Topic 1.1:
A quality framework for digital resources: theory, requirements, development, management and evaluation

DIGITAL RESOURCES FOR TOURISM: CHANNELS, QUALITY, CO-CREATION, AND COLLABORATION

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UNIVERSITÀ DI MACERATA
l'umanesimo che innova

Sub-topics

«A quality framework for digital resources: theory, requirements, development, management»

- *Onlife: being human in a in a Hyperconnected Era*
- What does it mean «digital information»?
- Information, data, metadata
- The *Net*: origins, technologies, versions, tendencies (Web 2.0, Semantic Web, Cloud services, Web of things)
- What is «the best quality» for digital resources?

Onlife

In 2013, a group of scholars invited by the European Commission *Onlife Initiative* released the **Onlife Manifesto: Concept Reengineering for rethinking societal concerns in the digital transition.** The speakers from the academic, non-governmental, business and policy-making organisations.

In 2015 Luciano Floridi, University of Oxford, edited the book **The Onlife Manifesto: Being Human in a Hyperconnected Era** (https://link.springer.com/book/10.1007%2F978-3-319-04093-6). This Open Access book collects the work of the *Onlife Initiative*. It explores how the development and widespread use of ICTs have a radical impact on the human condition.

The neologism *Onlife* refers to the **new experience of a hyperconnected reality within which it is no longer sensible to ask whether one may be online or offline.**

Onlife

The challenges brought by the new digital technologies regard the **impact that ICTs are having on human life**, and hence "how one may re-engineer key concepts—such as attention, ownership, privacy, and responsibility—that are essential in order to **gain the relevant and adequate framework within which our onlife experience may be understood and improved**".

ICTs are not mere tools but rather environmental forces that are increasingly affecting:

1. our self-conception (who we are);
2. our mutual interactions (how we socialise);
3. our conception of reality (our metaphysics); and
4. our interactions with reality (our agency).

Onlife

The impact exercised by ICTs is due to at least **four major transformations**:

a. the blurring of the **distinction between reality and virtuality**;

b. the blurring of the **distinction between human, machine and nature**;

c. the reversal **from information scarcity to information abundance**; and

d. the shift **from the primacy of stand-alone things, properties, and binary relations**, to the **primacy of interactions, processes and networks**.

In few words: adopting ICTs requests for a special attention to the renewed human context where we live in, and the touristic experiences we plan to promote should be well presented: real or virtual? Stand-alone “things” or interactions?

The digital divide

The **digital divide** refers to **the gap** between **those who benefit from the Digital Age** and **those who do not**.

People **without access** to the Internet (or **capability to use** Internet content and services) are put at a socio-economic disadvantage, as they are unable or less able to obtain digital information, shop online, participate democratically, or learn and offer skills. In Italy 82% of the population are active Internet users, a higher percentage than 59% average in the world, but we have to consider also that 18% (10M people).

Let's discuss together these two concepts:

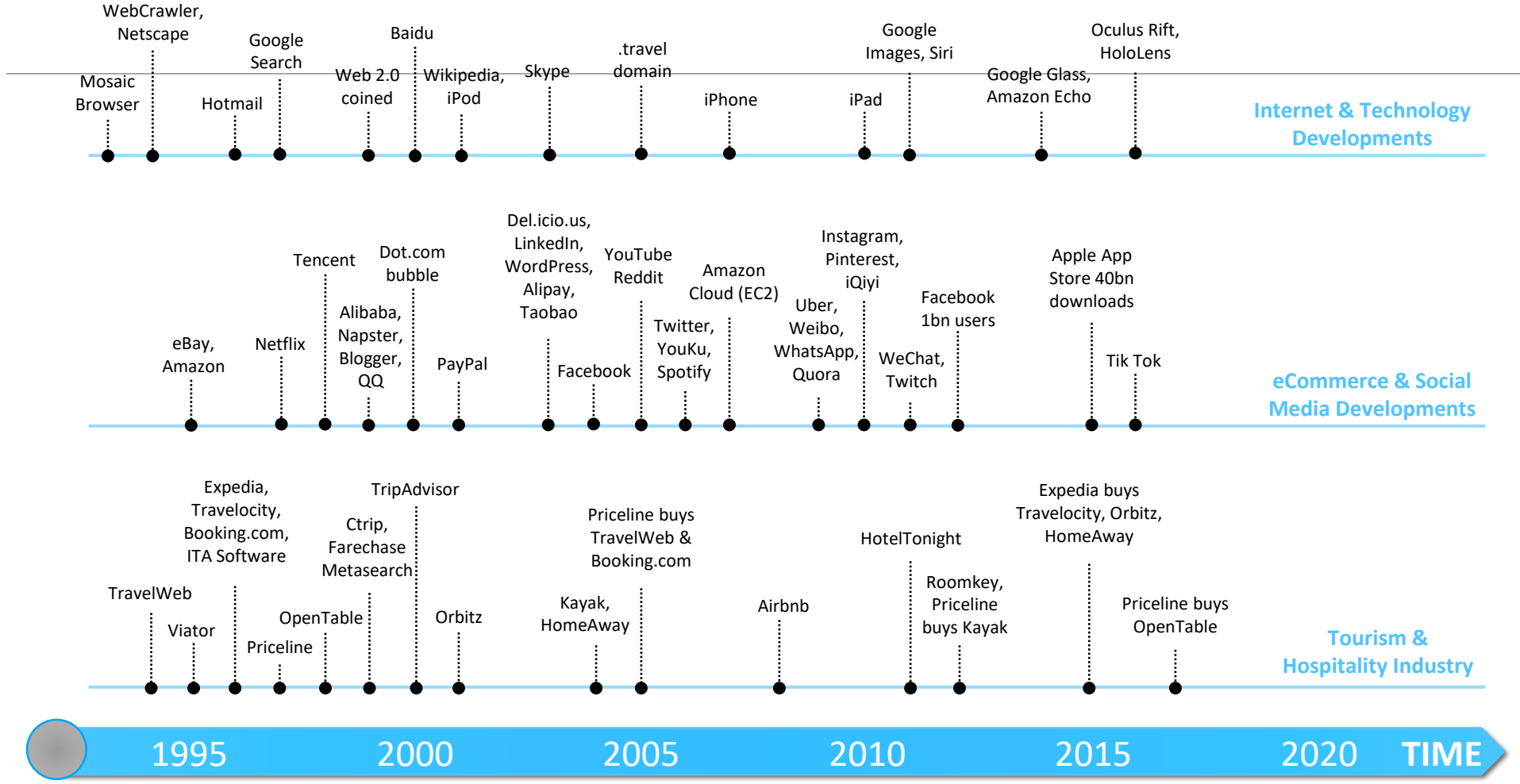
- Onlife
- Digital divide

How do I live my *Onlife*?

Let's discuss our perception and our openness about digital innovation.

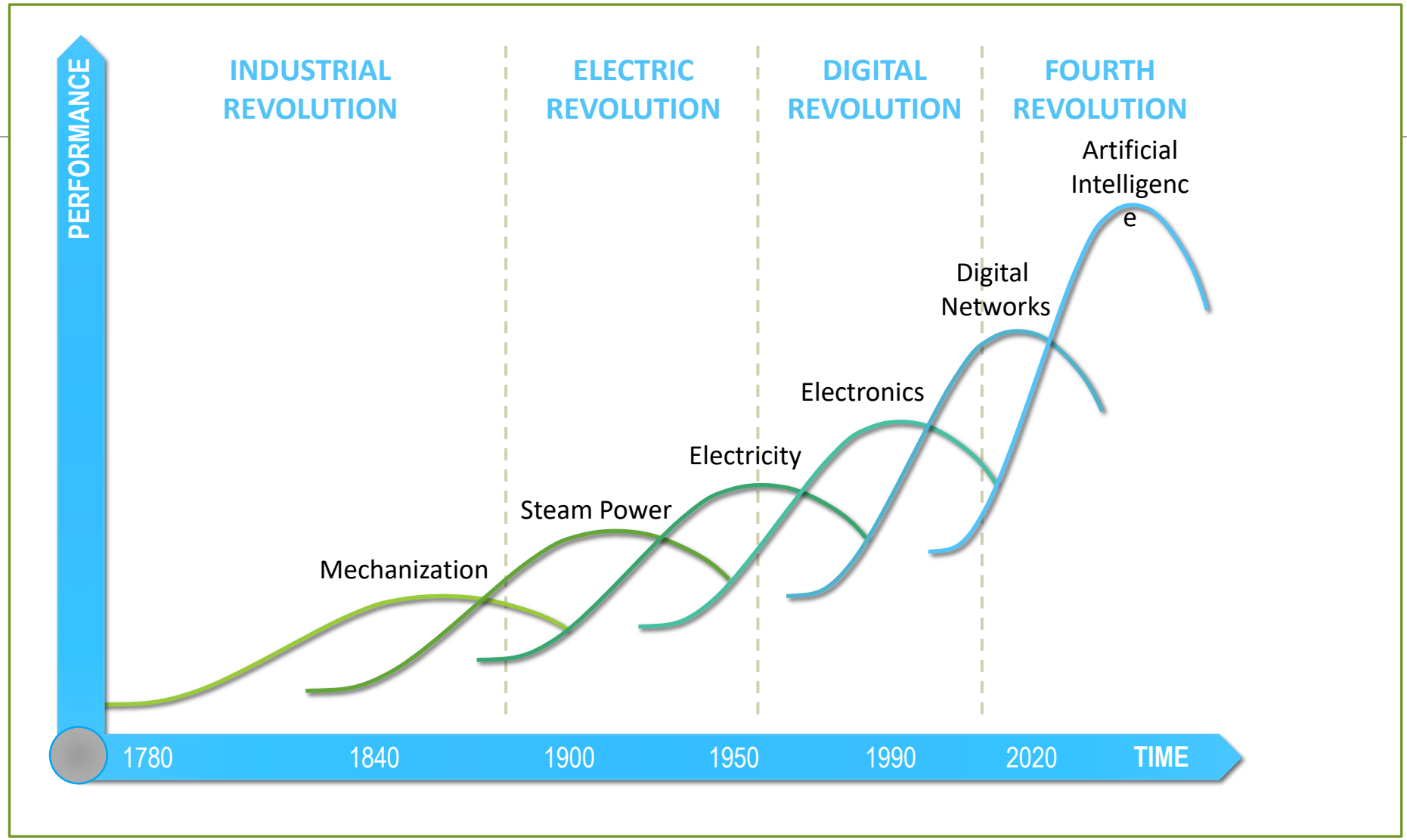
- What about our daily use of ICTs? How long? How deeply?
- What ICTs services do I usually adopt?
- Do I experiment with innovative ICTs?
- What do you feel to be? Innovator, Early adopter, Late majority or a Laggard?
- Quote 2-3 Artificial Intelligence diffused tools

Important Developments on the Internet



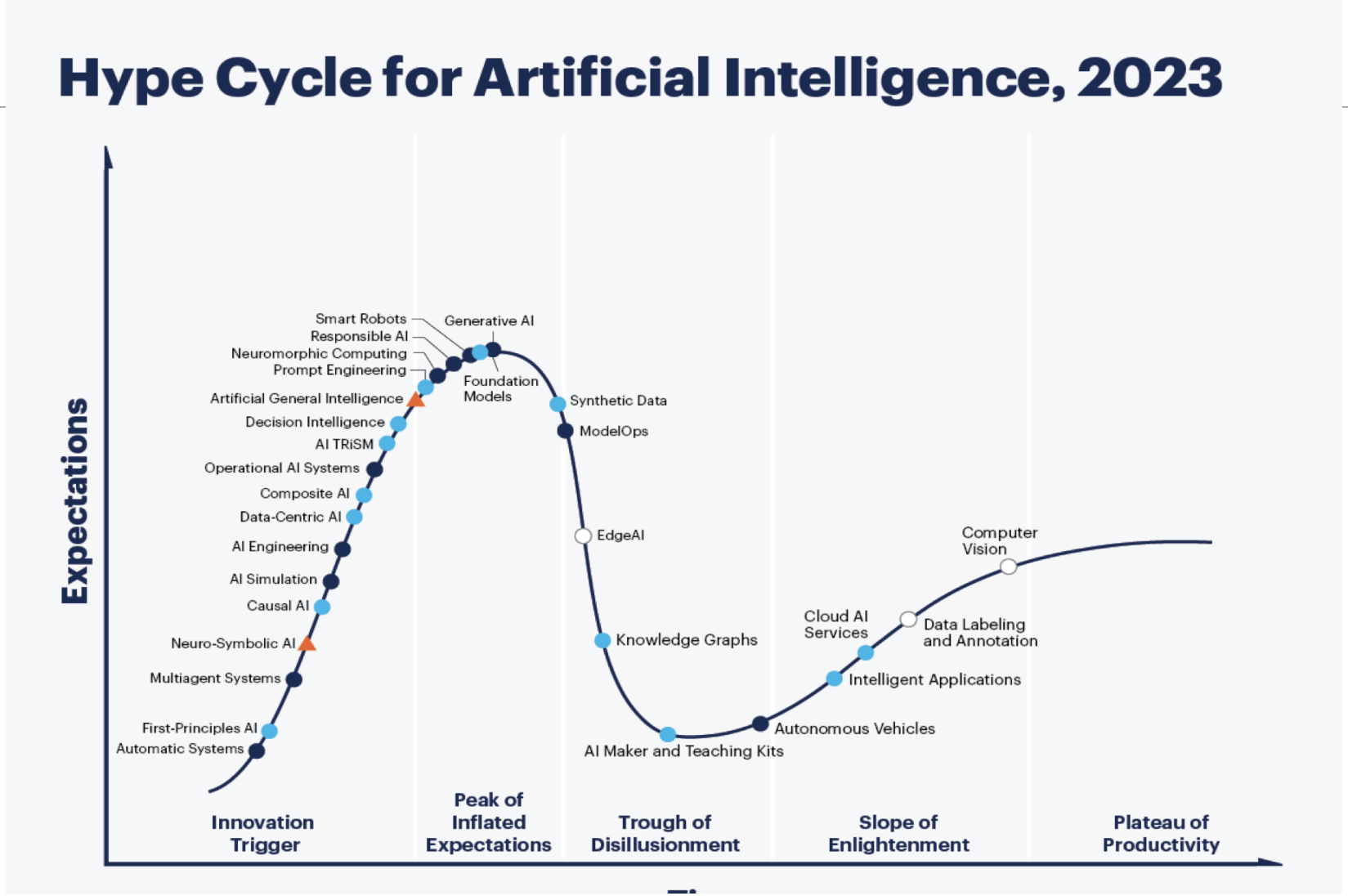
Adapted from Xiang et al, 2015

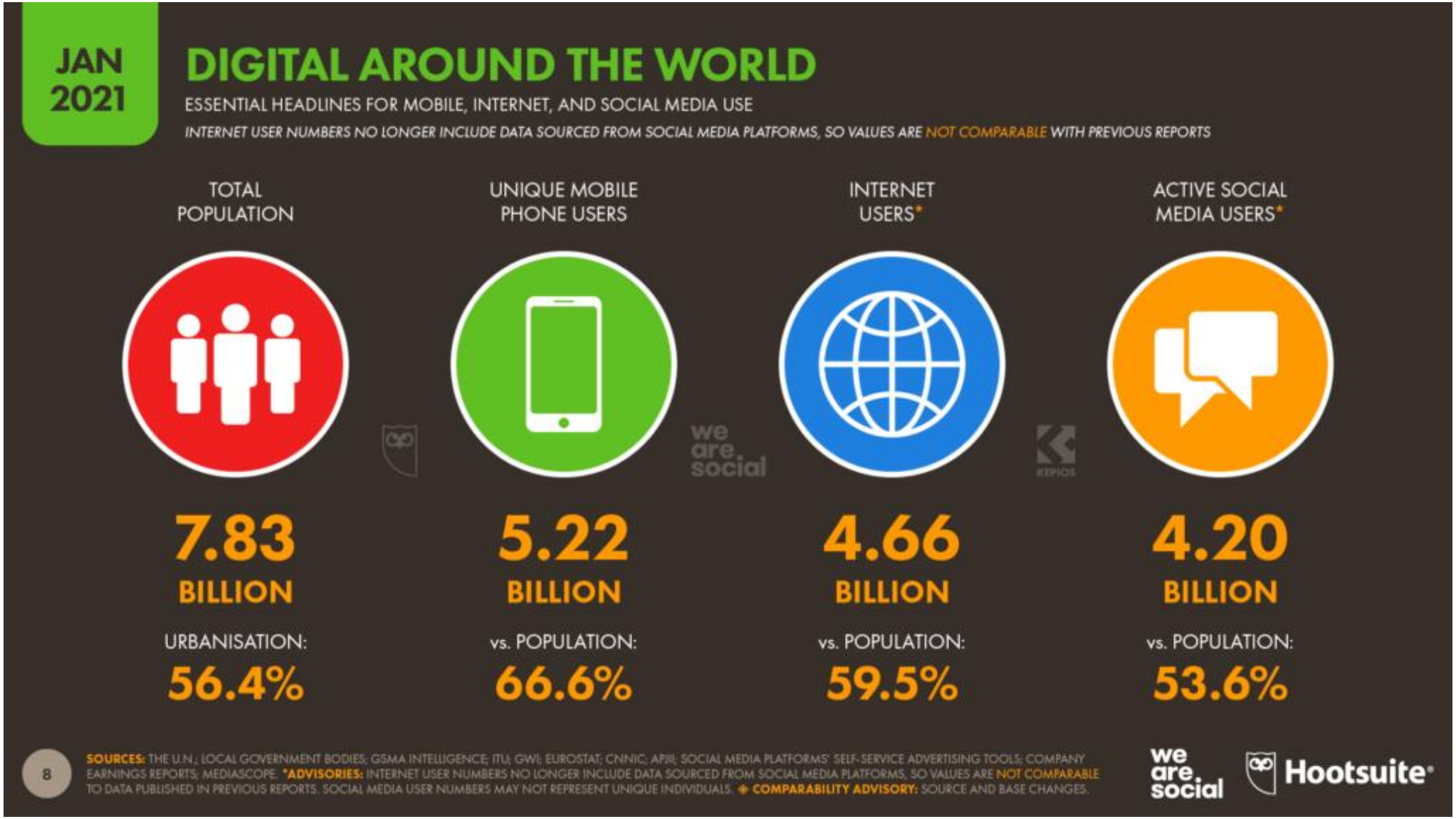
Waves of ICT adoption



Source: Schumpeter (1934), Perez (2002)

The development of AI




JAN 2021
DIGITAL AROUND THE WORLD
ESSENTIAL HEADLINES FOR MOBILE, INTERNET, AND SOCIAL MEDIA USE
INTERNET USER NUMBERS NO LONGER INCLUDE DATA SOURCED FROM SOCIAL MEDIA PLATFORMS, SO VALUES ARE NOT COMPARABLE WITH PREVIOUS REPORTS
TOTAL POPULATION
UNIQUE MOBILE PHONE USERS
INTERNET USERS*
ACTIVE SOCIAL MEDIA USERS*
7.83 BILLION
5.22 BILLION
4.66 BILLION
4.20 BILLION
URBANISATION:
56.4%
vs. POPULATION:
66.6%
vs. POPULATION:
59.5%
vs. POPULATION:
53.6%
we are social
KEPIOS
8
SOURCES: THE U.N.; LOCAL GOVERNMENT BODIES; GSMA INTELLIGENCE; ITU; GWI; EUROSTAT; CNNIC; APJII; SOCIAL MEDIA PLATFORMS' SELF-SERVICE ADVERTISING TOOLS; COMPANY EARNINGS REPORTS; MEDIASCOPE. *ADVISORIES: INTERNET USER NUMBERS NO LONGER INCLUDE DATA SOURCED FROM SOCIAL MEDIA PLATFORMS, SO VALUES ARE NOT COMPARABLE TO DATA PUBLISHED IN PREVIOUS REPORTS. SOCIAL MEDIA USER NUMBERS MAY NOT REPRESENT UNIQUE INDIVIDUALS. ◈ COMPARABILITY ADVISORY: SOURCE AND BASE CHANGES.
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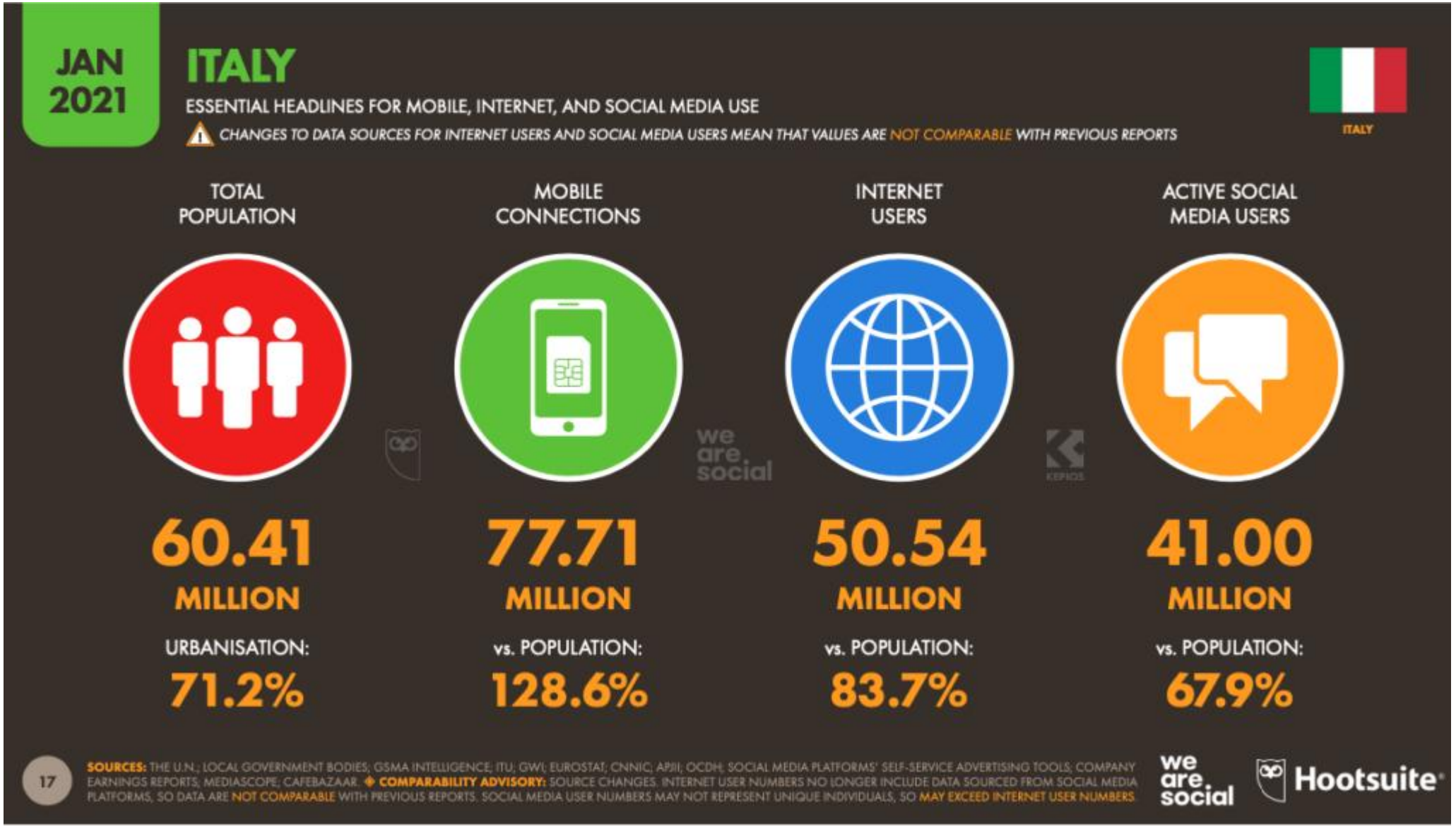
JAN 2021
ITALY
ESSENTIAL HEADLINES FOR MOBILE, INTERNET, AND SOCIAL MEDIA USE
CHANGES TO DATA SOURCES FOR INTERNET USERS AND SOCIAL MEDIA USERS MEAN THAT VALUES ARE NOT COMPARABLE WITH PREVIOUS REPORTS
ITALY
TOTAL POPULATION
MOBILE CONNECTIONS
INTERNET USERS
ACTIVE SOCIAL MEDIA USERS
60.41 MILLION
77.71 MILLION
50.54 MILLION
41.00 MILLION
URBANISATION:
71.2%
vs. POPULATION:
128.6%
vs. POPULATION:
83.7%
vs. POPULATION:
67.9%
17
SOURCES: THE U.N.; LOCAL GOVERNMENT BODIES; GSMA INTELLIGENCE; ITU; GWI; EUROSTAT; CNNIC; APJII; OCDH; SOCIAL MEDIA PLATFORMS' SELF-SERVICE ADVERTISING TOOLS; COMPANY EARNINGS REPORTS; MEDIASCOPE; CAFEBAZAAR. COMPARABILITY ADVISORY: SOURCE CHANGES. INTERNET USER NUMBERS NO LONGER INCLUDE DATA SOURCED FROM SOCIAL MEDIA PLATFORMS, SO DATA ARE NOT COMPARABLE WITH PREVIOUS REPORTS. SOCIAL MEDIA USER NUMBERS MAY NOT REPRESENT UNIQUE INDIVIDUALS, SO MAY EXCEED INTERNET USER NUMBERS.
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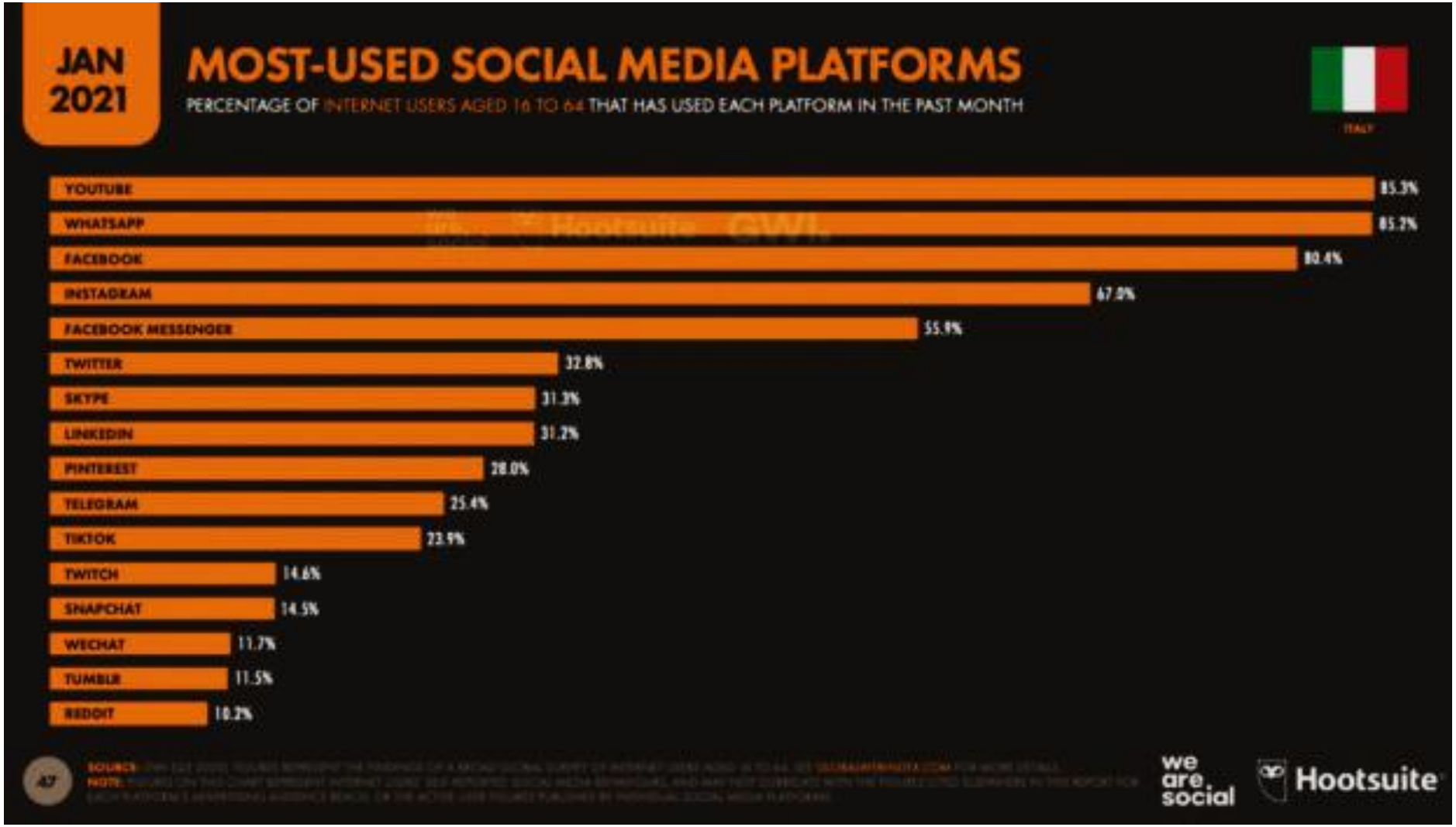
JAN 2021
MOST-USED SOCIAL MEDIA PLATFORMS
PERCENTAGE OF INTERNET USERS AGED 16 TO 64 THAT HAS USED EACH PLATFORM IN THE PAST MONTH
ITALY
YOUTUBE 85.3%
WHATSAPP 85.2%
FACEBOOK 80.4%
INSTAGRAM 67.0%
FACEBOOK MESSENGER 55.9%
TWITTER 32.8%
SKYPE 31.3%
LINKEDIN 31.2%
PINTEREST 28.0%
TELEGRAM 25.4%
TIKTOK 23.9%
TWITCH 14.6%
SNAPCHAT 14.5%
WECHAT 11.7%
TUMBLR 11.5%
REDDIT 10.2%
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JAN 2021

ECOMMERCE PURCHASES BY AGE GROUP

PERCENTAGE OF INTERNET USERS IN EACH AGE GROUP THAT MADE AN ONLINE PURCHASE IN THE PAST MONTH VIA ANY DEVICE

ITALY

SOURCE: GWI (Q3 2020). FIGURES REPRESENT THE FINDINGS OF A BROAD SURVEY OF INTERNET USERS AGED 16 TO 64. SEE GLOBALWEBINDEX.COM FOR MORE DETAILS.

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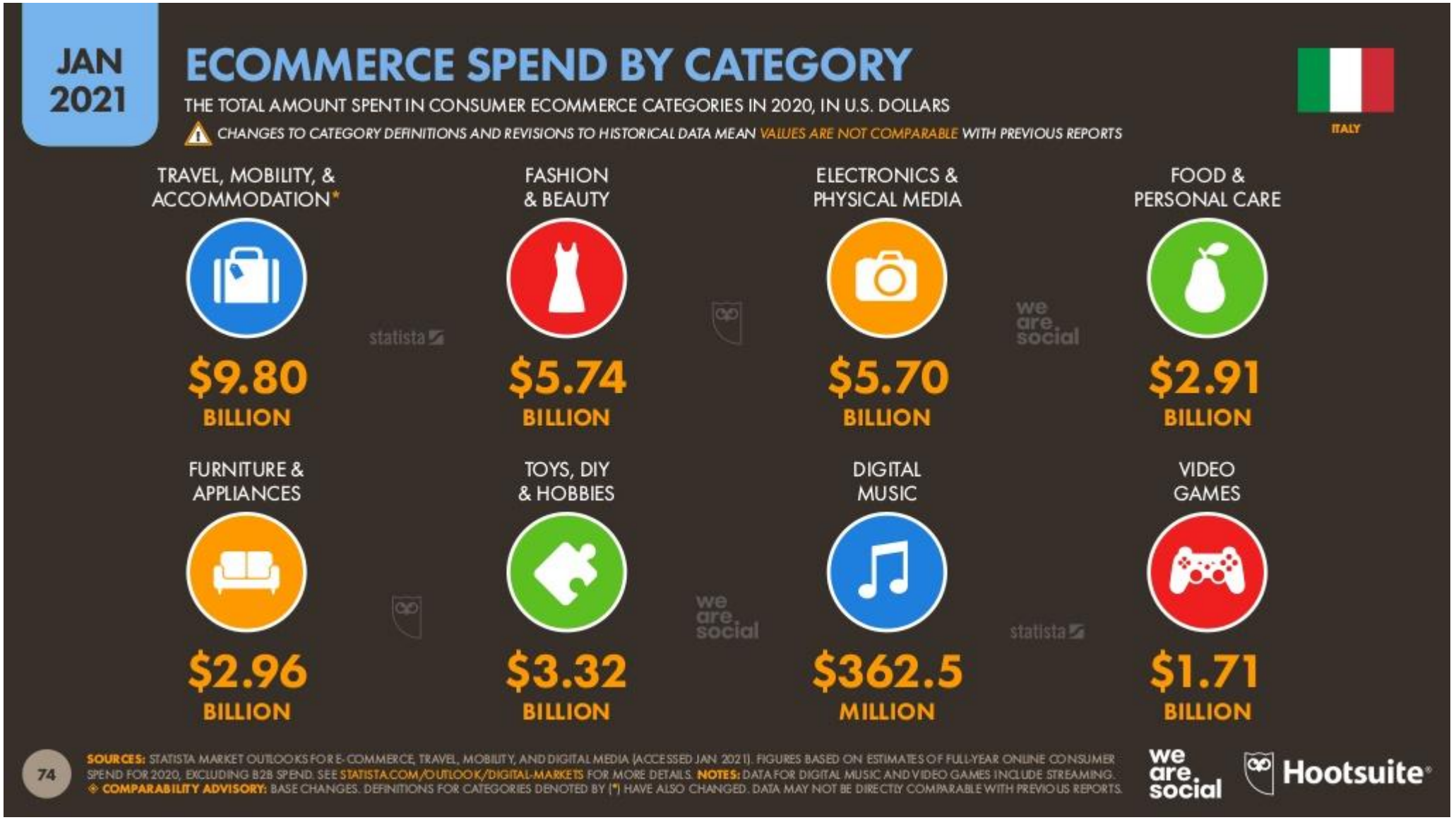

JAN 2021
ECOMMERCE SPEND BY CATEGORY
THE TOTAL AMOUNT SPENT IN CONSUMER ECOMMERCE CATEGORIES IN 2020, IN U.S. DOLLARS
CHANGES TO CATEGORY DEFINITIONS AND REVISIONS TO HISTORICAL DATA MEAN VALUES ARE NOT COMPARABLE WITH PREVIOUS REPORTS
ITALY
TRAVEL, MOBILITY, & ACCOMMODATION*
$9.80 BILLION
FASHION & BEAUTY
$5.74 BILLION
ELECTRONICS & PHYSICAL MEDIA
$5.70 BILLION
FOOD & PERSONAL CARE
$2.91 BILLION
FURNITURE & APPLIANCES
$2.96 BILLION
TOYS, DIY & HOBBIES
$3.32 BILLION
DIGITAL MUSIC
$362.5 MILLION
VIDEO GAMES
$1.71 BILLION
statista
we are social
74
SOURCES: STATISTA MARKET OUTLOOKS FOR E-COMMERCE, TRAVEL, MOBILITY, AND DIGITAL MEDIA (ACCESSED JAN 2021). FIGURES BASED ON ESTIMATES OF FULL-YEAR ONLINE CONSUMER SPEND FOR 2020, EXCLUDING B2B SPEND. SEE STATISTA.COM/OUTLOOK/DIGITAL-MARKETS FOR MORE DETAILS. NOTES: DATA FOR DIGITAL MUSIC AND VIDEO GAMES INCLUDE STREAMING.
◈ COMPARABILITY ADVISORY: BASE CHANGES. DEFINITIONS FOR CATEGORIES DENOTED BY (*) HAVE ALSO CHANGED. DATA MAY NOT BE DIRECTLY COMPARABLE WITH PREVIOUS REPORTS.
we are social
Hootsuite

One step back: what does it mean «digital»?

Digital is **information represented as a string of discrete symbols** each of which can take on **one of only a finite number of values** from some alphabet, such as **letters** or **digits**.

The form of digital data in modern information systems is **binary data**, which is represented by a string of **binary digits (bits)** each of which **can have one of two values, either 0 or 1**.

The word digital comes from the same source as the words **digit** (number) and **digitus** (the Latin word for finger).

Digital data can be contrasted with **analog data**, which is represented by **a value from a continuous range of real numbers**. Analog data is **transmitted by an analog signal**, which not only takes on **continuous values**, but **can vary continuously with time**. An example is the air pressure variation in a sound wave.

The origins of WWW

The **World Wide Web (WWW)**, commonly known as **the Web** or **the Net**, is an information system where documents and other web resources are identified by **Uniform Resource Locators** (URLs, such as https://example.com/file.html), which may be interlinked by hyperlinks, and are accessible over the Internet by users by a software application called a **web browser**, and are published by a software application called a **web server**.

The information resources of the Web are transferred via the **Hypertext Transfer Protocol** (HTTP) or secure (HTTPS). The World Wide Web is built on top of the Internet, which pre-dated the Web by over two decades (1970s).

English scientist **Tim Berners-Lee** co-invented the World Wide Web **in 1989** along with Robert Cailliau. He wrote the first web browser in 1990 while employed at CERN, Switzerland. The browser was released outside CERN to other research institutions starting in January 1991, and then to the general public in August 1991.

The Web began to enter everyday use in 1993–1994, when websites for general use started to become available and an open source browser, Mosaic, was released.

The very first Website

Home page of the very first website in History, published by Tim Berners Lee at CERN on 1990, December 20 here: http://info.cern.ch/hypertext/WWW/TheProject.html

The first image **OF THE** Web (1989)

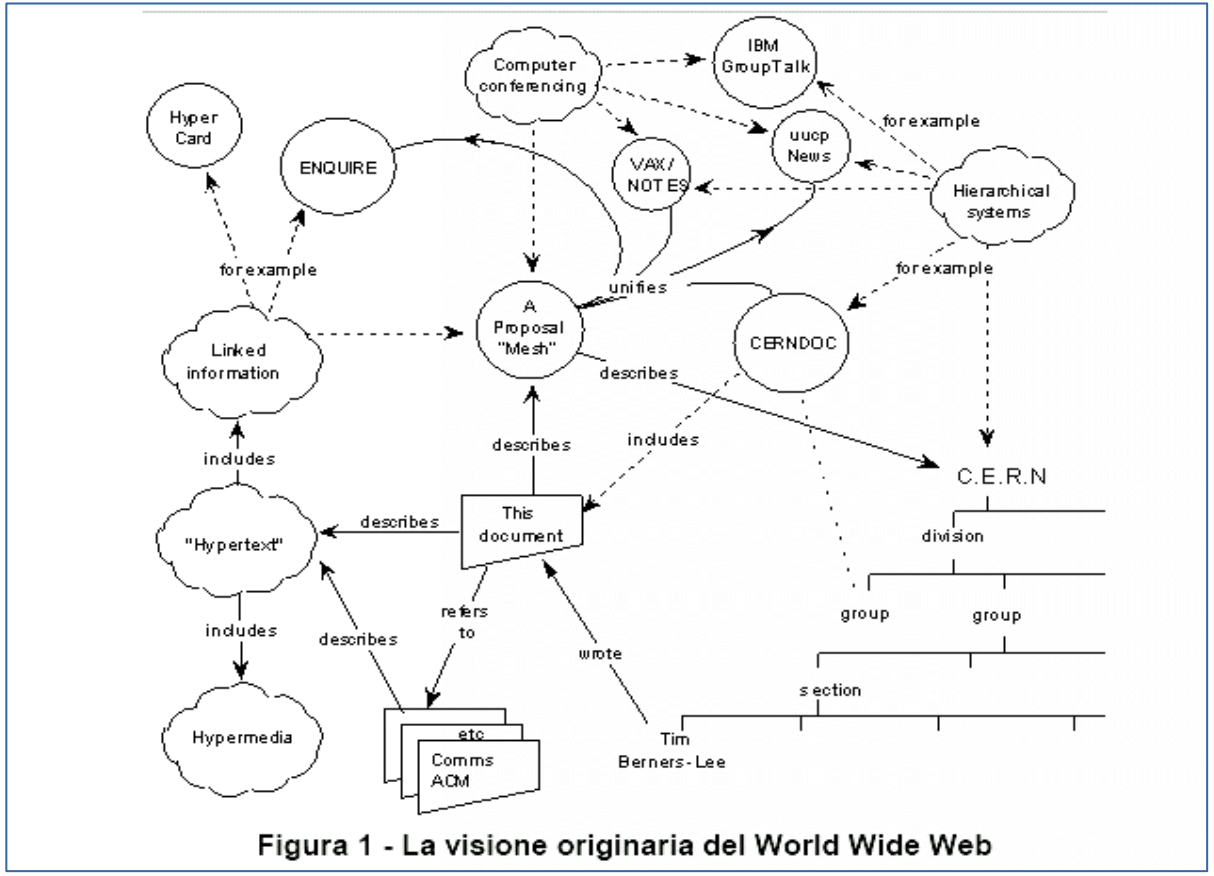
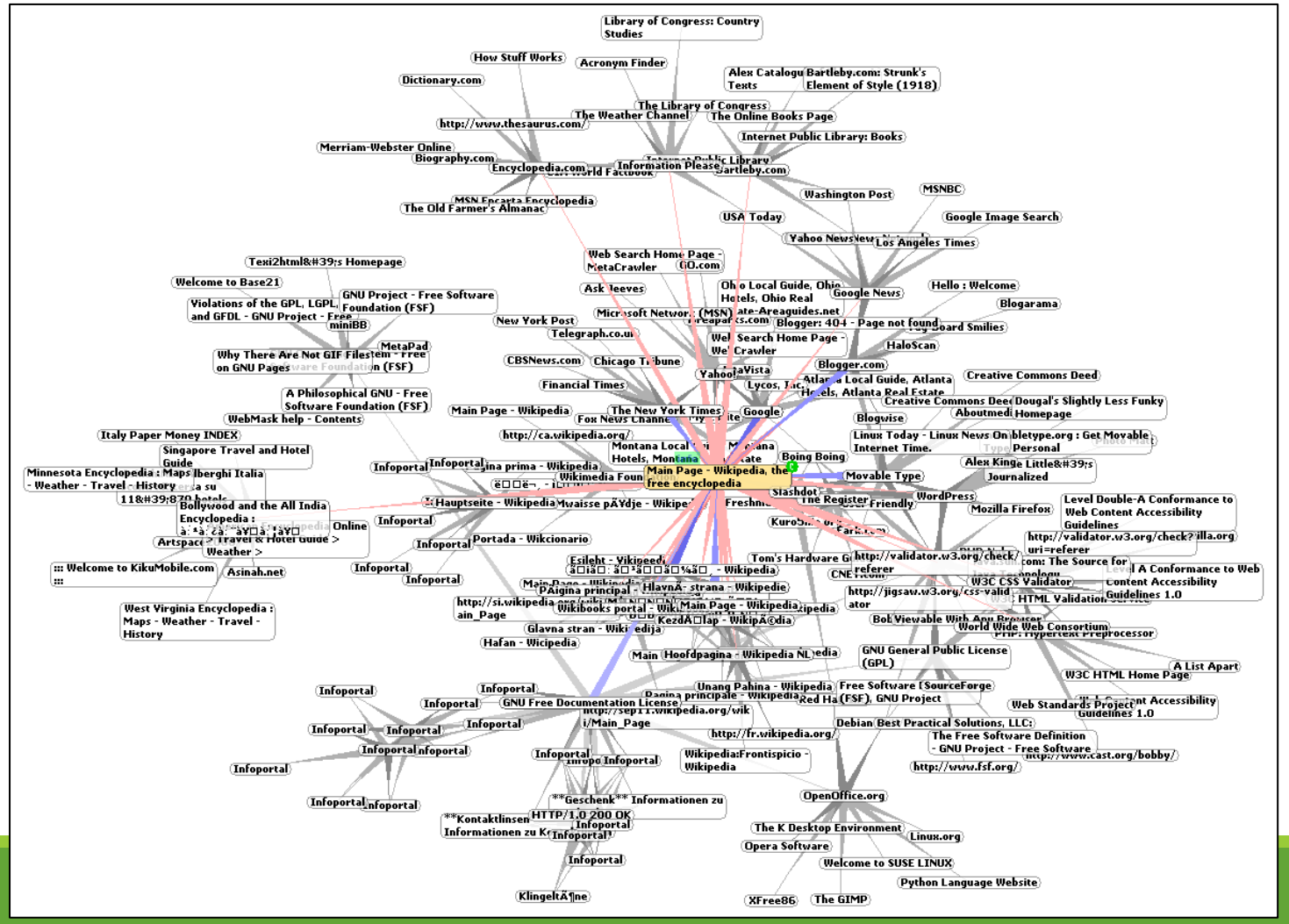


Figura 1 - La visione originaria del World Wide Web

The first image **ON THE** Web (1992)

The WWW as a logical network



The WWW is an **Information Network**, where every website is a sort of island (called *Home*) and every «room» can be connected with infinite other rooms on other islands.

The hyper-connections are **non qualified** and are **mono-directional arrows**

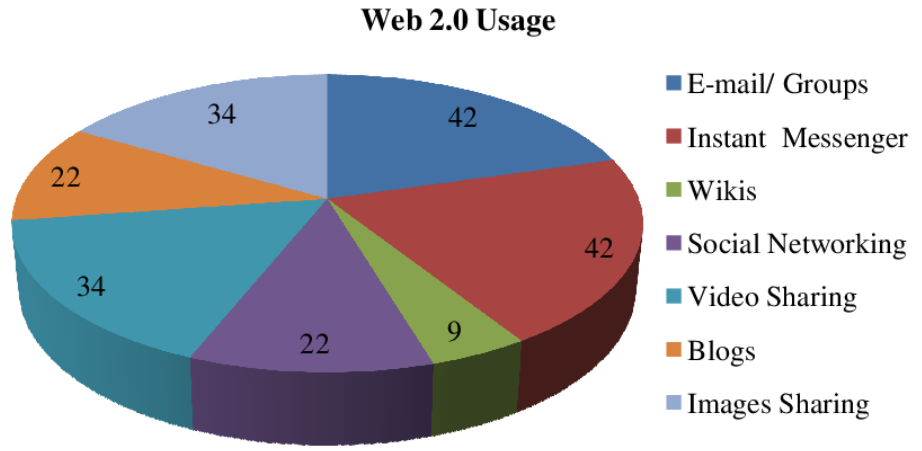
The Web 2.0

Web 2.0 (also known as **participative (or participatory)** web and **social web**) refers to websites that **emphasize user-generated content, ease of use, participatory culture and interoperability** (i.e., compatibility with other products, systems, and devices) for **end users**.

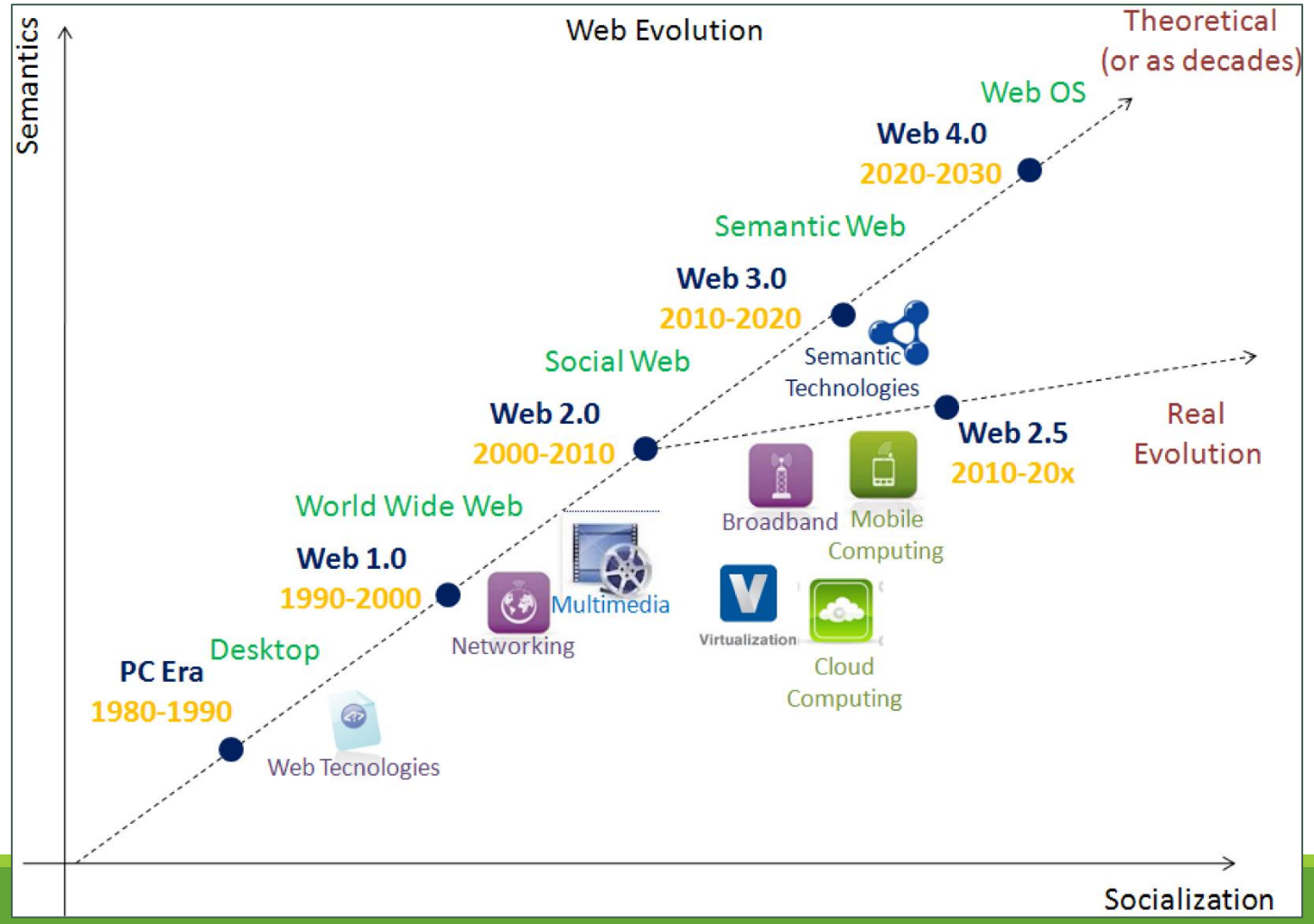
The term was coined **in 1999** and popularized by Tim O'Reilly and Dale Dougherty at the first O'Reilly Media Web 2.0 Conference **in 2004**.

Although the term mimics the numbering of software versions, **it does not denote a formal change in the nature of the World Wide Web**, but merely describes a general **change that occurred as interactive websites proliferated and came to overshadow the older, more static websites of the original Web.**

Web 2.0 Application	*Total*	*Percentage*
E-mail/ Groups	42	100%
Instant Messenger	42	100%
Wikis	9	21.43%
Social Networking	22	52.38%
Video Sharing	34	80.95%
Blogs	22	52.38%
Images Sharing	34	80.95%



Web tendencies



Information, data, metadata

Information: facts or details about somebody/something (produced and comprehensible by humans); *or* An assemblage of data intended for communication either through space or across time (InterPares Glossary).

Information Science: the study of processes for storing and obtaining information

Information technology: the study or use of electronic equipment, especially computers, for storing, accessing, analysing and sending information

Data: n.pl. (datum, n.): information that is stored by a computer *or* facts or information, especially when examined and used to find out things or to make decisions *or* The smallest meaningful units of information

Information, data, metadata

Metadata: information that describes other information in order to help you understand or use it *or* Information that characterizes another information resource, especially for purposes of documenting, describing, preserving or managing that resource.

Metadata could be, according to their nature and function:

- descriptive,
- structural,
- administrative,
- preservation,
- technical…

Metadata are for files like water for humans

The Web 3.0

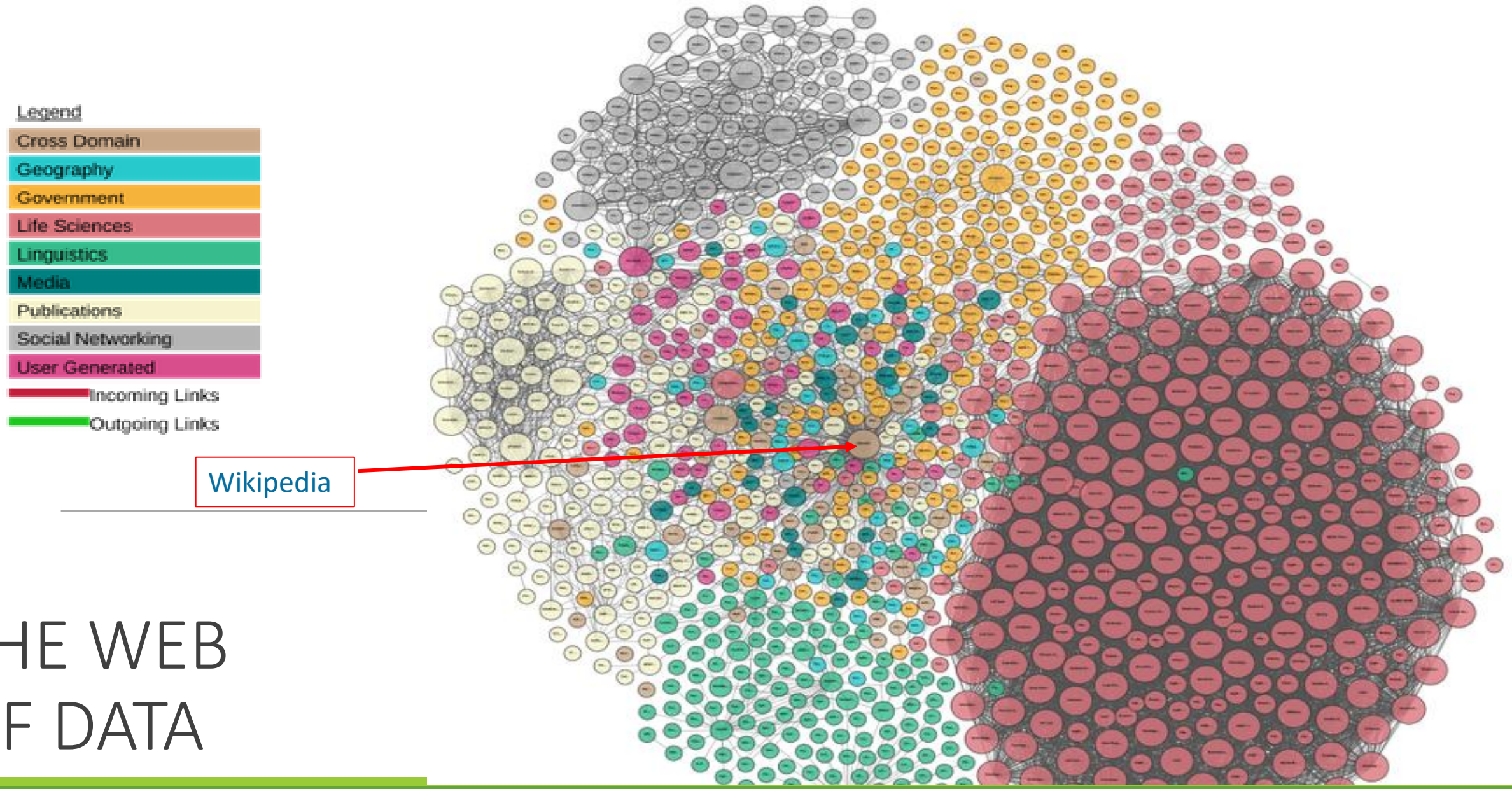
The **Semantic Web**, sometimes known as **Web 3.0**, is an extension of the World Wide Web through standards set by the World Wide Web Consortium (W3C). The goal of the Semantic Web is to **make Internet data machine-readable**.

According to the W3C, "The Semantic Web provides a common framework that allows data to be **shared and reused across application, enterprise, and community boundaries**."

The technologies adopted (Resource Description Framework (RDF) and Web Ontology Language (OWL) are used to formally **represent metadata**. For example, **ontology can describe concepts, relationships between entities, and categories of things**. No more characters and words, but concepts expressed in a processable format for specific software.

The result is the so called **Web of data**, parallel to the **Web of information**, where Web intelligent agents (machines) could understand data, select them better ad exclude absurd combinations and assertions. The big web players are working since years on new search engines with such capabilities.

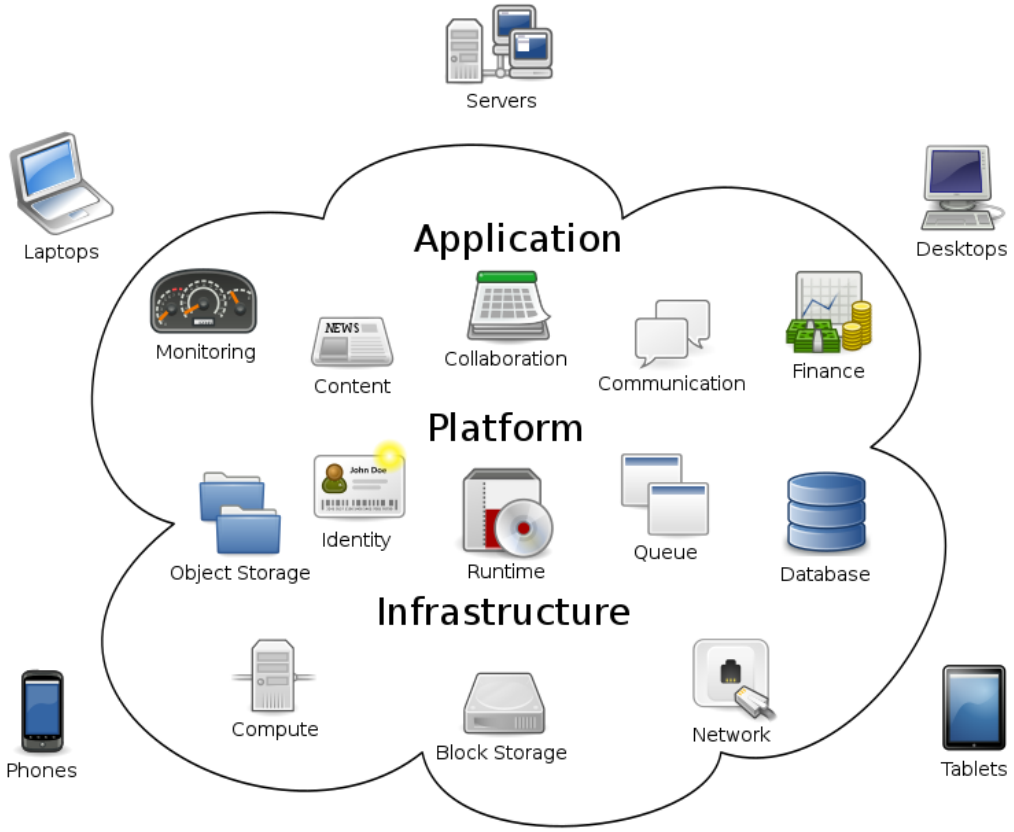
THE WEB OF DATA



Cloud computing

Cloud computing is the **on-demand availability of computer system resources**, especially **data storage** (cloud storage) and **computing power**, without direct active management by the user and out of local devices. Large clouds often have functions distributed over multiple locations, each location being a data center.

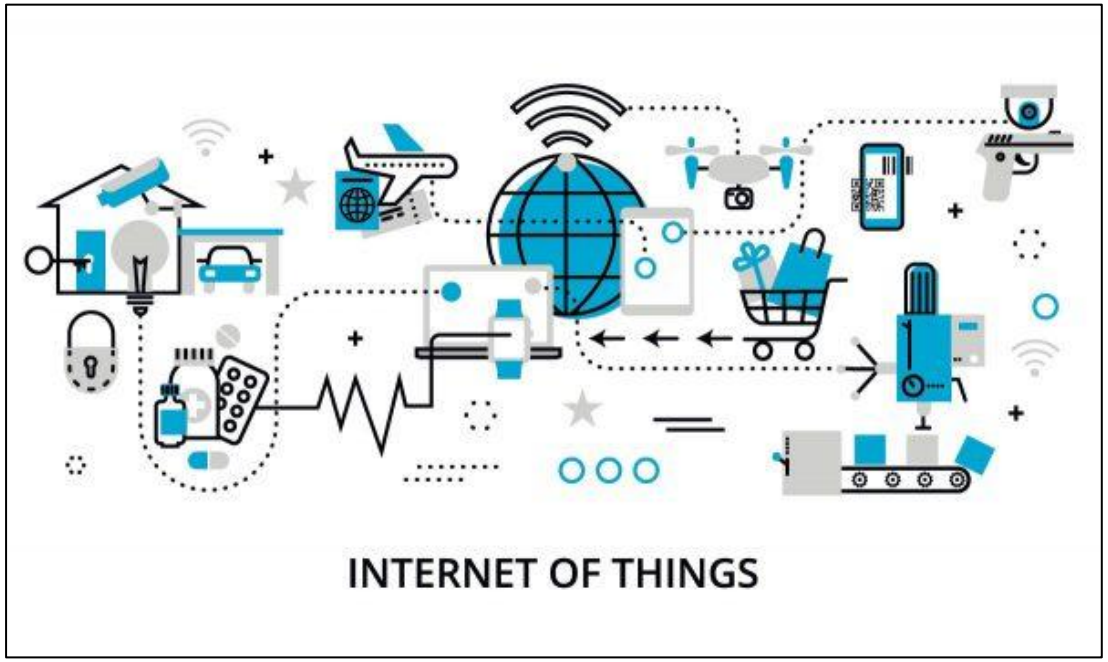
The origins are in the first 2000s, with the release of Amazon Web and Google App services. Now most of companies prefer to adopt Cloud computing instead of maintaining their own server farms.



Web of Things and *Internet of Things*

Web of Things (WoT) describes a set of standards by the World Wide Web Consortium (W3C) for the interoperability of different **Internet of things (IoT)** platforms and application domains. We refer to the digital connection among sensors, servers, softwares, devices.

Someone wrote in 2005 that with IoT 'the offline world is going online'. "The digital transition projects us into a world where nature is pervasively intertwined with sensors, information devices and machines; we thus increasingly experience a reactive and talkative nature, an animated nature, where it becomes more and more difficult to distinguish between what is "given" and what is fabricated". (Onlife Manifesto)



Being aware IN the Net

Let’s discuss our personal perception of the Web, its characters and tendencies, and about digital resources quality:

- How do we usually **access and use** the digital information? What apps, channels, sites, search engines….
- How we **produce and manage our digital resources** (pictures, documents, videos…)? What criteria we adopt, where we store them, how do we search for them, how do we manage them?