بسم الله الرحمن الرحیم

حکمرانی و مدیریت داده‌ها

جلسه ۲

مقدمه‌ای بر حکمرانی و مدیریت داده‌ها

Introduction to Data Governance and Management

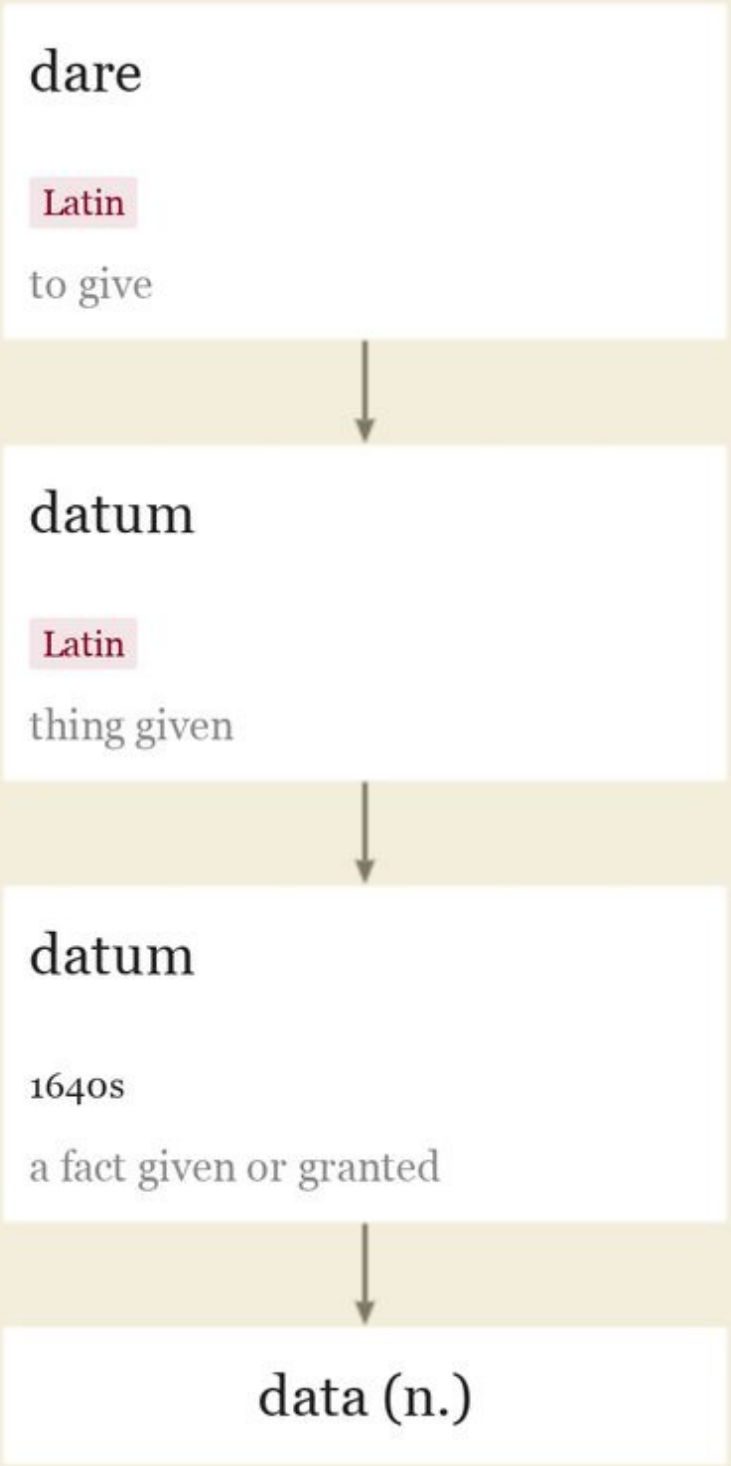
کاظم فولادی قلعه

دانشکده مهندسی، دانشکدگان فارابی

دانشگاه تهران

http://courses.fouladi.ir/datagov

DATA
XX01
XX02
XX03



www.etymonline.com/word/data

GOVERNANCE

governance (n.)

late 14c., *governaunce*, "act or manner of governing," from Old French *governance* "government, rule, administration; (rule of) conduct" (Modern French *gouvernance*), from *governer* "to govern, rule, command" (see **govern**). Fowler (1926) writes that the word "has now the dignity of incipient archaism," but it might continue useful in its original sense as ***government*** tends to mean primarily "the governing power in a state."

govern (v.)

late 13c., "to rule with authority," from Old French *governer* "to steer, be at the helm of; rule, command, direct" (11c., Modern French *gouverner*), from Latin *gubernare* "to direct, rule, guide, govern" (source also of Spanish *gobernar*, Italian *governare*).

This is originally "to steer, to pilot," a nautical borrowing from Greek *kybernan* "to steer or pilot a ship, direct as a pilot," figuratively "to guide, govern" (the root of **cybernetics**). The *-k-* to *-g-* sound shift is perhaps via the medium of Etruscan. The intransitive sense is attested from 1590s. Related: *Governed*; *governing*.

https://www.etymonline.com/search?q=governance

MANAGEMENT
TRAINING
SKILLS
EMOTIONAL
RISK
CONDUCT
MISSION
STRENGTH
TEAM
LEADERSHIP
COMMITMENT
INNOVATION
MOTIVATION
RESPECT
GOAL
TRUST
ABILITY
COMMERCE

manus
Latin
hand
maneggiare
Italian
to handle; to control a horse
manage
1560s
manage (v.)

manage (v.)

1560s, "to handle, train, or direct" (a horse), from the now-obsolete noun *manage* "the handling or training of a horse; horsemanship" (for which see **manege**, which is a modern revival of it), from Old French *manège* "horsemanship," from Italian *maneggio*, from *maneggiare* "to handle, touch," especially "to control a horse," which ultimately from Latin noun *manus* "hand" (from PIE root ***man-** (2) "hand").

The extended sense of "control or direct by administrative ability" any sort of business is by 1570s; the meaning "wield (a tool or object) by hand" is from 1580s.

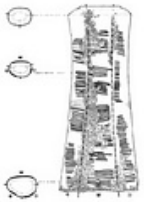
The meaning "effect by effort" (hence "succeed in accomplishing") is by 1732. The intransitive sense of "get by, carry on affairs" is suggested by 1650s, in frequent use from mid-19c. Related: *Managed*; *managing*. ***Managed economy*** was used by 1933.

> *Manage* literally implies handling, and hence primarily belongs to smaller concerns, on which one may at all times keep his hand: as, to *manage* a house; to *manage* a theater. Its essential idea is that of constant attention to details: as, only a combination of great abilities with a genius for industry can *manage* the affairs of an empire. [Century Dictionary]

https://www.etymonline.com/search?q=mangement

تطور داده‌ها

EVOLUTION OF DATA

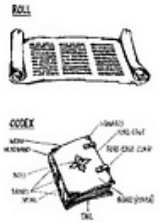


19000 BC: Ishango Bone

3400 BC: Cuneiform writing on Clay tablets

3200 BC: Egyptian Hieroglyphs

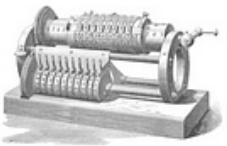
1200 BC: Chinese Oracle Bones



500s-1500s: Manuscripts and Codices medieval Europe

1440s: Johannes Gutenberg's Printing Press

1600s: John Graunt's data analysis

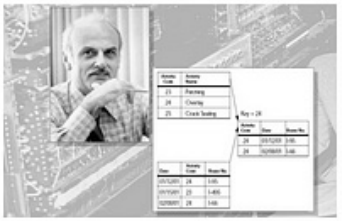


1870s: George Grant's mechanical calculator

1890s: Harman Hollerith's tabulating machine

1900s: Fritz Pfluemer's magnetic tape

1940s: Electronic Computers



1970s: E F Codd's Relational Databases

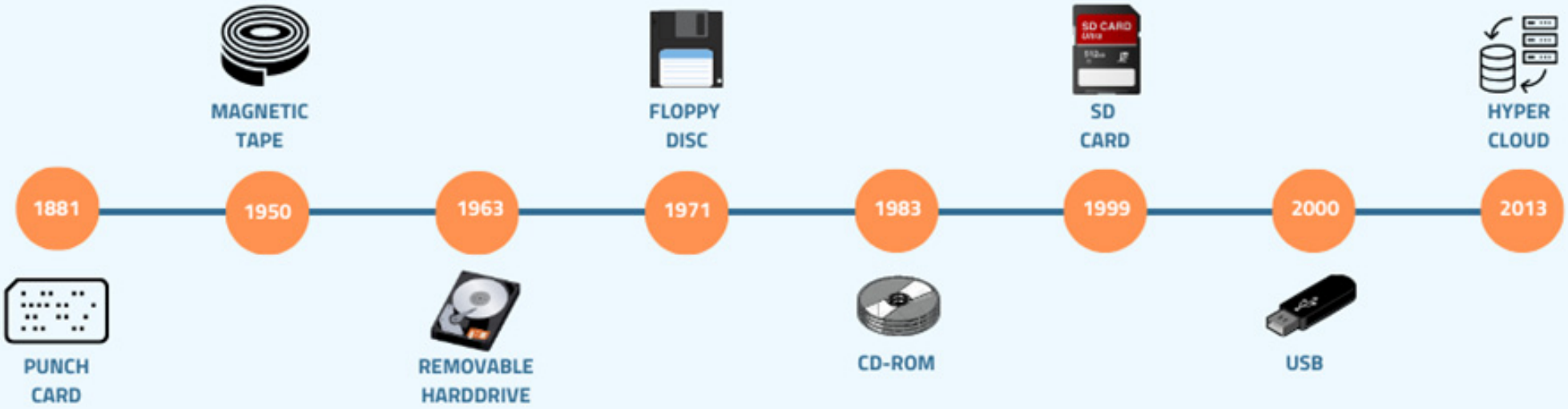
1990s: Tim Berners Lee 's world wide web

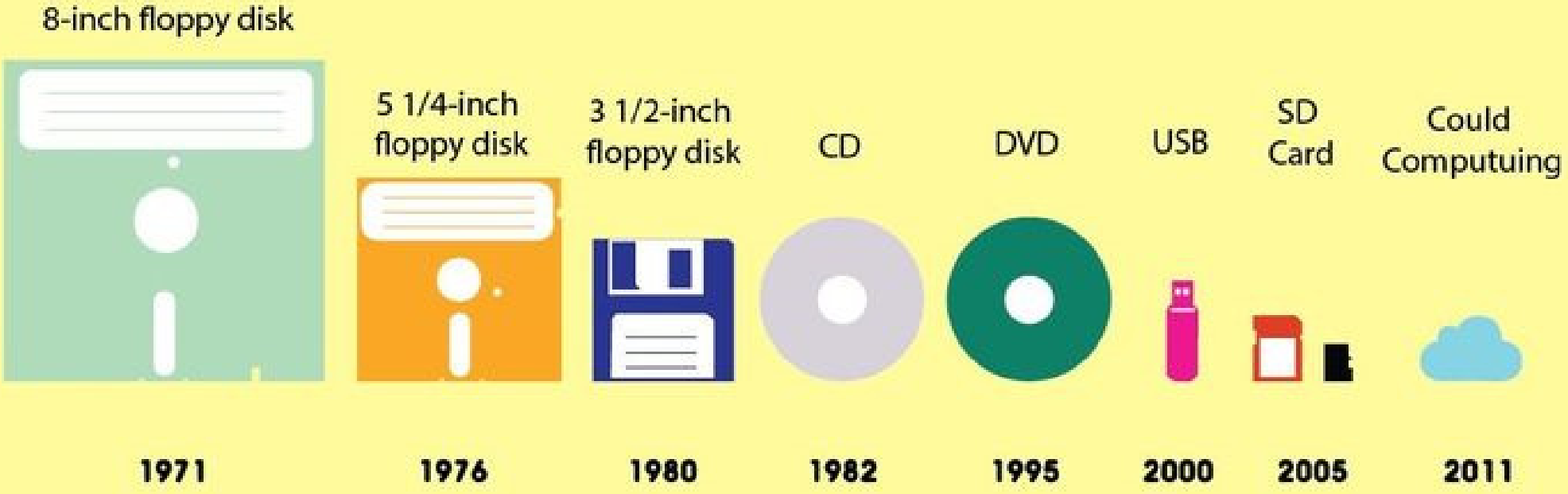
2000s: Big Data and Cloud Computing

2010s: Machine Learning and Artificial Intelligence

2020s: Blockchain and Decentralized Data

https://rathi-ankit.medium.com/a-brief-history-of-data-bc4d9ae475fe


1881
PUNCH CARD
1950
MAGNETIC TAPE
1963
REMOVABLE HARDDRIVE
1971
FLOPPY DISC
1983
CD-ROM
1999
SD CARD
2000
USB
2013
HYPER CLOUD


8-inch floppy disk
5 1/4-inch floppy disk
3 1/2-inch floppy disk
CD
DVD
USB
SD Card
Could Computuing
1971
1976
1980
1982
1995
2000
2005
2011

INFOGRAPHIC

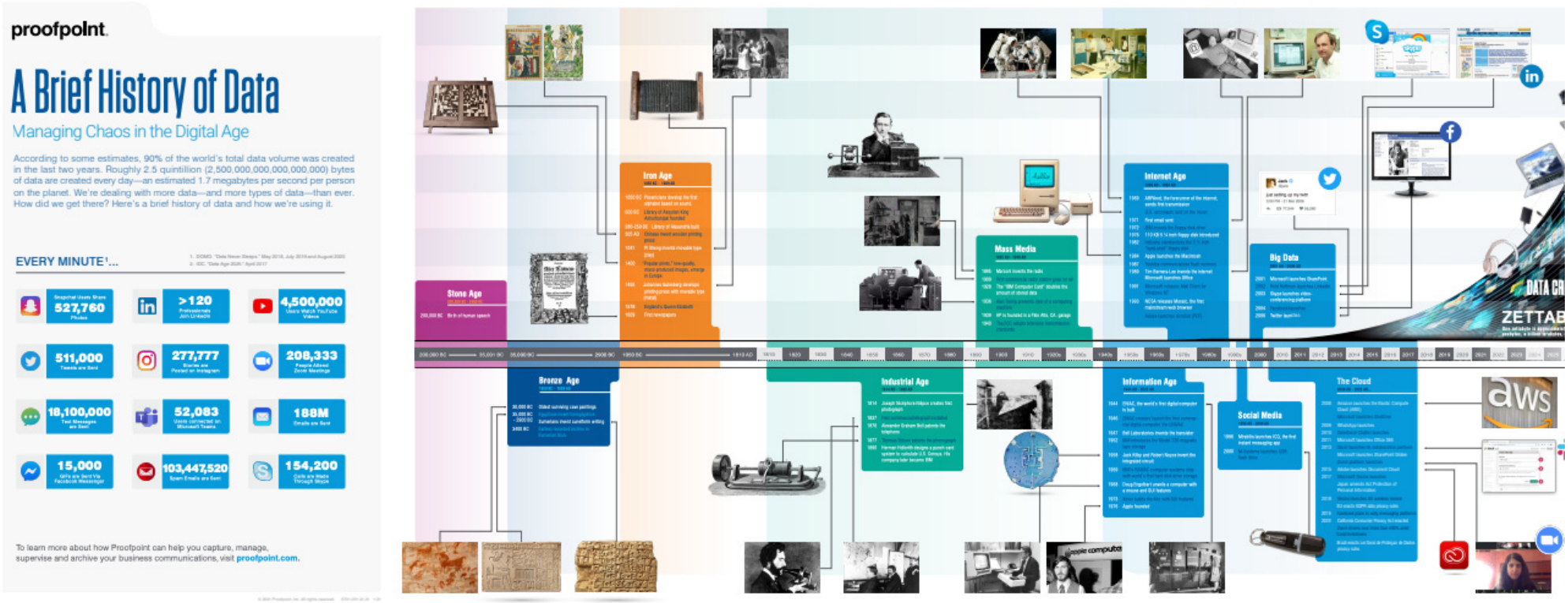
The Data Tsunami

A Brief History of Data and Our Struggle to Manage It

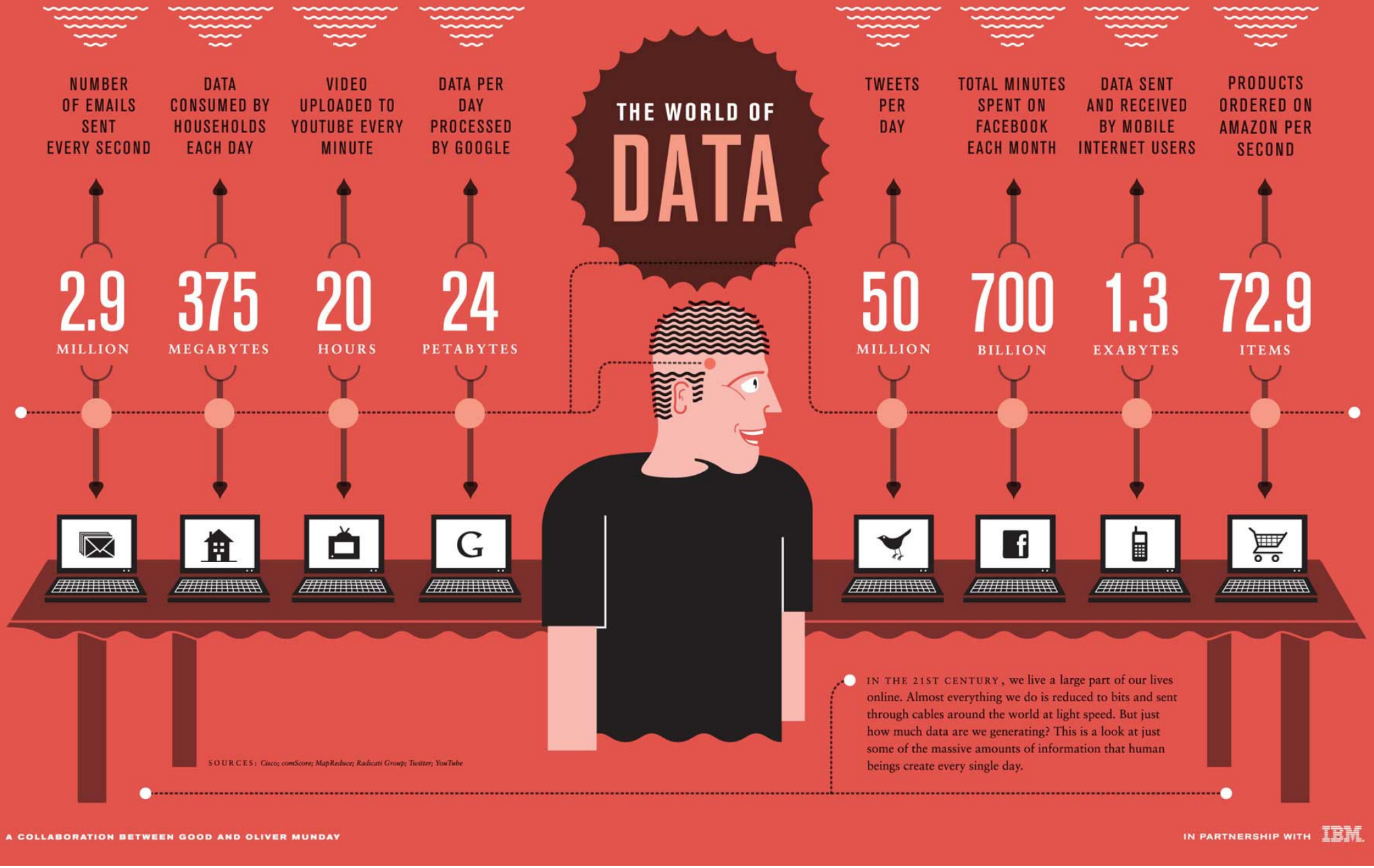
Roughly 2.5 quintillion (2,500,000,000,000,000,000) bytes of data are created every day. That's an estimated 1.7 megabytes per second per person on the planet. How did we get here? Here's a brief history data and how we're using it.

Click below to access the infographic

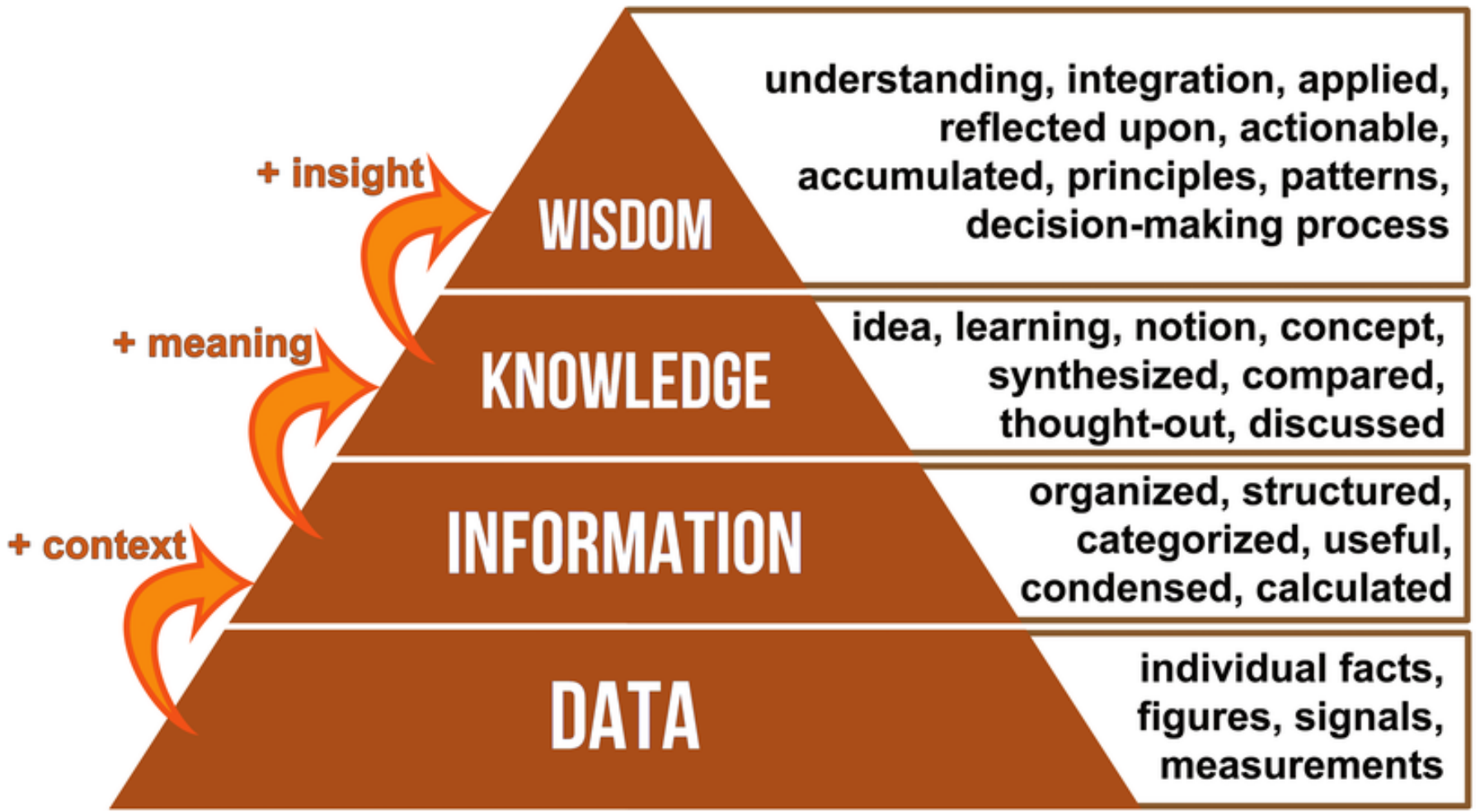
VIEW NOW →



https://www.proofpoint.com/sites/default/files/infographics/pfpt-us-ig-a-brief-history-of-data.pdf

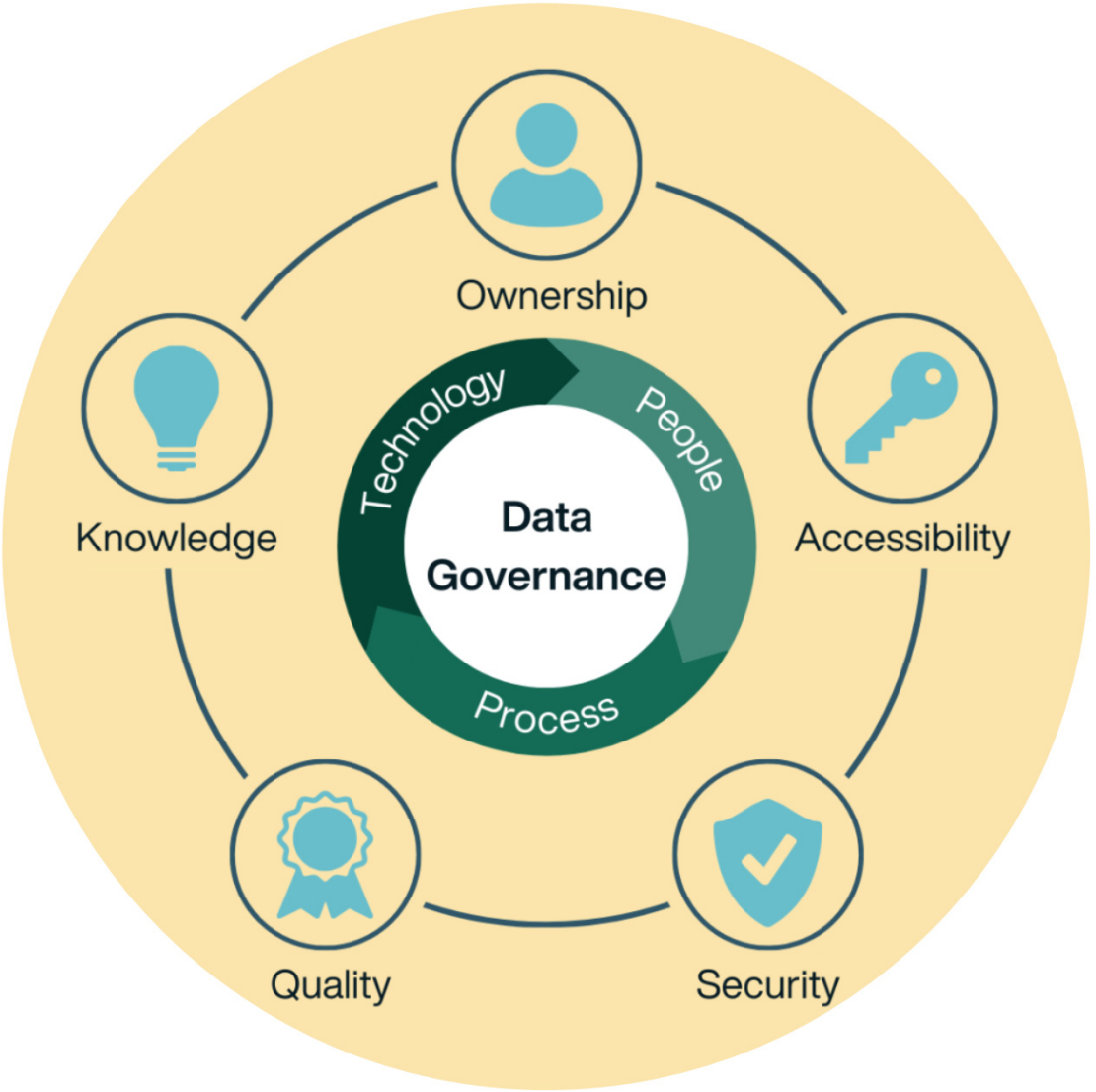


https://hexanika.com/history-of-big-data/

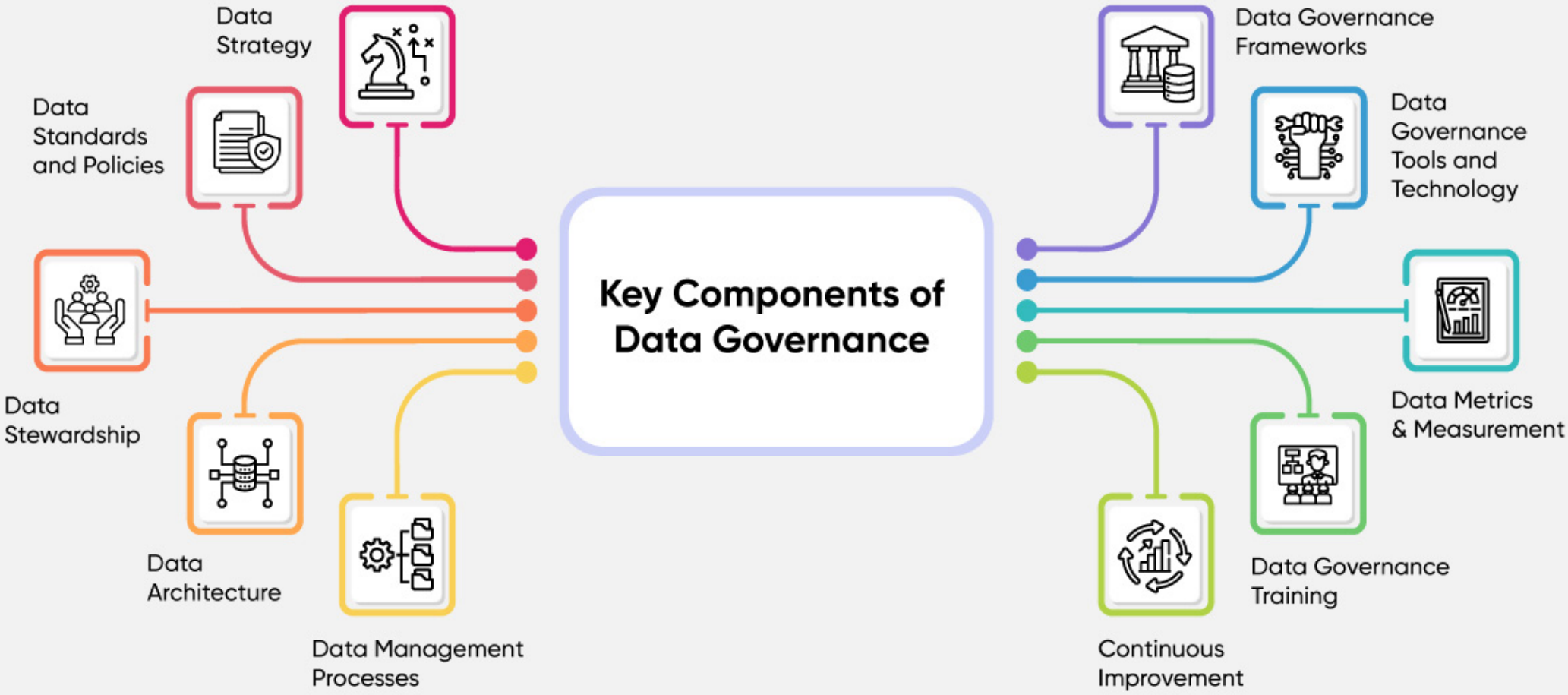

+ insight
+ meaning
+ context
WISDOM
KNOWLEDGE
INFORMATION
DATA
understanding, integration, applied, reflected upon, actionable, accumulated, principles, patterns, decision-making process
idea, learning, notion, concept, synthesized, compared, thought-out, discussed
organized, structured, categorized, useful, condensed, calculated
individual facts, figures, signals, measurements

داده‌ها و حکمرانی آنها

DATA AND ITS GOVERNANCE



https://otrs.com/otrsmag/data-governance/



https://www.csm.tech/americas/blogdetails/what-is-data-governance-why-is-it-important-for-your-business

What Data Governance Aims to Achieve

ENHANCE DATA QUALITY

Data governance sets clear policies and standards for how data is collected, stored, and used across the organization.

FACILITATE DATA MANAGEMENT

A well-governed data environment simplifies the management of data across its lifecycle.

ESTABLISH INTERNAL DATA USAGE RULES

Data governance sets clear policies and standards for how data is collected, stored, and used across the organization.

ENSURE COMPLIANCE

Data governance ensures adherence to regulatory requirements such as GDPR, HIPAA, and industry-specific standards.

IMPROVE COMMUNICATION

High-quality, accessible data improves both internal and external communication.

INCREASE DATA VALUE

Data governance enhances the value of data by improving its quality, availability, and relevance.

REDUCE RISK

Through stringent controls and oversight, data governance reduces data-related risks such as breaches, inaccuracies, and misuse.

ENSURE LONG-TERM SUSTAINABILITY

Data governance helps companies remain sustainable by optimizing data processes, managing risks, and enabling data-driven decision-making.

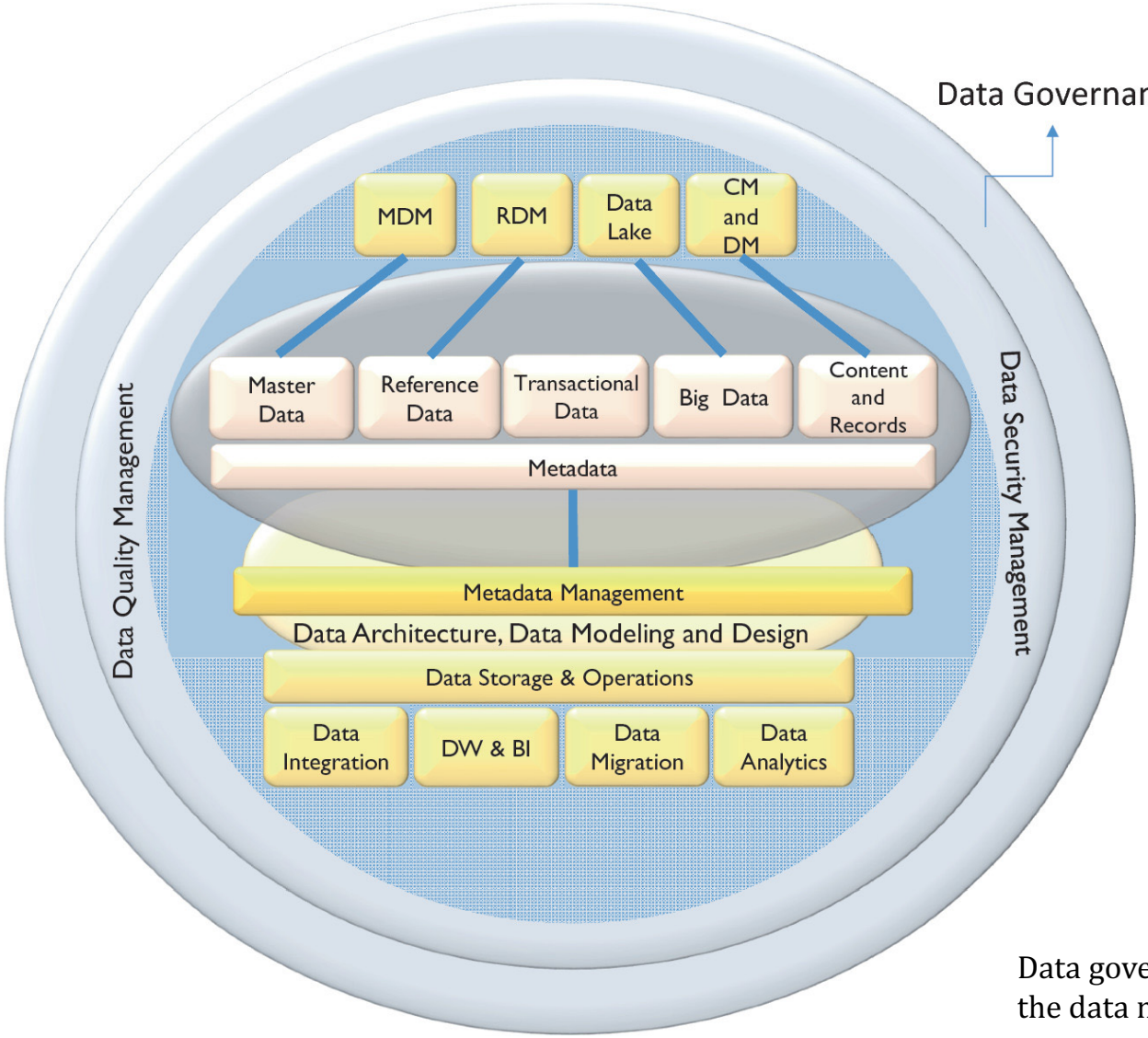
LOWER COSTS

By reducing inefficiencies, eliminating redundant processes, and preventing errors caused by poor-quality data, data governance helps lower operational costs.

https://celerdata.com/glossary/data-governance

حکمرانی داده‌ها و مدیریت داده‌ها

DATA GOVERNANCE AND DATA MANAGEMENT



Data governance tying together the data management functions

DATA MANAGEMENT vs DATA GOVERNANCE

QuestionPro

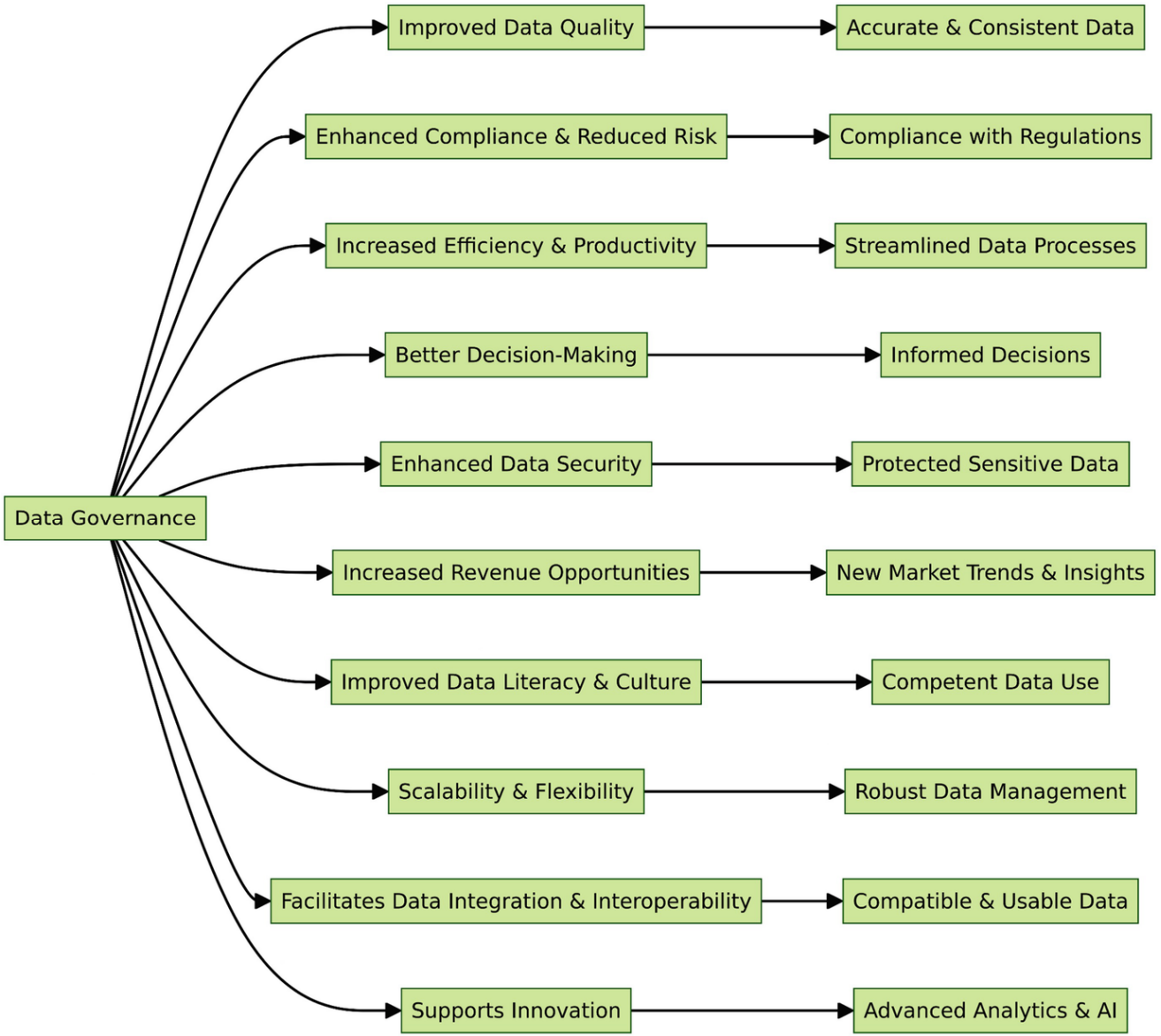
حکمرانی داده‌ها و مدیریت داده‌ها

Data Governance and Data Management

Data Governance	Data Management
This involves policies, regulations, and procedures to manage data quality.	This refers to how the data is managed.
Refers to the application of knowledge, the development of procedures, and the formulation of theories.	Refers to the collection, organization, protection, processing, sorting, and preservation of data.
It aims to ensure the accuracy and integrity of stored data.	It aims to improve the overall quality and monetary value.
It's a data strategy for obtaining high-quality data.	It's a method for organizing facts in a logical way.
Philosophical and business-focused.	Logistical and tech-focused.

https://www.questionpro.com/blog/data-management-vs-data-governance/

مزایای پیاده‌سازی حکمرانی داده‌ها



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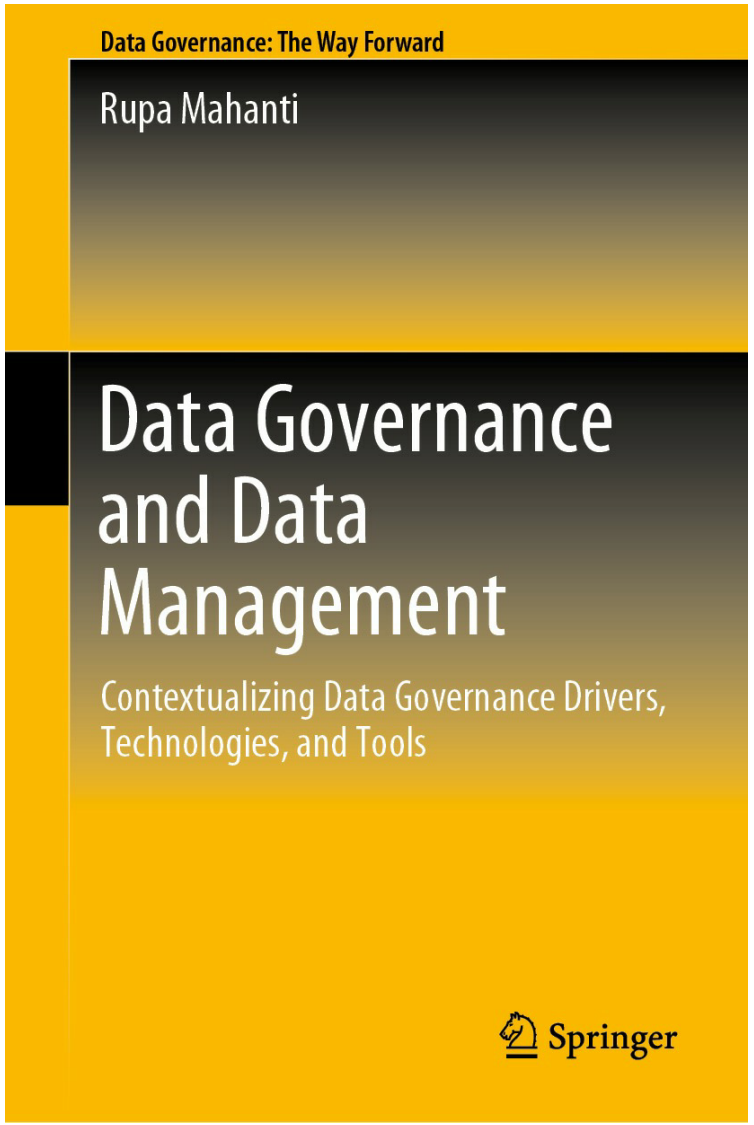
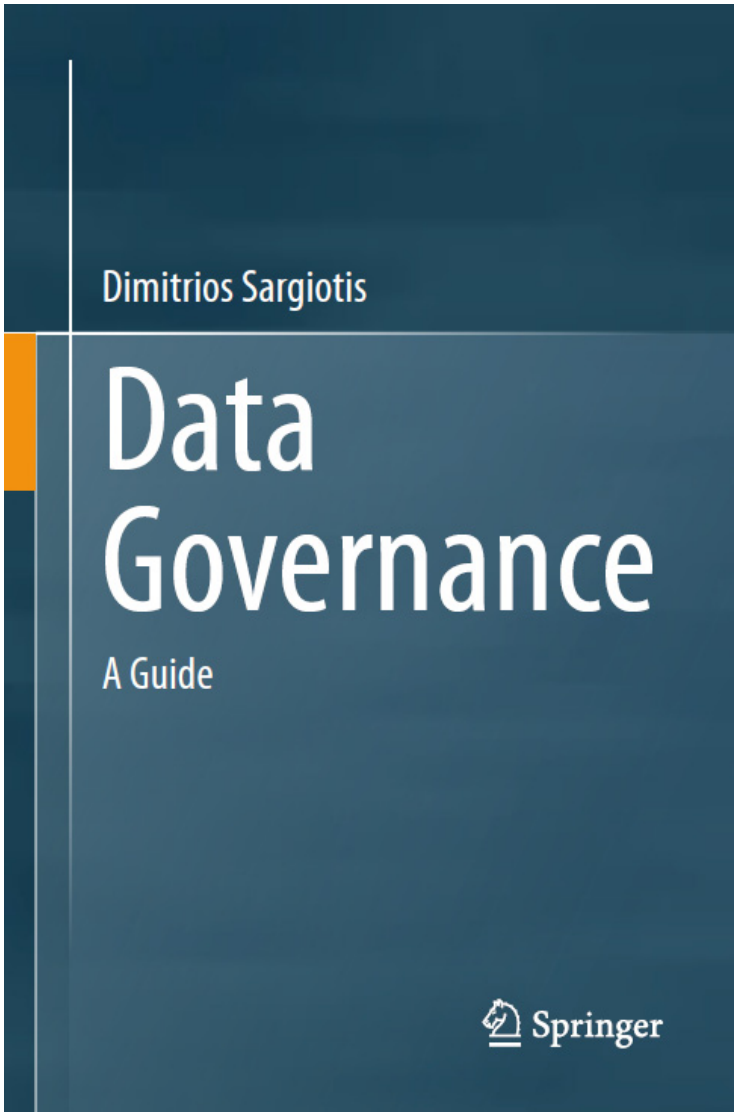


Rupa Mahanti,
Data Governance and Data Management:
Contextualizing Data Governance Drivers, Technologies, and Tools,
Springer, 2021.

https://link.springer.com/book/10.1007/978-981-16-3583-0

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