

USE AND IMPACT OF BIG DATA IN ORGANIZATIONS

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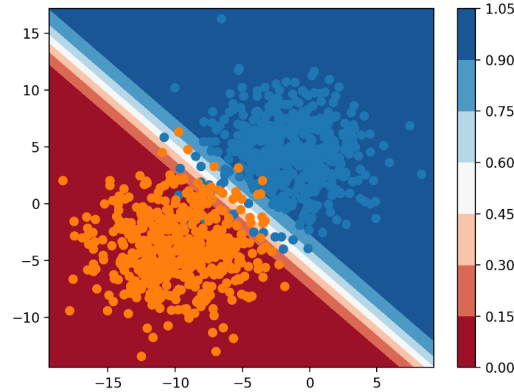


1. INTRODUCTION



Organizations

The advance of information technology and data production, lead to the application of new organizational, administrative, financial, and decision making models



Big Data

The effective interpretation and analysis of data offers a substantial advantage in decision making



Research work

This work compiles the State of the Art on the impact of Big Data on business and government organizations, especially through data obtained from social networks



2. BACKGROUND

2.1. Globalization and Social Media

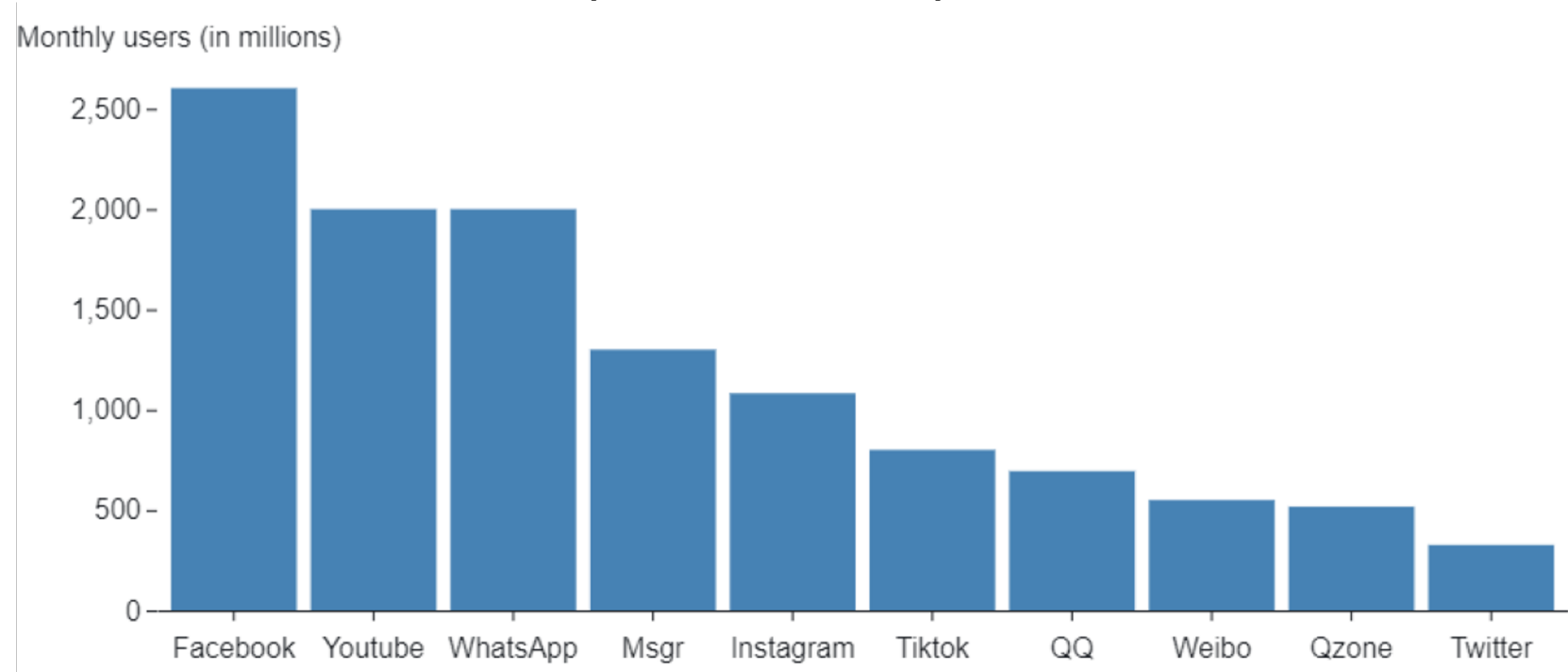
Data continues to grow and it is coming faster:

- Internet
- Social networks
- Sensors

Data Analysis domains:

- Technology
- Finance
- Commerce
- Government
- Administration
- Organization

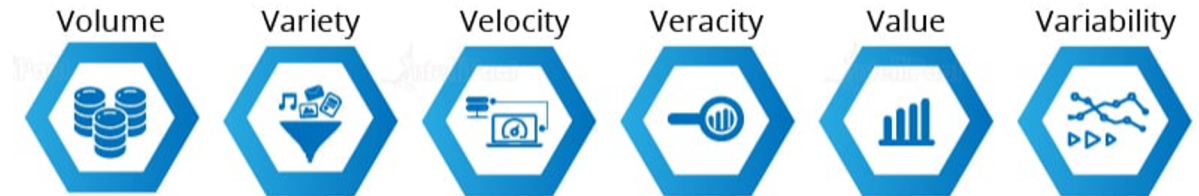
Social networks market by number of monthly active users in 2020 (in millions)



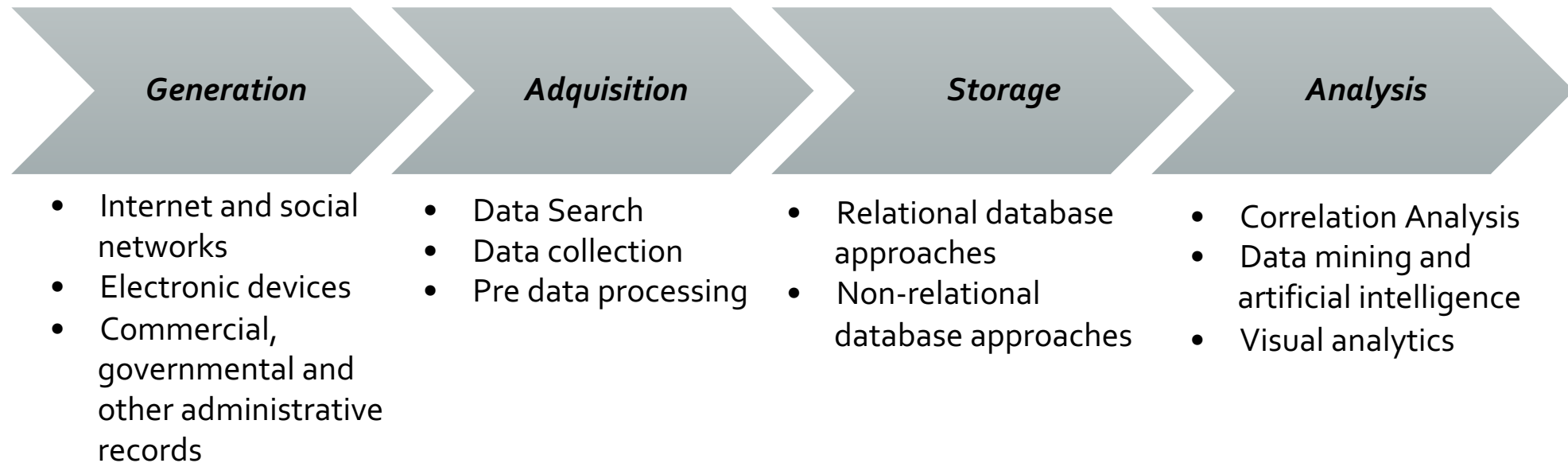
<https://datareportal.com/social-media-user> (accessed August 10, 2020)

2.2. Big Data in Organizations

Big Data refers to the technological means to process and exploit a large amount of data.



Big Data value chain



Chen et al. 2014

2.3. Big Data and Finances



Big Data techniques support the fundamental and technical analysis of financial instruments.



Big Data, allows the identification of market opportunities, trends and timely risk management



It allows the analysis of stock prices, financial statements and unstructured information generated from different sources.





- Design of customer-centered objectives
- Operational optimization
- Financial/Risk Management
- Business models

SMEs and Small Businesses



- Risk management analysis
- Credit rating

Banking System



- Creation of qualitative value
- Information of public opinion on government management, political parties, budget and others, obtained from social networks and other sources

E-Government

2.4. Big Data and Administration

Administrative Goals

- Managers require high quality information to transform this knowledge into profitability

Administrative Process

1. Planning
2. Organization
3. Integration
4. Direction
5. Control

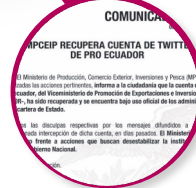
Public Administration

- Optimization of data and increase of efficiency
- Design of public policies

2.5. Big Data and Military Forces

Uses and Risks:

- Intelligence and strategic communication services
- Inappropriate use of social networks by Israeli troops in 2010 and later by US troops
- Security violations of official accounts in Ecuador on August 5, 2019 (@FFAAECUADOR)



3. DISCUSSION

Privacy & Security

- Large companies invest a large part of their budget in information security (encryption, tokenization, etc.)
- National data privacy policies help clarify the correct use of data..
- Cambridge Analytica case with data of 50 million people stolen (US votes)

Uses in Finance and Administration

- Big Data value chain: generation, acquisition, storage and analysis, can be combined with financial and administrative aspects.

Uses in Public Organizations

- It is fundamental to use Big Data for decision making in order to improve the quality of life of citizens.
- The present article contributes in great part to the state of the art for the proposed research in the Military

3. DISCUSSION

Financial and administrative uses through the Big Data value chain

	Big Data Value Chain			
	Generation	Acquisition	Storage	Analysis
Financial fields	<ul style="list-style-type: none"> - Personalized services - Financial news (RSS) 	<ul style="list-style-type: none"> - Process automation - Benchmarking 	<ul style="list-style-type: none"> - Customer data management - Financial statements - Trading stocks - Suppliers information 	<ul style="list-style-type: none"> - Consumer analytics - Money market - Capital market - Commodities - Market supply and demand - Data management
Administrative process	<ul style="list-style-type: none"> - Planning - Organization - Integration 	<ul style="list-style-type: none"> - Organization - Integration - Direction 	<ul style="list-style-type: none"> - Organization - Control 	<ul style="list-style-type: none"> - Direction - Control

4. CONCLUSIONS AND FUTURE WORK

- This article reviews the use of Big Data in public and private organizations
- The data is the beginning of the process towards the generation of relevant information, which directly affects the reduction of time and cost optimization
- At the government level, the incidence of the use of social network data for decision making has not been deepened. Specifically, in the military field, no known computer tool collects, stores, processes and analyzes social network data
- As future work, it is essential to develop a visual approach to efficiently manage this data from an organizational, administrative and financial point of view



Thanks