

DATA ENTROPY IN THE DIGITAL AGE

Welcome to the Swamp

DATA ENTROPY IN THE DIGITAL AGE



We live in a world
where there is
more and more
information and
less meaning

Jean Baudrillard - Simulacra and Simulations



The information Paradox

In a society supposedly saturated with media messages, information and meaning "implode," collapsing into meaningless "noise," pure effect without content or meaning. Thus, for Baudrillard: "information is directly destructive of meaning and signification, or neutralizes it.

The loss of meaning is directly linked to the dissolving and dissuasive action of information, the media, and the mass media.... Information devours its own contents; it devours communication and the social.... information dissolves meaning and the social into a sort of nebulous state leading not at all to a surfeit of innovation but to the very contrary, to total entropy" (SSM, pp. 96-100).

Data Swamp and Dark Data

A data swamp is a poorly managed data lake that has deteriorated over time. Data lakes are repositories for storing vast amounts of raw data in its native format until it's needed. A data swamp occurs when data within the data lake is not properly cataloged or governed, thus becoming disorganized, difficult to analyze, and sometimes nearly impossible to retrieve valuable information from. This often happens due to a lack of proper data management, metadata, and governance practices.

Dark data refers to the information that organizations collect, process, and store during regular business activities but generally fail to use for other purposes. This data is often untapped, unanalyzed, and unused.



DATA ENTROPY IN THE DIGITAL AGE

The Digital Noise

IDC

In 2018, IDC estimated that 60% of all data created would never be used. This figure was projected to increase to 73% by 2025

DELL

In 2020, Dell Technologies reported that 80% of data created was considered "dark data," meaning it was not being used or analyzed

VEEAM

Veeam: A 2022 Veeam report found that 53% of organizations stored data that they didn't know existed

SECTION

2020 Data & Dark Data Impact

TOTAL DATA CENTER ENERGY CONSUMPTION

Energy Consumption in Data Centres

206 TWh

DATA CENTER ENERGY CONSUMPTION



IDC estimation in 2020

01 %

GLOBAL ELECTRICITY CONSUMPTION



Accounting for the 2020 total global electricity consumption

Source: Data from IDC Estimates

TOTAL DATA CENTER ENERGY CONSUMPTION

Dark Data Contribution

40 %

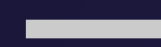
TOTAL ENERGY CONSUMPTION



Dark data was estimated to account for total energy consumption in data centers.

82 TWh

GLOBAL ELECTRICITY CONSUMPTION



Comparable to the annual electricity consumption of countries like **Portugal** or **Argentina**.

Source: Data from IDC Estimates

Projected Growth by 2025

345 TWh

ESTIMATED DATA CENTRE ENERGY CONSUMPTION



By 2025, data center energy consumption is estimated to reach

30 %

ASSUMING DARK DATA



Assuming dark data remains at this percentage.

103 TWh

ENERGY FOOTPRINT



Comparable to the annual electricity consumption of **Italy** or **South Korea**.

SECTION

2020 Carbon Emissions from Data Centers

2020 CO2 Emissions Data

254 Mmt

TOTAL CO2 EMISSIONS



IDC estimation in 2020

108 Mmt

CONTRIBUTION FROM DARK DATA



Accounting for the 2020 total global electricity consumption

45

COAL-FIRED POWER PLANTS



Equivalent to the CO2 emissions from 30-45 coal-fired power plants.

Projected Growth by 2025

457 Mmt

ESTIMATED CO2 EMISSIONS



By 2025, data center energy consumption is estimated to reach

137 Mmt

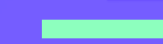
30% SHARE OF DARK DATA



Assuming dark data remains at this percentage.

60

COAL-FIRED POWER PLANTS



Equivalent to the CO2 emissions from coal-fired power plants.

SECTION

Cost Burden of Dark Data

Global Cost Estimates 2022

\$573 Bn

GLOBAL COST ESTIMATE



For storing and managing dark data

\$867 Bn

PROJECTED COST BY 2025:



Highlighting the increasing economic burden of unused data



Impact on Individual Organizations

457 Mmt

COST VARIABILITY



Depends on data volume, storage infrastructure, and personnel costs

40 %

ESTIMATED BUDGET IMPACT



Some organizations may spend 30-40% of their data management budget on storing and managing dark data

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