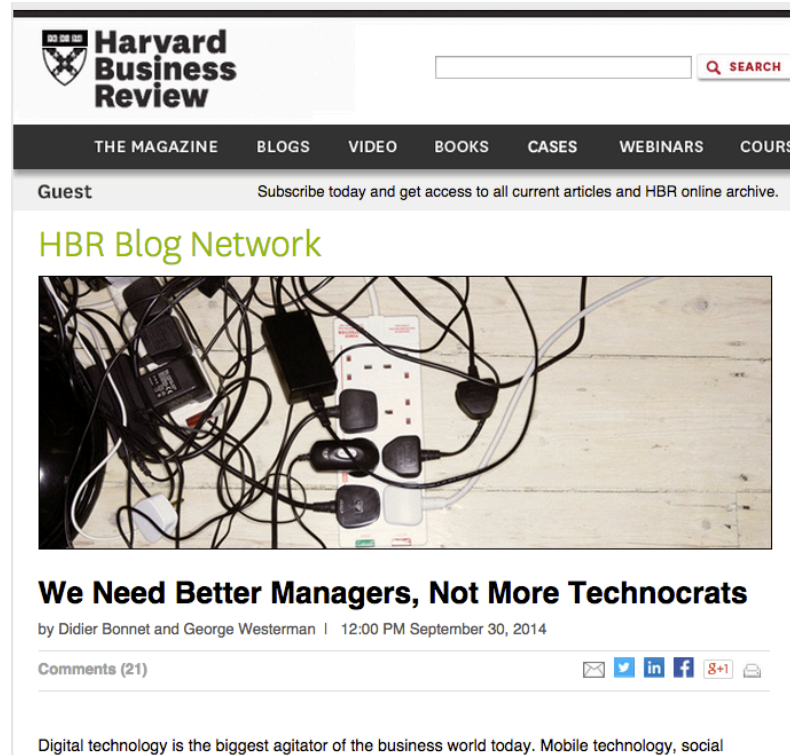
What is Digital Innovation?

Not physical
Computer science
Screens
1s and 0s
Communication
Technology
Development
Efficiency
Data
Cloud
Transparency

Smartphone
Information
Fast processes
Media
Instagram
Virtual reality
On line
Generating a necessity
Programming
Microsoft
E-commerce

Electronic signals
New reality
Oracle
Improvement
Disruptive
Hardware and software
Processes
Encryption
IBM
Artificial intelligence
Box.com
Automatization
SAP

Why you should care




The screenshot shows the Harvard Business Review website interface. At the top left is the HBR logo. To its right is a search bar with a magnifying glass icon and the word "SEARCH". Below the logo is a navigation menu with links for "THE MAGAZINE", "BLOGS", "VIDEO", "BOOKS", "CASES", "WEBINARS", and "COURSES". A "Guest" login option is visible with a subtext: "Subscribe today and get access to all current articles and HBR online archive." The main content area features the title "HBR Blog Network" in green. Below this is a photograph of a messy power strip with many tangled black cables plugged into it. The article title is "We Need Better Managers, Not More Technocrats" by Didier Bonnet and George Westerman, dated 12:00 PM September 30, 2014. It has 21 comments and social media sharing icons for email, Twitter, LinkedIn, Facebook, and Google+. The first sentence of the article is "Digital technology is the biggest agitator of the business world today. Mobile technology, social".

Harvard Business Review

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Guest | Subscribe today and get access to all current articles and HBR online archive.

HBR Blog Network



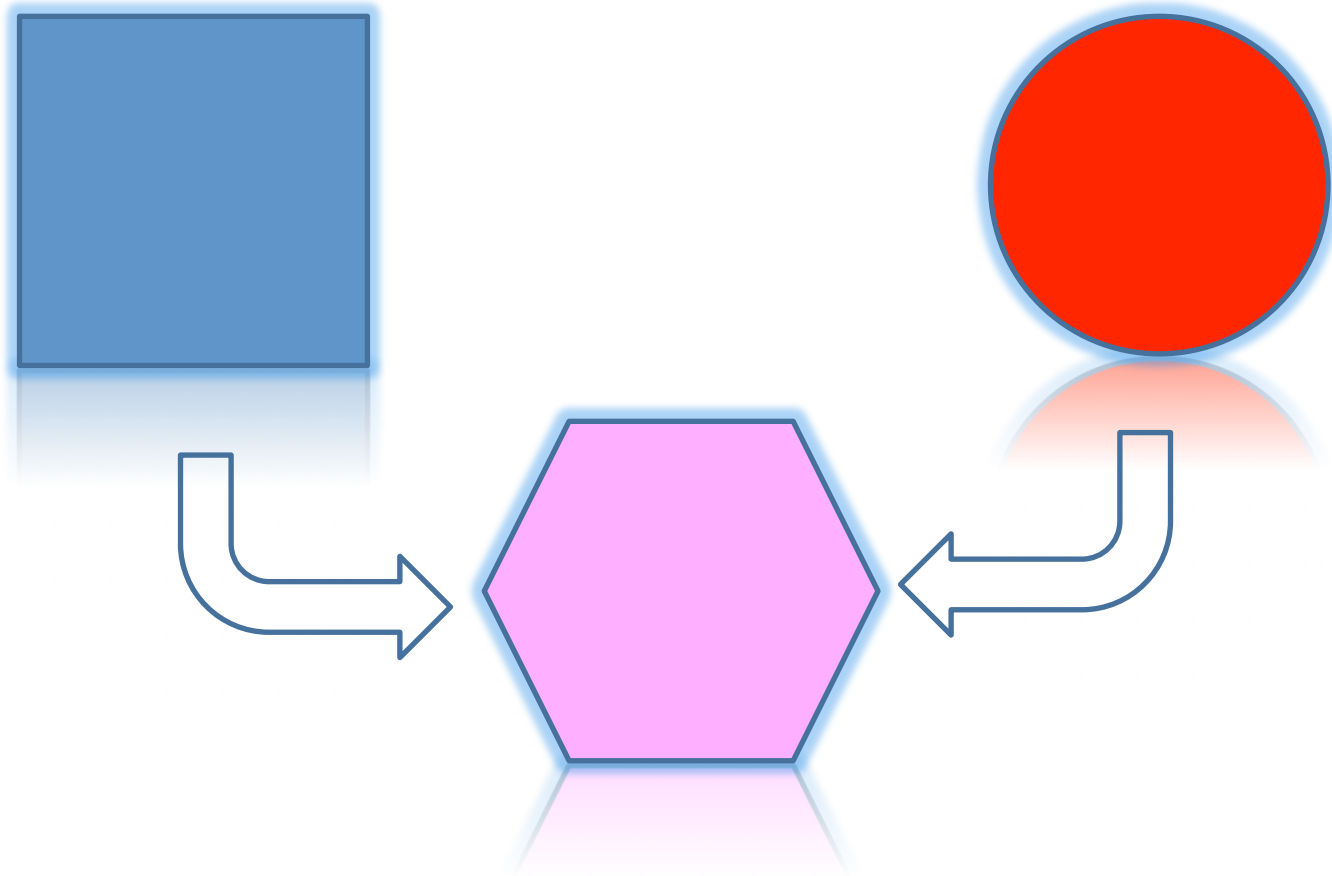
We Need Better Managers, Not More Technocrats

by Didier Bonnet and George Westerman | 12:00 PM September 30, 2014

Comments (21) | [Email](#) [Twitter](#) [LinkedIn](#) [Facebook](#) [Google+](#)

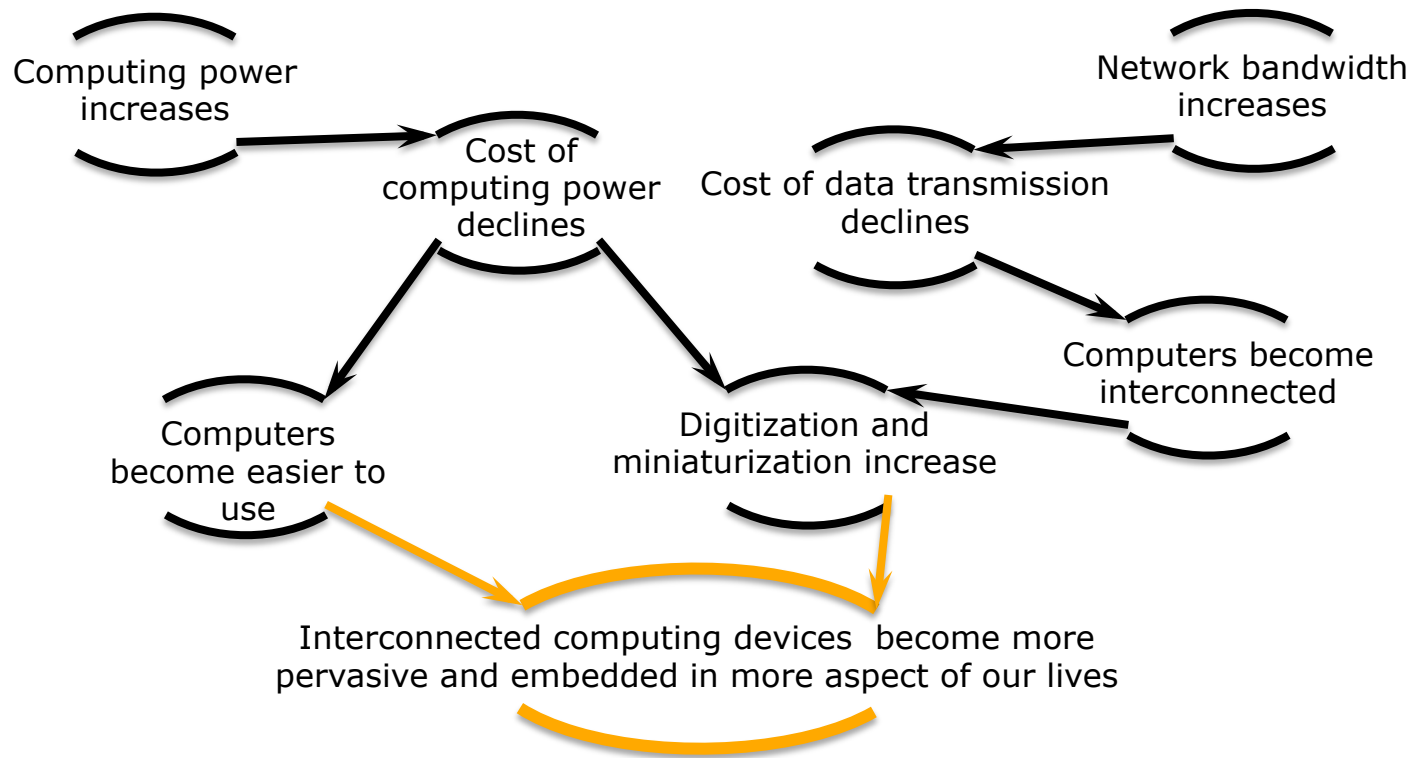
Digital technology is the biggest agitator of the business world today. Mobile technology, social

Specialists, Information Systems, Management



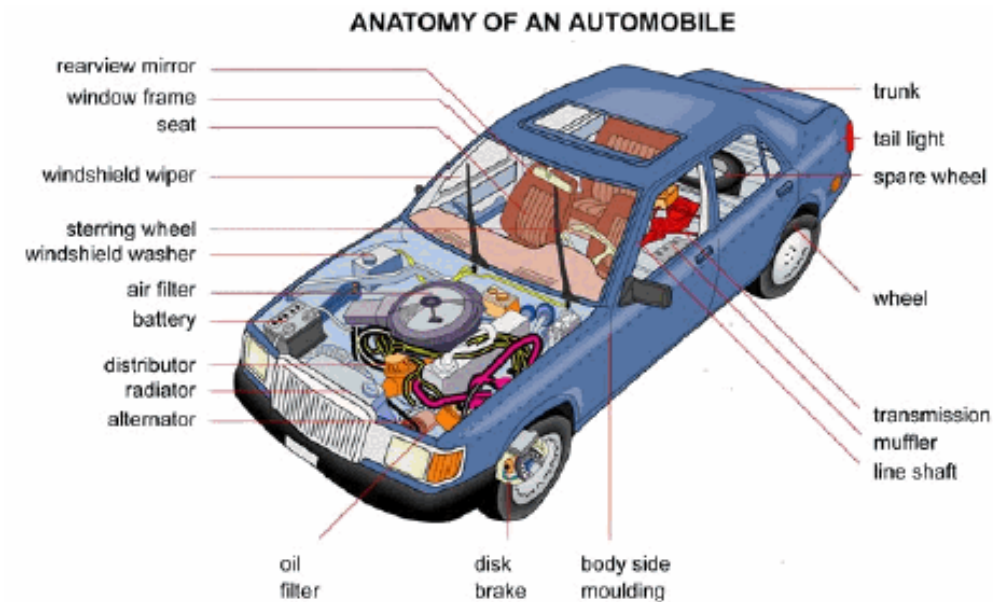
(Digital) Innovations

The image is a collage of digital innovation-related content. It features a central video player showing a drone flying over a landscape. The video player has a CNET logo and the text "Tesla update brings auto pilot". To the left of the video is a photograph of a silver car. Above the car is a small graphic showing a measurement of 0.46 inches (11.6mm). Below the car is a map interface with various city markers and a search bar. The map is powered by Google and includes a scale bar for 500 miles and 500 kilometers. The video player also shows a progress bar at 0:17 / 2:59 and various control icons.



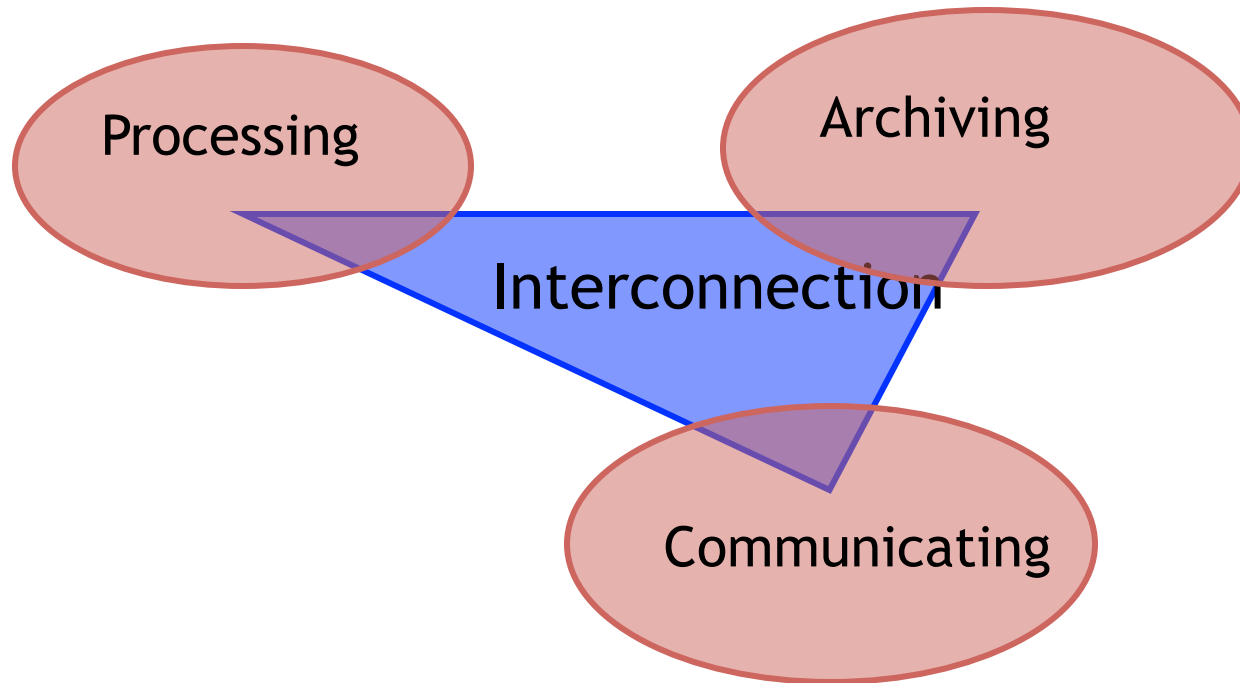
WHAT IS A COMPUTER?

The parallel with another machine: the car

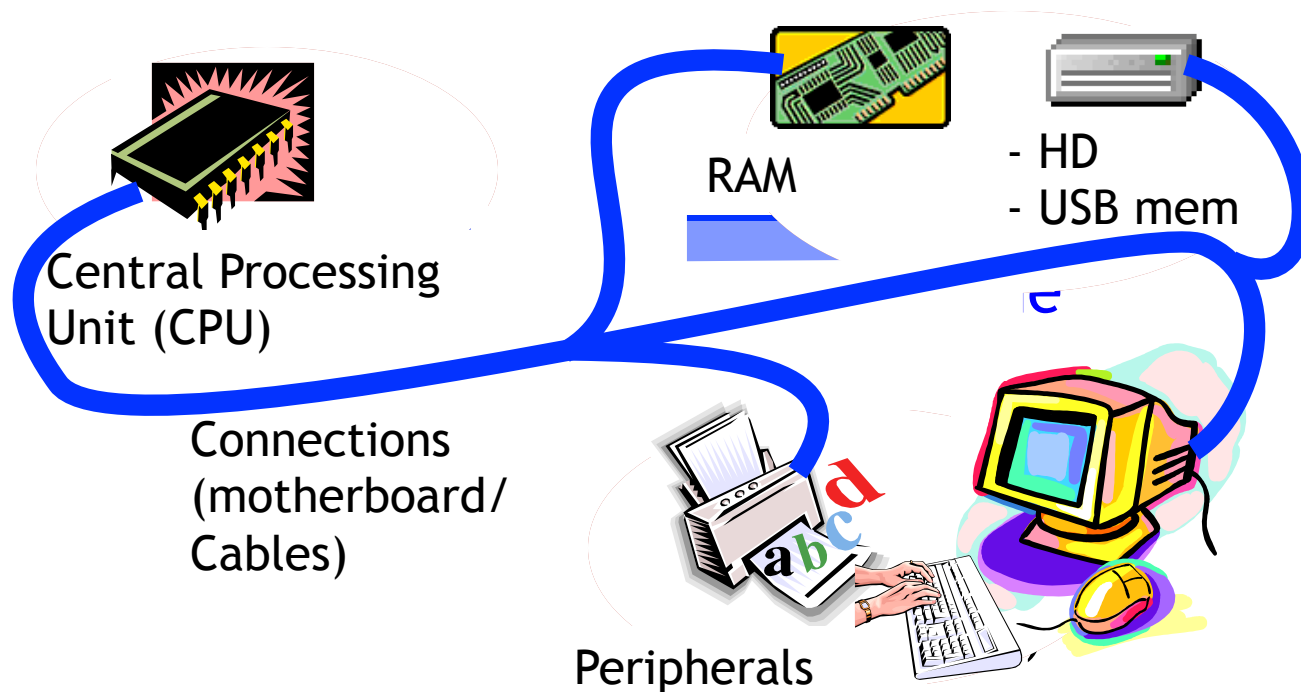


- The components of a car organized in systems

The systems in a computer



The devices in a computer



General structure of a computer



what else beyond devices?

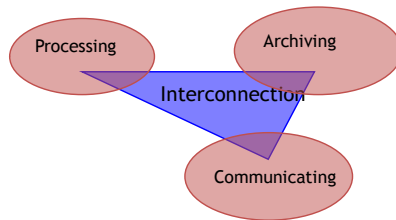


what else beyond devices?

???

???

???



Hardware (physical devices)



iOS 7 waterproofs your iPhone

With the new features and smart formalities of iOS 7, the phone can now detect sudden changes in thermodistribution with the touch sensitive screen and the home button.

This utilizes emergency shut off of the phone's power supply and corresponding components to prevent any damage dealt to the delicate circuitry.

Confirmed by
lifehacker

This feature is covered by Apple's warranty policy.

[reactions](#)



iOS 8.0.1 update NOT

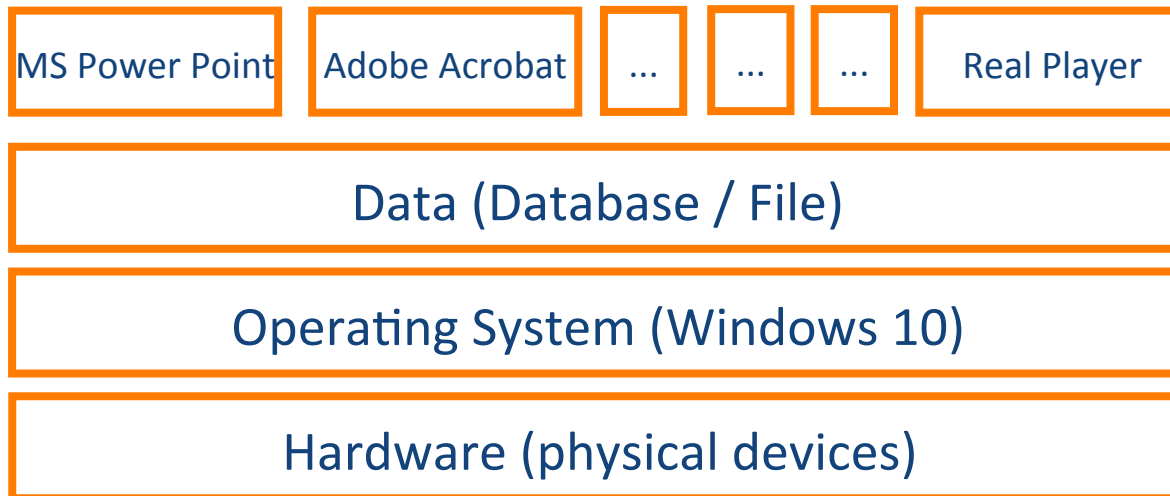


General structure of a computer

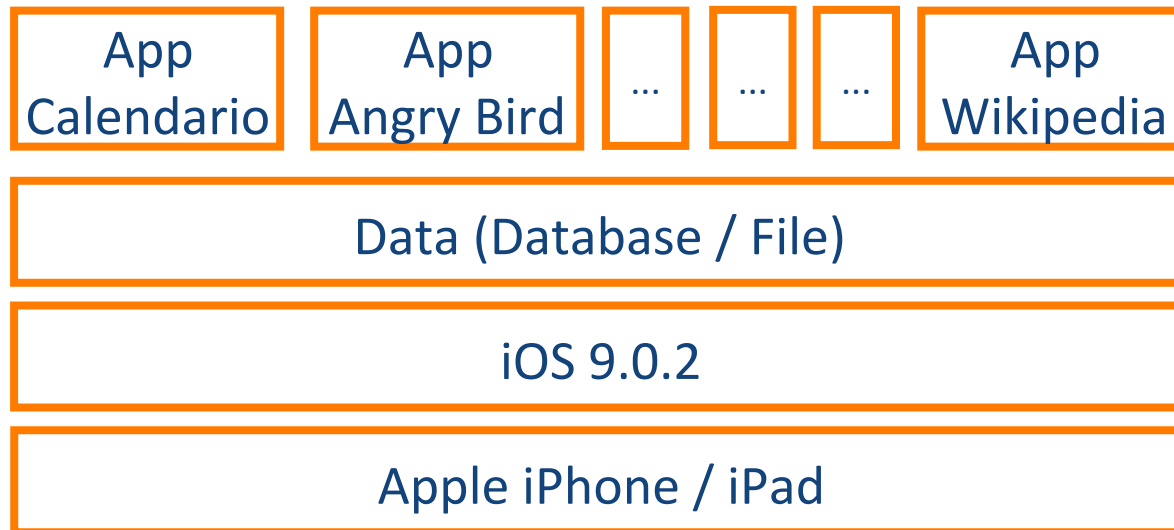
Operating System (es. Windows, Linux)

Hardware (physical devices)

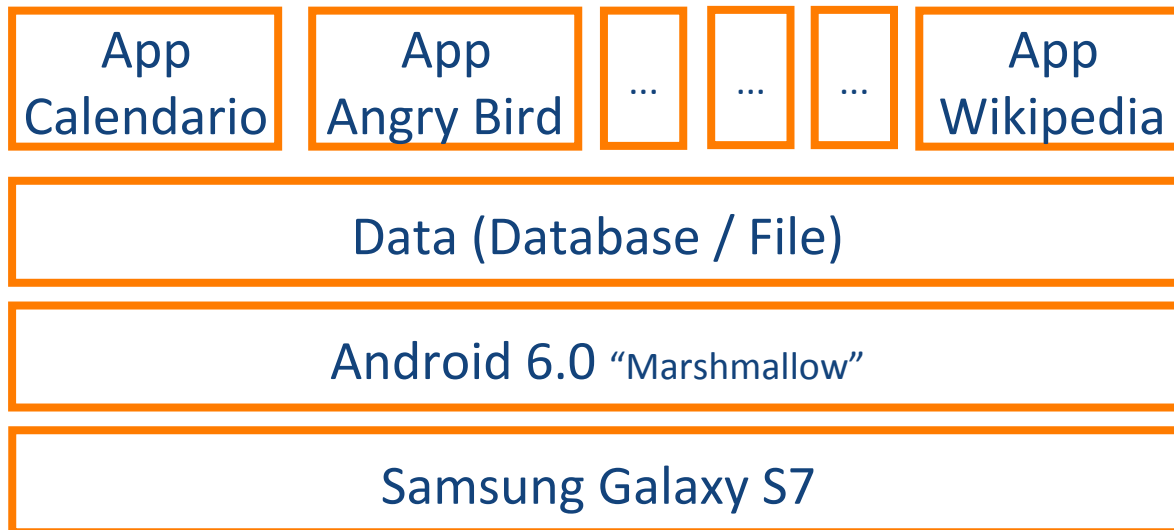
Structure of a PC



Structure of an iPhone / iPad



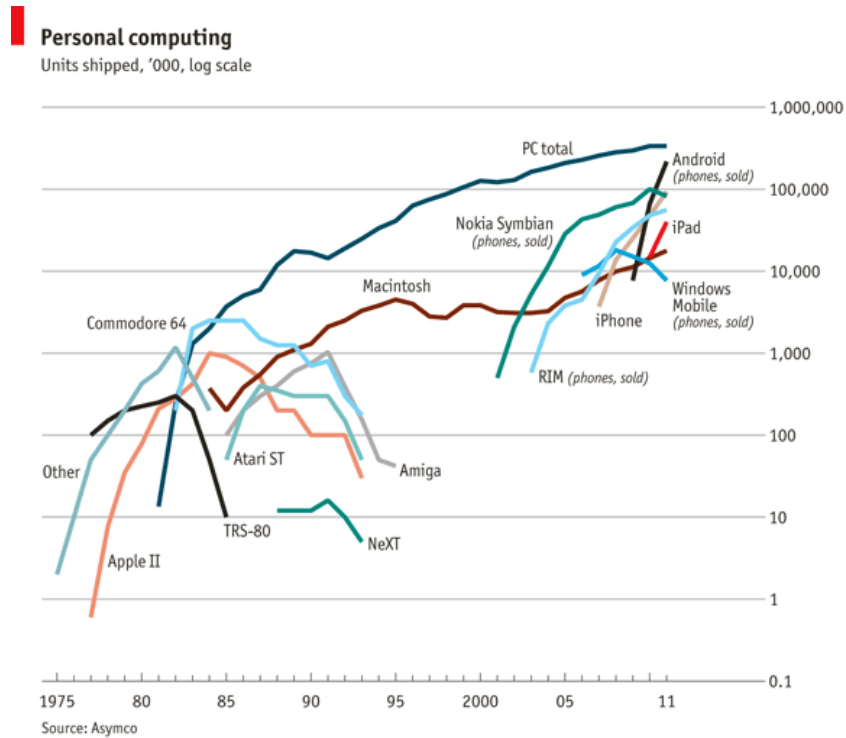
Structure of a smartphone Android



Operating Systems evolution



Managers' view

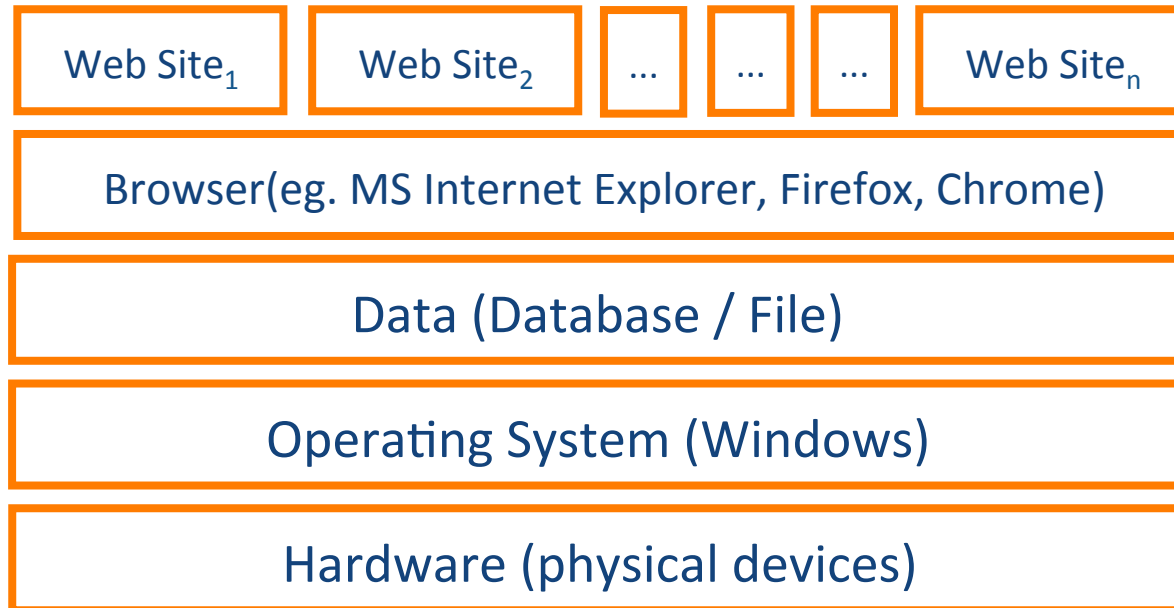


THE ROOTS OF DIGITAL INNOVATION

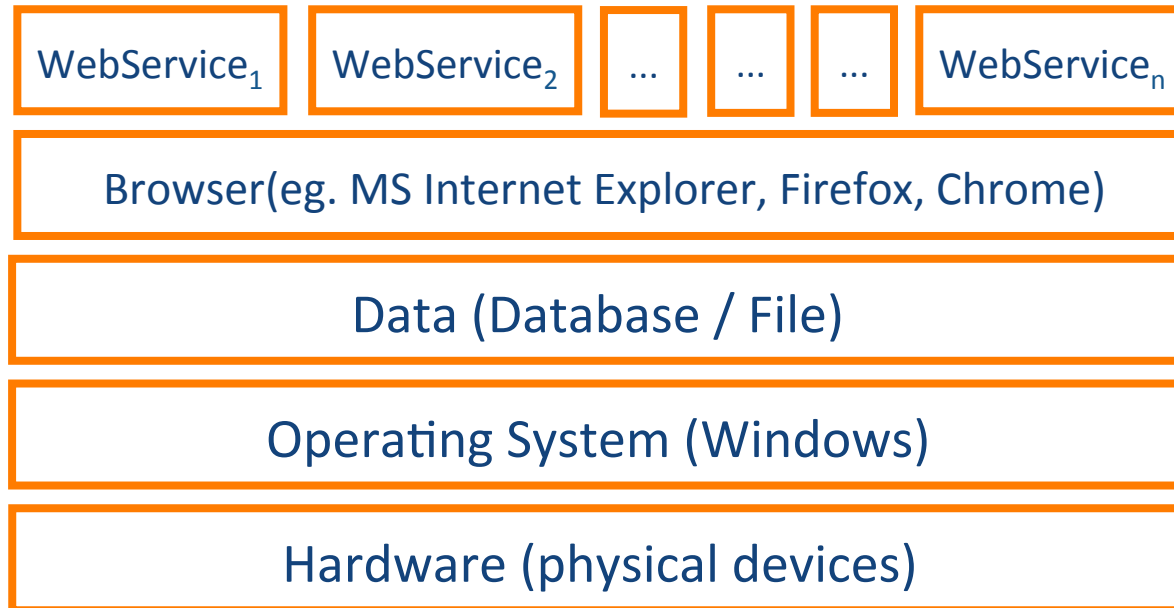
what is Internet,
as I see it from my computer?

WHAT EXACTLY IS “IT”?

Structure of a PC “using Internet”(2000)



Structure of a PC “using Internet”(2000)



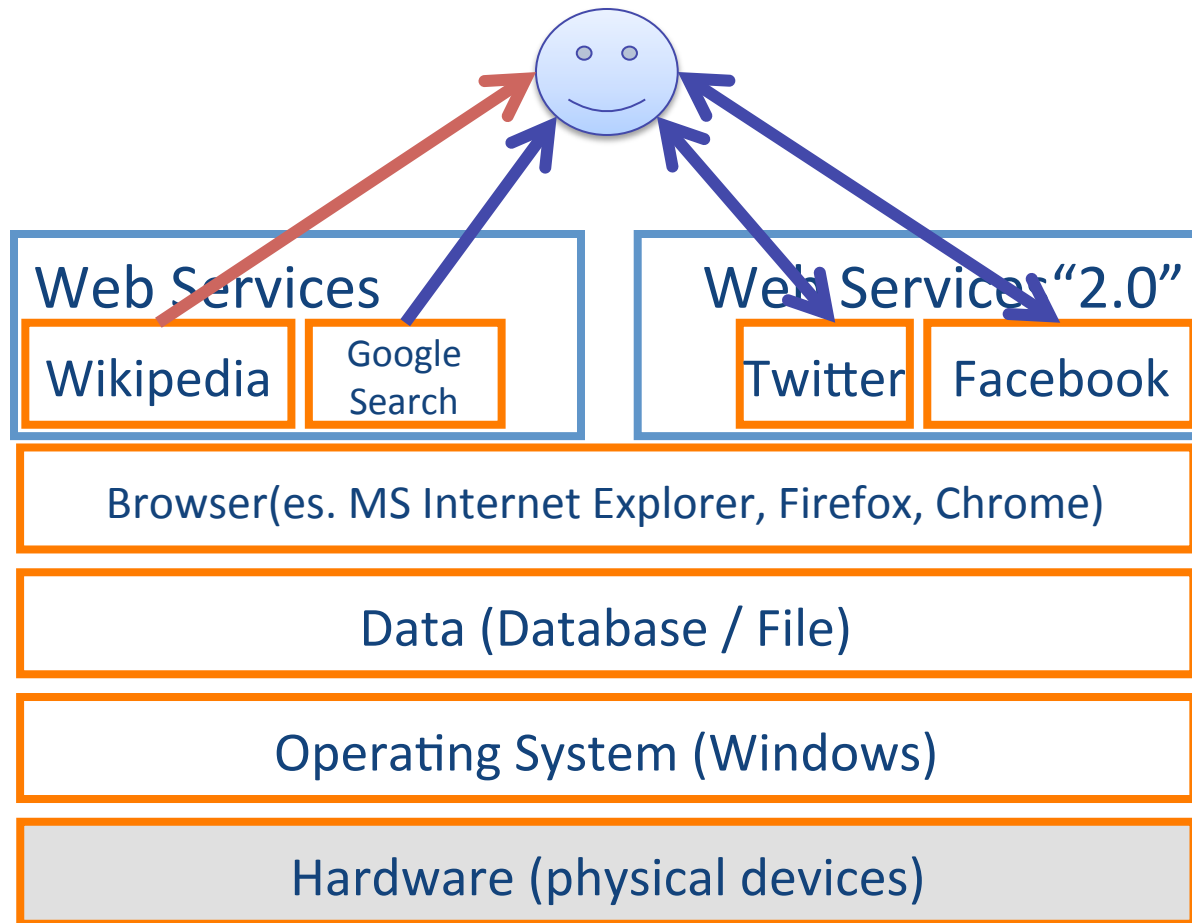
what is web 2.0,
as I see it from my computer?

WHAT EXACTLY IS “IT”?

From Web to Web 2.0: what changes

- Web
 - The user can **search** information
- Web 2.0
 - The user can **create** and **share** information

Structure of a PC “using Internet” (2013)

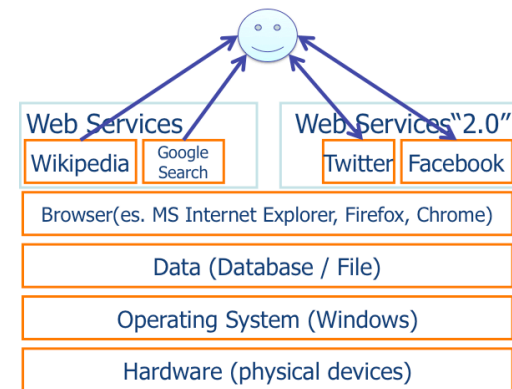


what is internet (simplified)

WHAT EXACTLY IS “IT”?

Defining Internet

- This is just **a** possible, simplified representation of Internet, or, more precisely, of the architecture of a computer connected to the Internet

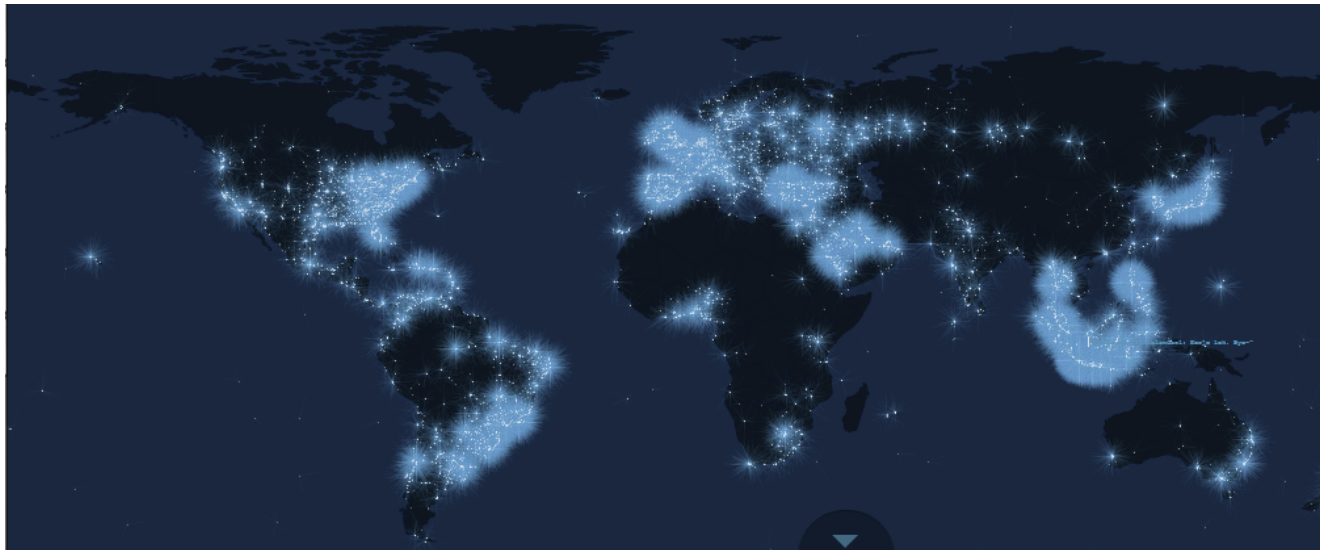


- **What is the Internet, then?**

Internet = ?

- From an etymological point of view
 - “Inter” = *between*
 - “Net” = A piece of open-meshed material made of twine, cord, or something similar, used typically for catching fish or other animals (Oxford Dictionary)
- a set of ***nodes*** ***interconnected***
- Internet = metaphor to describe a set of sets of nodes interconnected
- In this metaphor, what corresponds to the nodes?

**The Internet /2 =
Information exchanged exploiting the physical infrastructure
(Internet /1)**



<http://www.tweetping.net/>

The Internet /3 = Internet users

Internet users (per 100 people)

[DATABANK](#) [DOWNLOAD DATA](#) [SHARE](#)

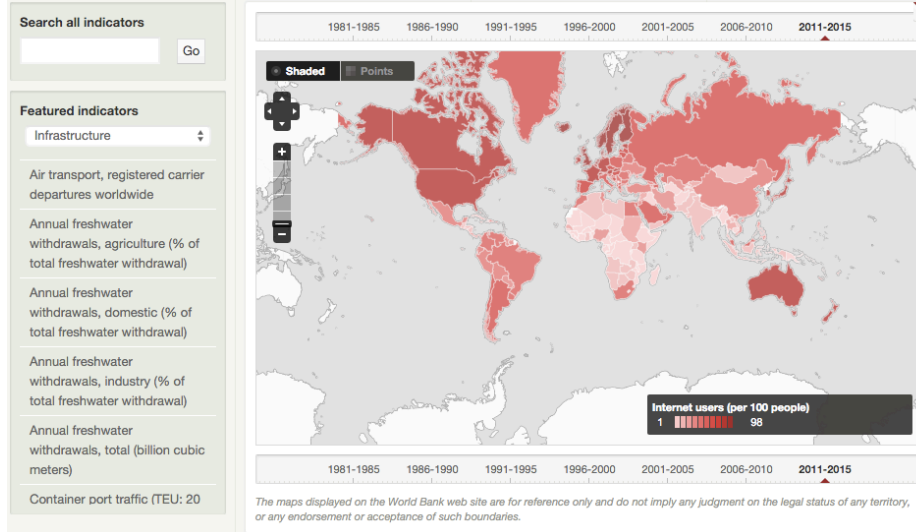
Internet users are individuals who have used the Internet (from any location) in the last 12 months. Internet can be used via a computer, mobile phone, personal digital assistant, games machine, digital TV etc.

International Telecommunication Union, World Telecommunication/ICT Development Report and database, and World Bank estimates.

License Open

Catalog Sources World Development Indicators

[TABLE](#) [MAP](#) [GRAPH](#) [METADATA](#)



Featured indicators

Infrastructure

Air transport, registered carrier departures worldwide

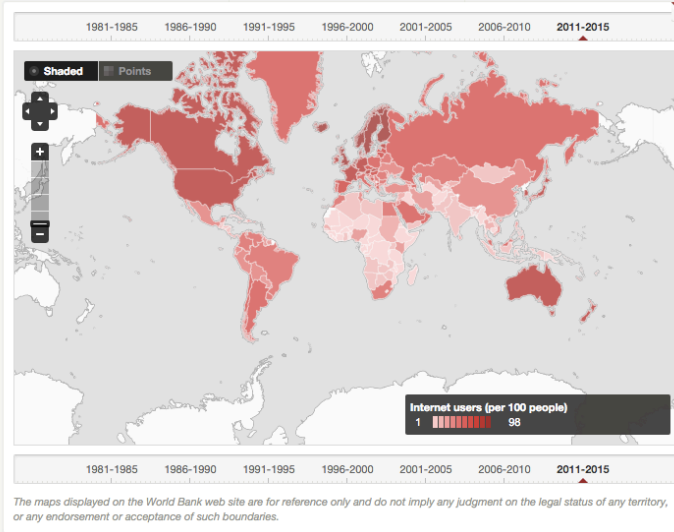
Annual freshwater withdrawals, agriculture (% of total freshwater withdrawal)

Annual freshwater withdrawals, domestic (% of total freshwater withdrawal)

Annual freshwater withdrawals, industry (% of total freshwater withdrawal)

Annual freshwater withdrawals, total (billion cubic meters)

Container port traffic (TEU): 20



The Internet /3 = Internet users



The Internet /3 = Internet users

THE NEXT BILLION INTERNET USERS:

What Will They Look Like?



Since 2006, the number of Internet users
has more than doubled.

DIIM&T 2016-17 - Samuele Astuti

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The Internet = Internet users?

THE NEXT BILLION INTERNET USERS:
What Will They Look Like?

9

Management - Area
Innovative Subjects

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The Internet =
Information exchanged on the Internet?

<http://www.tweetping.net/>

10

Management - Area
Innovative Subjects

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The Internet = devices and cables and wireless systems?

<http://www.submarinecablemap.com/>

11

Management - Area
Innovative Subjects

Architecture of the Internet

People

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The Internet = Internet users?



THE NEXT BILLION INTERNET USERS:
What Will They Look Like?



Management - Area
m.p.s. - s.p.a. / s.p.a.

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Applications

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The Internet = Information exchanged on the Internet?



<http://www.tweetping.net/>

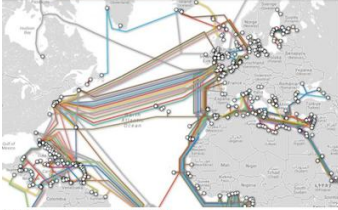
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Physical infrastructure

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The Internet = devices and cables and wireless systems?



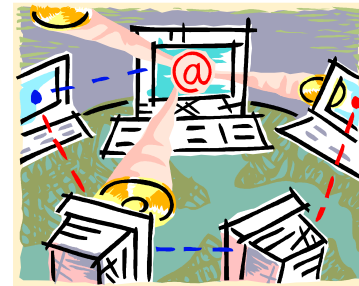
<http://www.submarinecablemap.com/>

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Internet

- the Internet: An infrastructure upon which many services (App layer) are delivered to individuals (*People layer*)
- Physical infrastructure layer:
 - The worldwide, publicly accessible system of interconnected computer networks that transmit data by packet switching using the standard Internet Protocol
- Application/messages layer
 - When using the app called Browser
 - the Web (Internet ≠ the Web!)
- People interaction layer



Characteristics of Internet -1

- Distributed ownership: Different portions of the Internet are owned by different entities
- Multiplicity of devices: The Internet consists of millions of smaller digital networks, a collection of digital devices (nodes)

Characteristics of the Internet -2

- Open standards: The agreed upon set of rules or conventions governing communication among Internet nodes are freely available to everyone
- The Internet is rapidly evolving.
 - Network and grid computing
 - Wired and wireless connections of a range of intelligent devices

What the hype cycle teaches us about Digital innovation

- IT (Digital Technology) is
 - “innovative”
 - a large set of opportunities
 - a field highly subject to hype
 - a technology
 - a risky investment

