



Diving:Data&AI

A personal walk through amazing profession

A short BIO



Antonio Torrado González
Data Enthusiast



- Born in Porto do Son, too many years ago, moved early to San Sebastian here I did my High School.
- From the **whys** and the **back-shop** in those days, there was no option but embarking in the **Marvel of Physics forever**
- Loved my **Physics** studies in Santiago & Complutense '87-'92
- And then, concessions had to be made... to embark in the **engineering world of electronics** in the UK
- Until, very casually bumped into the rare world of **Business Intelligence & Data**, where I lived passionately for the later 24 yr. in UK, USA, Spain and back home again
- Hand in hand with amazing companies like Microstrategy | HP | SDG.
- “Physics is home”, as it remains to be one of my favorite joys.

The origins of Data In a nutshell?

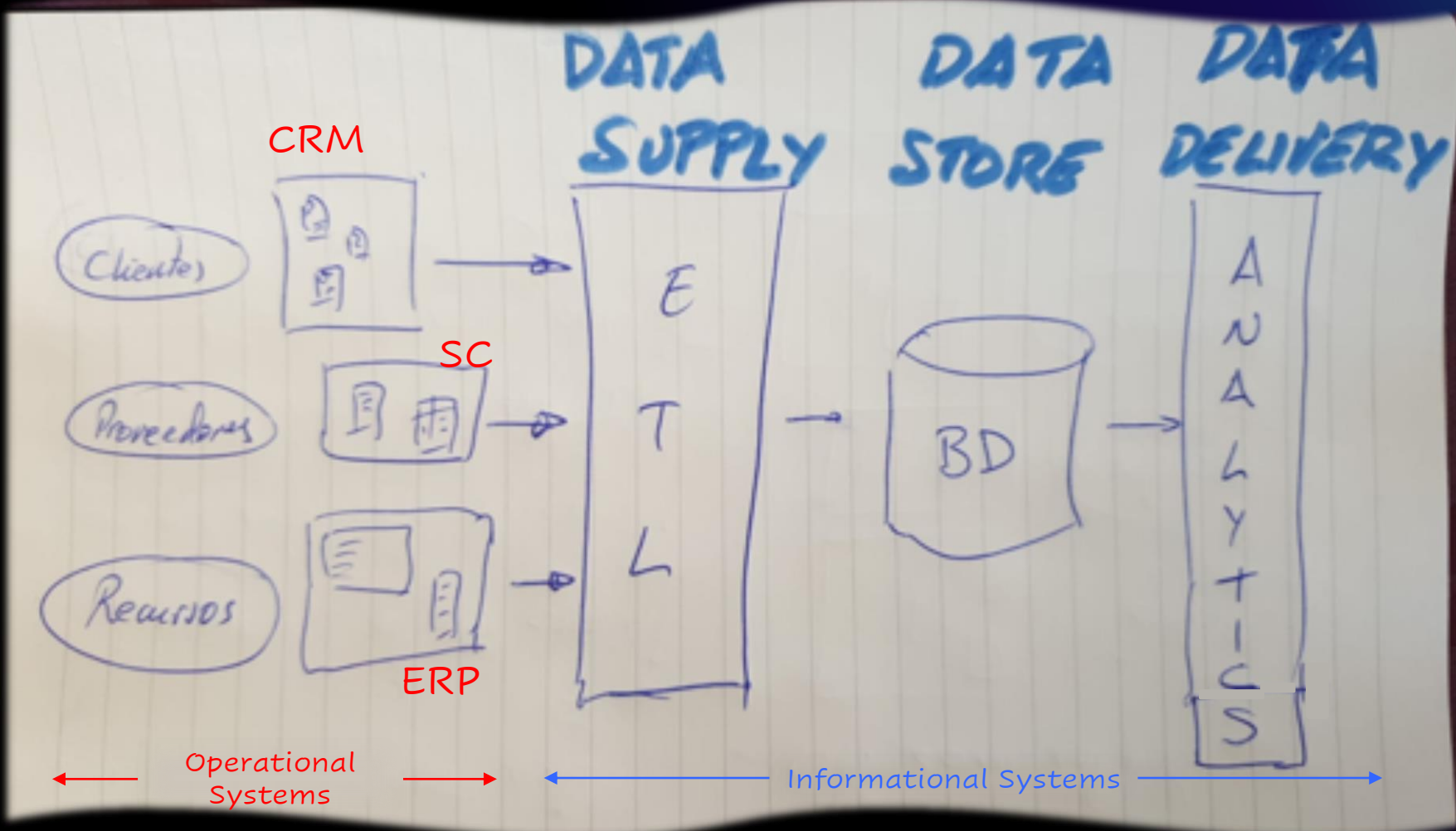
Son los años 80...



¿Cómo responder a preguntas como:

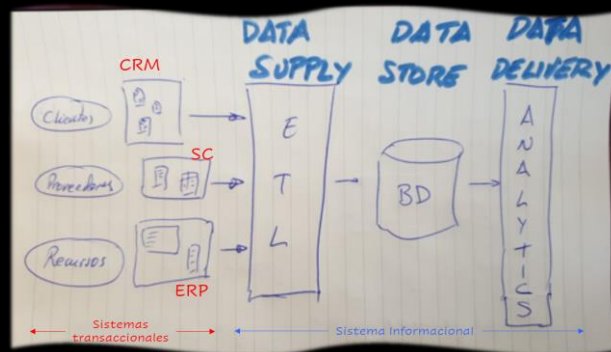
- ¿Cómo va la compañía?
- ¿Cómo de eficientes son mis tiendas?
- ¿Y mis vendedores?
- ¿Qué tipo de clientes compran qué categorías de productos en que tiendas y en qué tramo horario?

The origins of Data In a nutshell?



The origins of Data In a nutshell?

The Enterprise Data Warehouse was born, and this profession with it

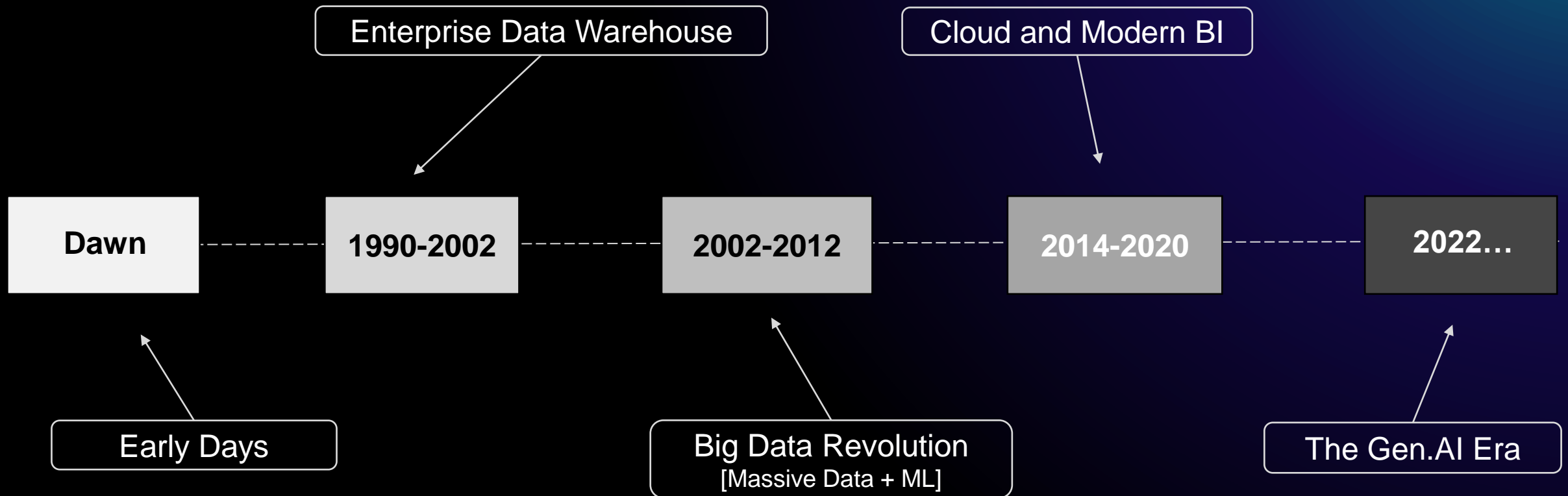


- Non intrusive decoupling from critical systems
- Integrated Data. Single source of information
- Data in Business Terms
- Historic Data, Maximum Granularity.
- Massive Data, All In !
- Performance for complex Queries
- Single Version of the Truth
- Enables Data Driven Decision Making:

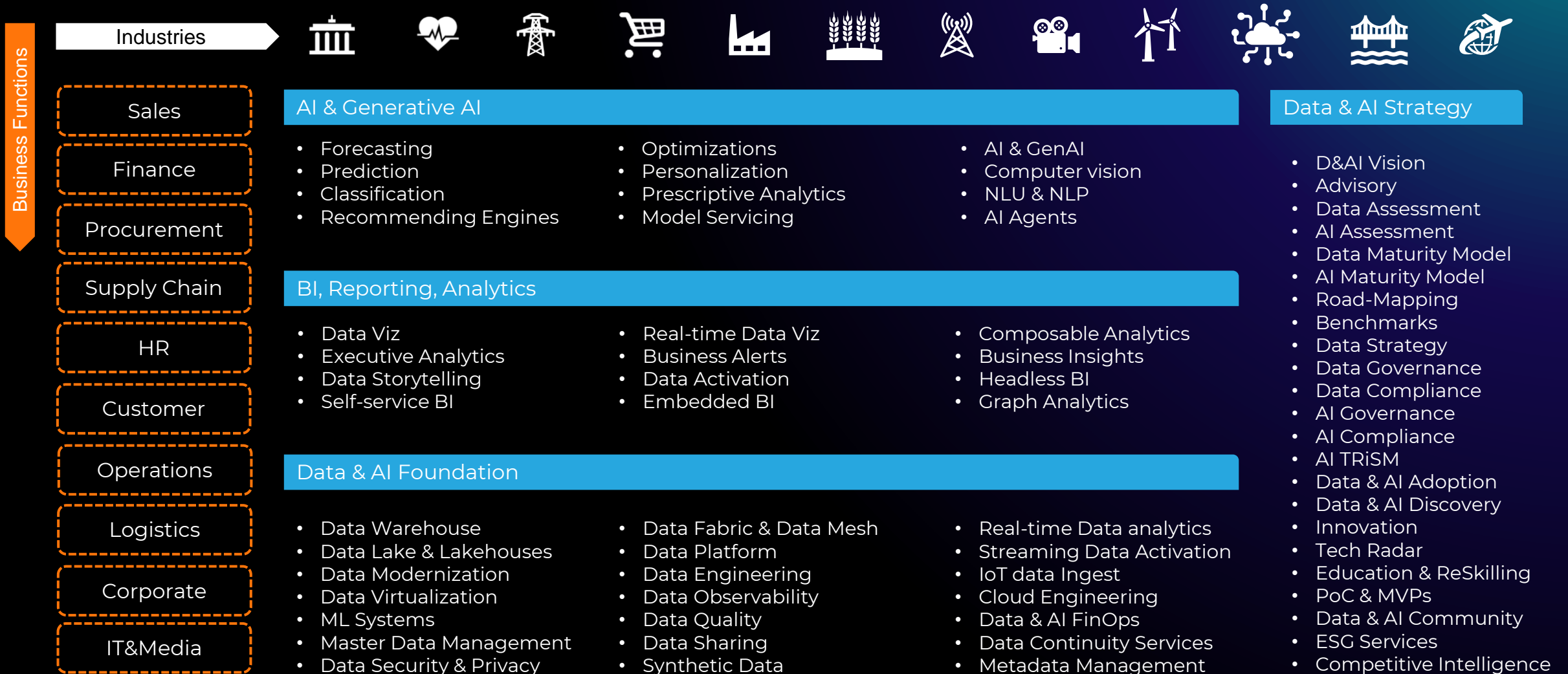
- Semantic Layer to Access Data
- Dashboarding
- Reporting
- Self Service BI
- Data Discovery
- Embedded Analytics, etc.

The origins of Data

In a nutshell?



What is the actual Data & AI Space?





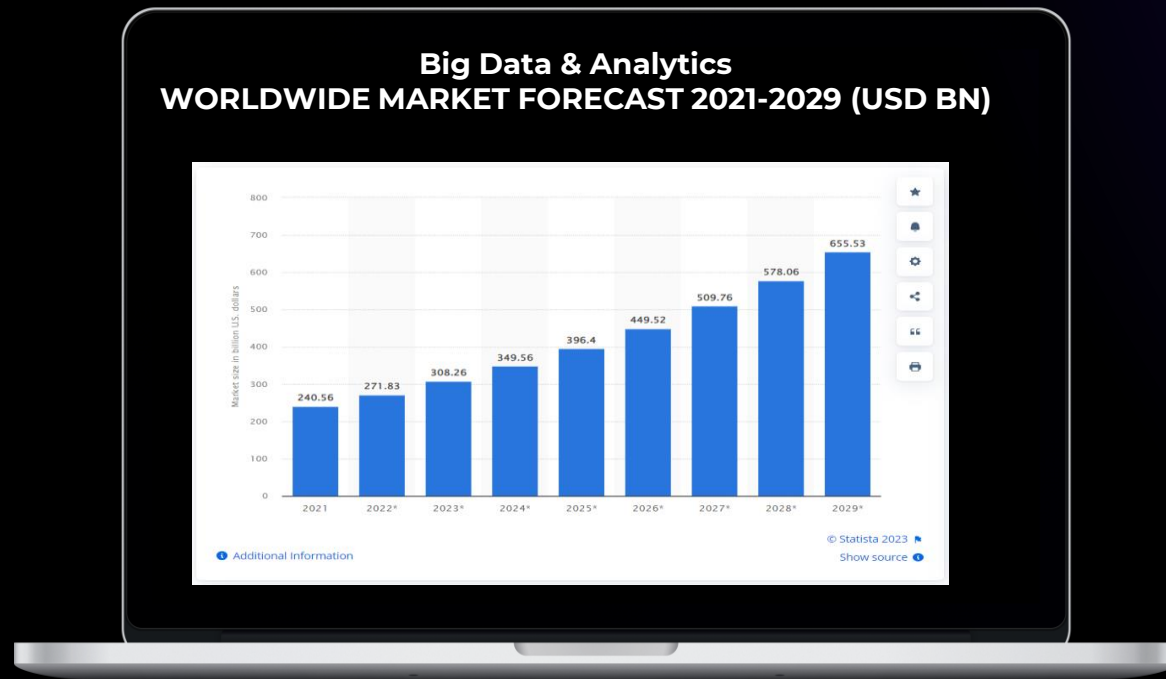
Why Data & AI

The why's of a career in Data & AI

Why a career in Data & AI

A massive healthy market

According to **Statista**, driven by the boost in AI, the Europe **big data analytics market** is expected to grow from US\$ 63.89 million in 2022 to US\$ 153.92 million by 2028 ([Business Market Insights](#)); it is estimated to grow at a **CAGR of 15.8%** from **2022 to 2028**.



[Statista](#)

Precedence Research. The global **data analytics market** size was exhibited at USD **30 billion in 2022** and is projected to surpass around USD **393.35 billion by 2032**, poised to grow at a projected **CAGR of 29.4%** during the forecast period 2023 to 2032.

EUROPE

The Europe big data analytics market is expected to grow from US\$ 63.89 million in 2022 to US\$ 153.92 million by 2028 ([Business Market Insights](#)); it is estimated to grow at a **CAGR of 15.8%** from **2022 to 2028**.

SPAIN

[Data Bridge Market Research](#) analyses that the Spain big data and data engineering Services market value, which was USD 55.14 billion in 2021, is expected to reach the value of USD 192.95 billion by 2029, at a **CAGR of 16.95 %** during the forecast period **2022 - 2029**.

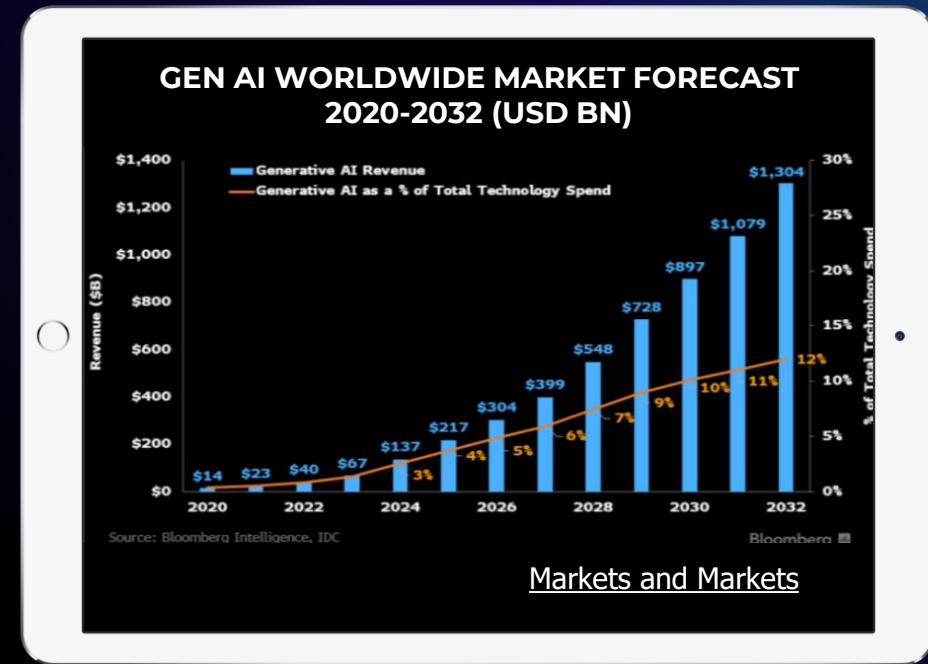
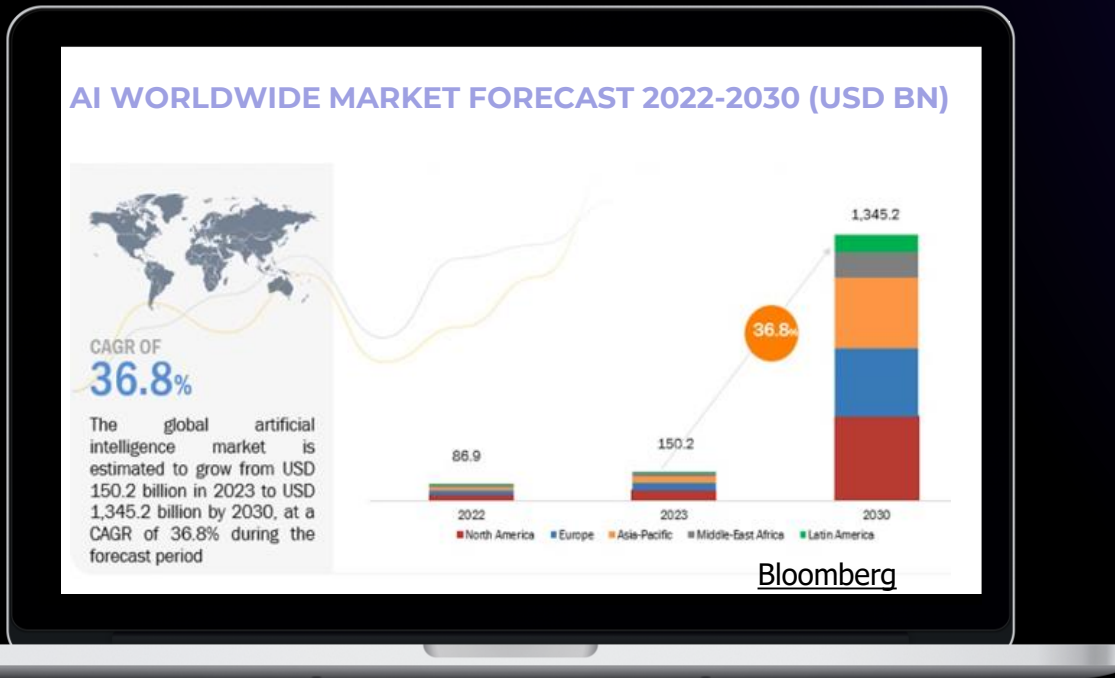
CAGR >15% (depending on the source) for the next 5 to 8 years

Why a career in Data & AI

A massive healthy market

Statista projects the Artificial Intelligence size market to reach US\$305.90bn in 2024 with an annual growth rate (**CAGR 2024-2030**) of **15.83%**, resulting in a market volume of US\$738.80bn by 2030.

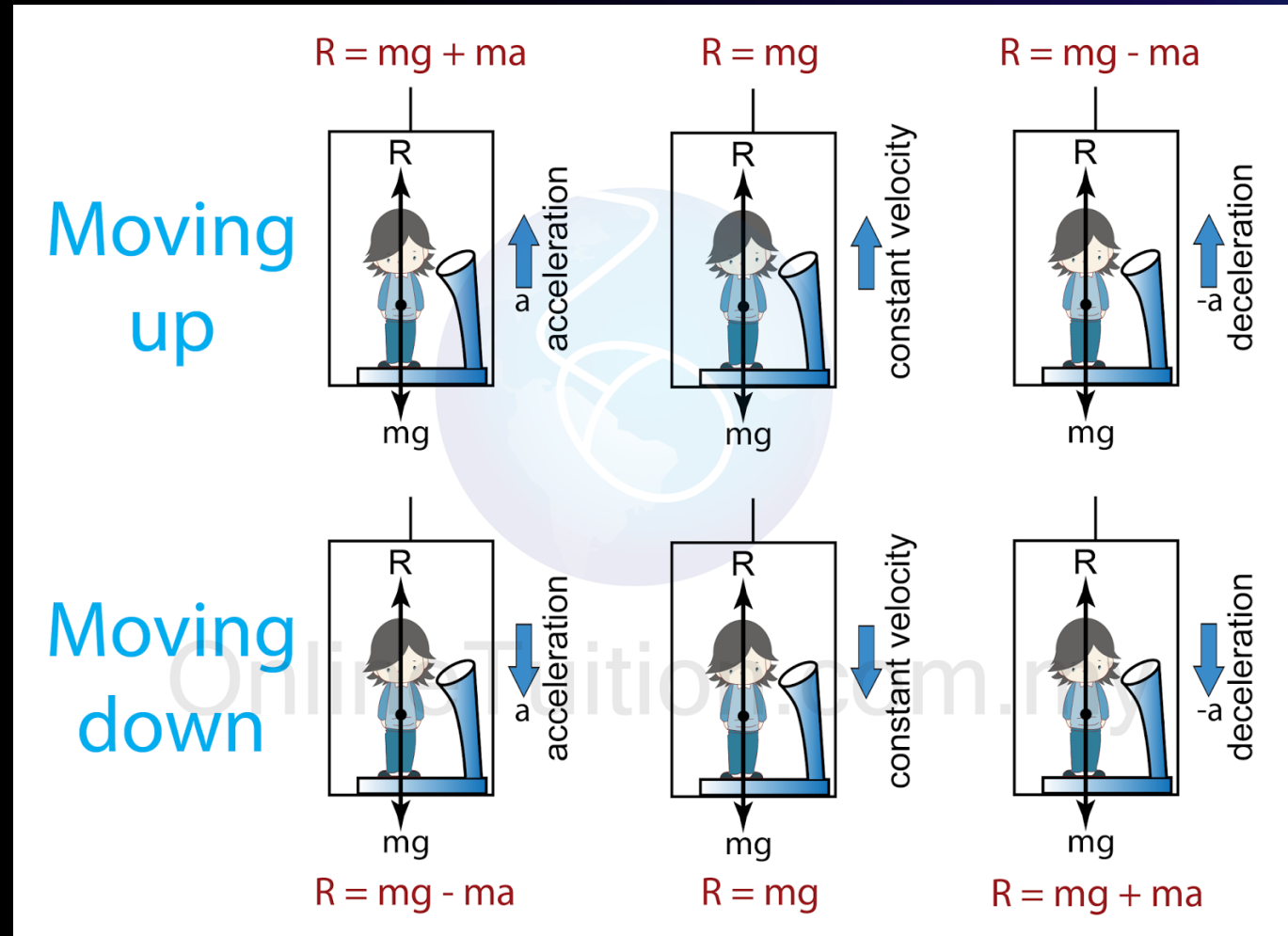
Bloomberg & IDC project similar size and CAGR, with Gen.AI increasing % of Total Technology Spend, from 3% in 2024 to 10% in 2030.



CAGR >15% (depending on the source)
for the next 5 to 8 years

Why a career in Data & AI

The lift metaphor



Source: onlinetuition.com.my

Why a career in Data & AI

Variety of professional lives... with a tip

Harvard Business Review

Data Scientist: The Sexiest Job of the 21st Century



<https://hbr.org/2012/10/data-scientist-the-sexiest-job-of-the-21st-century>

BEST JOB PROFILES In BIG DATA

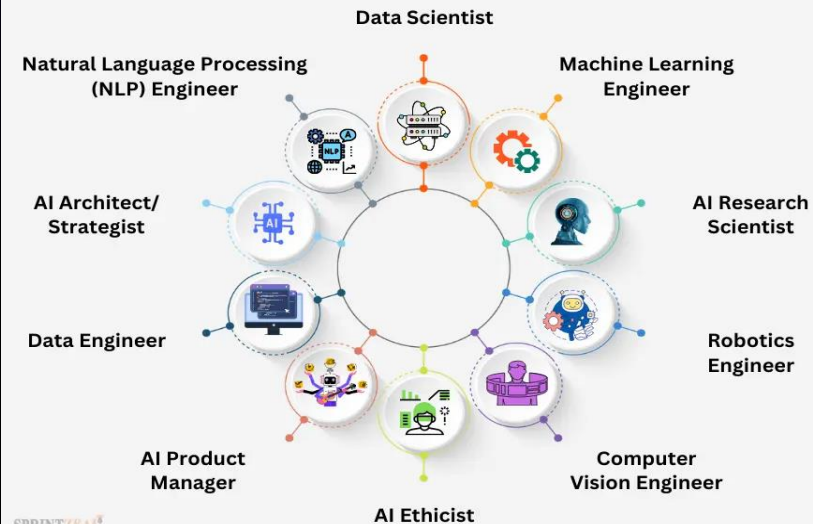
<p>DATA SCIENTIST</p> <p>These people use their analytical and technical capabilities to extract meaningful insights from data.</p>	<p>DATA ENGINEER</p> <p>They ensure uninterrupted flow of data between servers and applications and are also responsible for data architecture.</p>
<p>BIG DATA ENGINEER</p> <p>Big Data Engineers build the designs created by solution architects. They develop, maintain, test and evaluate big data solutions within organizations.</p>	<p>MACHINE LEARNING SCIENTIST</p> <p>They work in the research and development of algorithms that are used in adaptive systems. They build models for predicting customer behaviors and demand forecasting, and explore big data for automatically extract patterns.</p>
<p>BUSINESS ANALYTICS SPECIALIST</p> <p>A business analytics specialist supports various departments in their decision-making process and in the development of new products, services and strategies in order to understand customer needs and developing products and services solutions to problems.</p>	<p>DATA VISUALIZATION DEVELOPER</p> <p>They design, develop and provide production support of interactive data visualization used across the enterprise. They conceptualize and model their conclusions, design, and develop reusable graphical user interfaces and use strong technical knowledge for implementing these visualizations using the latest technologies.</p>
<p>BUSINESS INTELLIGENCE (BI) ENGINEER</p> <p>They have data analysis expertise and the experience of using BI-reporting tools, designing and maintaining data warehouses. They are familiar with big data and use a data-driven approach to solving complex problems.</p>	<p>BI SOLUTION ARCHITECT</p> <p>They come up with solutions capable to meet business and making them reality that uses, like strong communication & analytical skills, research for data visualization, and a drive for solutions and self-education.</p>
<p>BI SPECIALIST</p> <p>They are responsible for supporting an enterprise-wide business intelligence framework. This position requires critical thinking, research, detail, and effective communication skills.</p>	<p>ANALYTICS MANAGER</p> <p>An analytics manager is responsible for configuration, design, implementation, and support of data analysis solutions or BI tools. They are specifically required to analyze huge quantities of information gathered through transactional activity.</p>
<p>MACHINE LEARNING ENGINEER</p> <p>Machine Learning engineer's final "output" is the working software, and their "efficiency" for this job role consists of other software components that run automatically with minimal human intervention. The decisions are made by machines and they often take a product or service to market.</p>	<p>STATISTICIAN</p> <p>They gather numerical data and then making it, and help companies to make a series of numerical data and to spot trends and make predictions.</p>

WWW.CREDIBLL.COM

<https://www.credibll.com/>

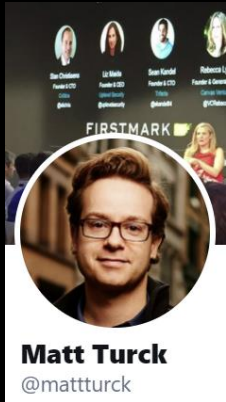
Industry coverage		BFSI Healthcare & life sciences Retail & CPG Manufacturing Telecom Media & entertainment Energy & utilities Technology	
Functional coverage	Sales	Strategy and consulting	
	Marketing & branding	<ul style="list-style-type: none"> Vision and strategy for Data, AI/ML, and analytics Business case and use case development Consulting, road-mapping, and tool selection advisory 	<ul style="list-style-type: none"> Generative AI advisory and consulting services PoCs and co-innovation Change management
	Finance & Accounting (FAA)	Data engineering and management <ul style="list-style-type: none"> Data warehouse, lake, and lakehouse Data modernization (incl. data migration) Data virtualization Master and reference data management Data security and privacy 	BI, reporting and analytics <ul style="list-style-type: none"> Implementation of BI tools Descriptive modeling KPI monitoring/reporting Custom reports Custom visualizations Interactive and mobile BI Intelligent business alerts Real-time monitoring
	Procurement	<ul style="list-style-type: none"> Data fabric & mesh Data platform implementations Data engineering (including data pipeline, ETL, etc.) Data observability Data quality (data profiling, cleansing, etc.) 	<ul style="list-style-type: none"> Predictive and prescriptive analytics Recommendation engines Personalization IoT and edge analytics Big data analytics Domain-specific analytics use cases
Supply chain & operations	AI services		
Human Resources (HR)	AI capabilities below enable and augment service delivery across analytics services.		
Customer support	<ul style="list-style-type: none"> Conversational AI (NLP/NG) Image recognition Intelligent document processing 	<ul style="list-style-type: none"> Computer vision ML engineering ML Ops 	<ul style="list-style-type: none"> AI governance AI explainability and bias management Generative AI

Top 10 Career Opportunities in Artificial Intelligence



SPRINTZEAL

Why a career in Data & AI Thriving Innovation & Technology... your will need more lives



Matt Turck
@mattturck

THE 2024 MAD (MACHINE LEARNING, ARTIFICIAL INTELLIGENCE & DATA) LANDSCAPE

The landscape is divided into several key sections:

- INFRASTRUCTURE:** Includes Storage (e.g., AWS S3, Azure Blob), Data Lakes (e.g., Databricks, Snowflake), Data Warehouses (e.g., Amazon Redshift, Google BigQuery), Streaming/In-Memory (e.g., Apache Kafka, Redis), and various databases (e.g., PostgreSQL, MongoDB).
- ANALYTICS:** Covers Data Science Notebooks (e.g., Jupyter, Databricks), Data Science Platforms (e.g., SAS, IBM), Visualization (e.g., Tableau, Power BI), and Data Analyst Platforms (e.g., Alteryx, Qlik).
- MACHINE LEARNING & ARTIFICIAL INTELLIGENCE:** Features Data Generation & Labeling (e.g., Scale AI, Labelbox), Enterprise ML Platforms (e.g., Databricks, AWS SageMaker), and various AI/ML frameworks and tools (e.g., TensorFlow, PyTorch, Hugging Face).
- APPLICATIONS — ENTERPRISE:** Divided into Sales, Marketing, Customer Experience, Human Capital, Automation, and Regional Optimization.
- APPLICATIONS — HORIZONTAL:** Includes Code & Documentation, Text, Audio & Voice, Image, Presentation & Design, Video Editing, and Search.
- APPLICATIONS — INDUSTRY:** Tailored for Finance & Insurance, Healthcare, Life Sciences, Transportation, Agriculture, and Aerospace.
- OPEN SOURCE INFRASTRUCTURE:** Lists various open-source tools and frameworks across different categories like data frameworks, formats, and databases.
- DATA SOURCES & APIS:** Details financial & market data, APIs/Space/SEA, people/entities, location intelligence, and ESG.
- DATA & AI CONSULTING:** Lists major consulting firms like Deloitte, IBM, and Accenture.

Version 1.0 - March 2024 © Matt Turck (@mattturck), Aman Kabber (@Amankabber11) & FirstMark (@firstmarkcap) Blog post: mattturck.com/MAD2024 Interactive version: MAD.firstmarkcap.com Comments? Email MAD2024@firstmarkcap.com

<https://mattturck.com/data2020/>



Why a career in Data & AI

A window to many worlds



Why a career in Data & AI and live inside the Gen.AI Revolution

Gen.AI to boost Annual GDP \$2.6 trillion to \$4.4 trillion

based on mere implementation of 63 use cases in all industries

Source: The economic potential of generative AI. McKinsey & Co. June 2023.



Earth's GDP in 2023 was \$104,5 Trillion



Why a career in Data & AI
Make it matter !

Global Pharma

Multimodal AI for Clinical Trials
competitive intelligence to early detection
of trends key to drive investments &
Societal Impact

Spanish Utility

Safety Analytics, an AI predicting
probability of Accident and its causes, in
Electrical Network Operations.

Local NGO

Food Bank Zero to Digital & Data

DocDot

Covid Times, all help was needed



World Health
Organization

DocDot is named by the
World Health Organization
as one of the most
innovative Digital Health
solutions on a global scale

<https://youtu.be/Dcp08FRULqY>



Global Hospitality

Data was key to survival

Why Physicists in Data & AI

Time for fun

\$> t3chfest



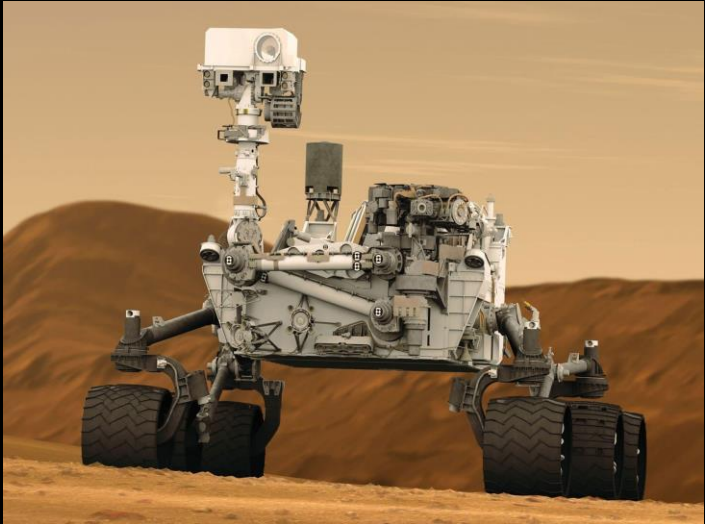


Are you talking to me?

Physicists Wanted !

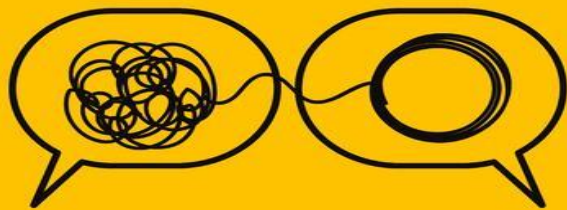
Why Physicists in Data & AI

Are you talking to me?



Why Physicists in Data & AI

Are you talking to me?

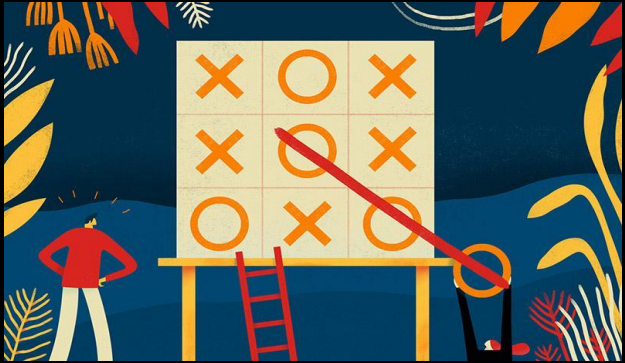
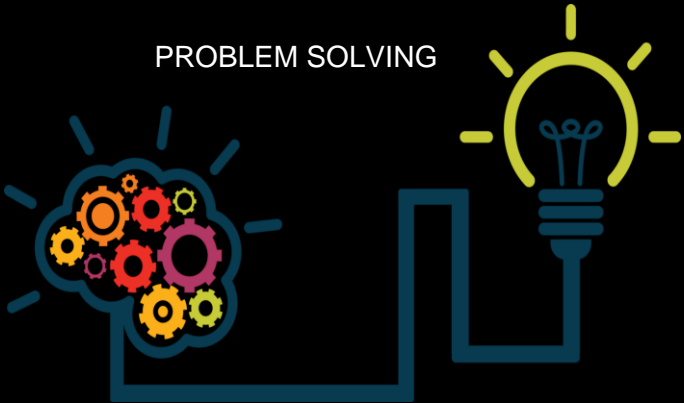


CONCEPTUALIZACIÓN, ABSTRACCIÓN,
GENERALIZATION



Why Physicists in Data & AI

Are you talking to me?



LATERAL THINKING



Why Physicists in Data & AI

Are you talking to me?



RESILIENCE & SURVIVING FAILURE



YES, DATA & AI PROFESSION, STILL PART OF THE REAL WORLD



Why Physicists in Data & AI

Are you talking to me?



MATHS, STATISTICS... CODING & SOFTWARE ENGINEERING





What we do
Data & AI Stories



Data & AI stories

The Bread & Butter of Data & AI?

THE BREAD

1. Increase in **net profit of +9.9%**
2. Margin obtained of 460,000 Euro/month for the group, approximately **5.5M Euro / year**

THE FLOUR



Sale by product, store and batch



Characteristics of the stores and bakeries (hours, size, influx, location, franchisee...).



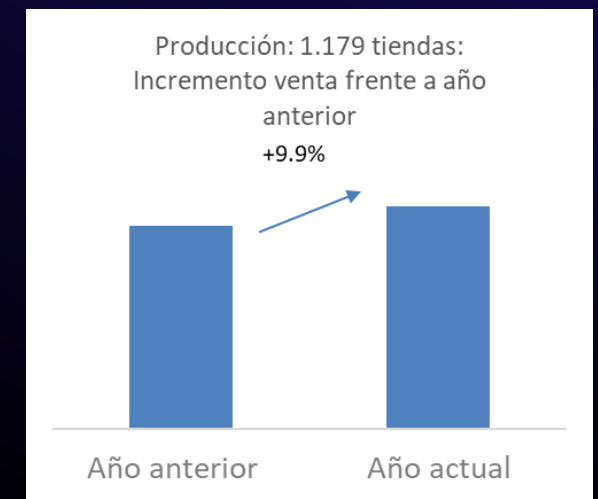
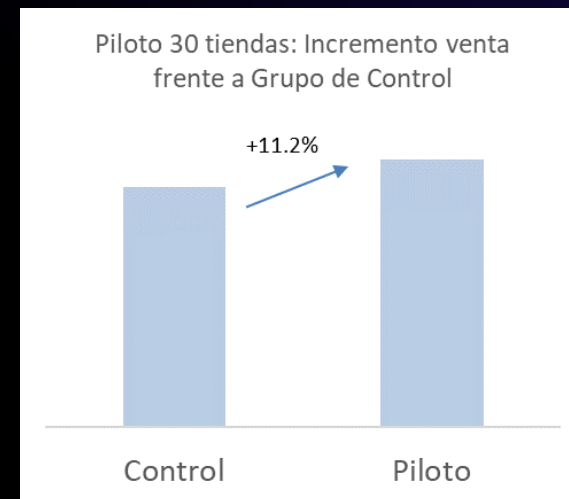
Surplus stock of products at the end of the batch



Product sales cash receipts



Calendar information and promotions





Data & AI stories

Water Matters... Loss Prediction & Prevention



Improvements in hydraulic performance of around 5% - 8% in the municipalities where it has been deployed.



Significant economic savings due to the possibility of being able to anticipate possible leaks or breakdowns.



Improvement of the operational chain. The fact of being able to detect leaks early and notify technicians preventively has meant a **great improvement in the entire operational or value chain**. This has also contributed to the company's entire digitalization and improvement plan.



The regularization of the leak detection methodology, together with the use of Machine Learning, has allowed us to **abandon a practically heuristic model based on the intuition of some more experienced operators** and rely on objective models, with data as the only Source of Truth.



LaLiga

Data & AI stories

Moneyball... not just about winning

Filtros

Jornada: Todas | Partido: Todas | Equipo: Todas | Posición: Todas

Minutos Jugados: 0 - 104 | Partidos Jugados: 1 - 29 | Ponderado a (X) Minutos: 90

Cálculo: Ponderado | Absoluto

Comparativa Rankings

Alphas: 0,5 - 0,5

Premisas: Coef ElasticNet | Coef XGBoost | Rank ElasticNet | Rank XGBoost

Profile

Goals: 32,00 (Efficiency 44,44%) | Goal Attempts: 186,00 (Accuracy 38,71%) | Direct FK: 45,00 (Efficiency 13,33%) | Penalties: 4,00 (Efficiency 50,00%) | Dribbles: 57,00 (Offsides: 10,00)

ElasticNet Default				ElasticNet Def+Off				XGBoost Default				XGBoost Def+Off				Índice Actual			
Jugador	Pos...	Equipo	Scoring	Jugador	Pos...	Equipo	Scoring	Jugador	Pos...	Equipo	Scoring	Jugador	Pos...	Equipo	Scoring	Jugador	Pos...	Equipo	Scoring
Lionel Messi	Del...	Barça	118.032	Lionel Messi	Del...	Barça	3.136	Lionel Messi	Del...	Barça	81.765	Lionel Messi	Del...	Barça	2.987	Lionel Messi	Del...	Barça	48
Karim Benzema	Del...	Madrid	75.907	Wisam Ben Yedder	Del...	Sevilla	2.657	Luis Suárez	Del...	Barça	80.012	Luis Suárez	Del...	Barça	2.532	Sergio Ramos	De...	Madrid	4.0
Luis Suárez	Del...	Barça	72.000	Luis Suárez	Del...	Barça	2.579	Karim Benzema	Del...	Madrid	67.180	Wisam Ben Yedder	Del...	Sevilla FC	2.417	Marc Bartra	De...	Betis	3.5
Sergio Canales	Me...	Betis	50.978	Cristhian Stuani	Del...	Girona	2.359	Sergio Canales	Me...	Betis	57.150	Ousmane Dembélé	Del...	Barça	2.052	Ever Banega	Me...	Sevilla...	3.4
Gareth Bale	Del...	Madrid	43.418	Mari Gómez	Del...	Celta	1.813	Toni Kroos	De...	Madrid	42.767	Jaime Mata	Del...	Getafe	1.815	Gerard Piqué	De...	Barça	3.4
Toni Kroos	Me...	Madrid	42.801	Jaime Mata	Del...	Getafe	1.731	Sergio Ramos	De...	Madrid	41.785	Cristhian Stuani	Del...	Girona	1.530	Mano Hermoso	De...	Espan...	3.0
Sergio Ramos	De...	Madrid	41.670	Isko Albas	Del...	Celta	1.630	Gareth Bale	Del...	Madrid	40.453	Mikel Oyarzabal	Del...	Real Soc...	1.395	Toni Kroos	Me...	Madrid	3.3
Ousmane Dembélé	Del...	Barça	39.557	Ousmane Dembélé	Del...	Barça	1.509	Ousmane Dembélé	Del...	Barça	39.473	Ousmane Dembélé	Del...	Athletic	1.335	Luis Suárez	Del...	Barça	3.2
Giovani Lo Celso	Me...	Betis	38.138	Mikel Oyarzabal	Del...	Real So...	1.487	Coutinho	Me...	Barça	39.107	Murain	Del...	Athletic	1.206	Damián Suárez	De...	Getafe	3.2

MAPAS DE RENDIMIENTO

BAR ATM RMA GET ALA SEV VAL BET RSO EIB LEG ATH ESP GIR LEV VLL CEL VIL RAY HUE

MAPA RENDIMIENTO OFENSIVO

MAPA RENDIMIENTO DEFENSIVO

JORNADAS FILTRO

1 - 26 | Local | Visitante | LaLiga Santander | LaLiga 1|2|3 | 2018 - 2019

GOALS GOALS

Profile | Comparison | Rankings | Match Analysis | Scouting

FILTERS: absolut | match | 90

SEASON: 16/17 | 17/18 | 15/16

Match Abbr: | Round: | Leagues: | HOME/AWAY: Home | Away

MATCH HALVES: 1st Half | 2nd Half

SELECTIONS: Team: FC Barcelona | Match Abbr: FCB-RMA 16/17 | Possession Id: FCB-RMA 16/17 - 147

Attack Performance

Goals: 32,00 (Efficiency 44,44%) | Goal Attempts: 186,00 (Accuracy 38,71%) | Direct FK: 45,00 (Efficiency 13,33%) | Penalties: 4,00 (Efficiency 50,00%) | Dribbles: 57,00 (Offsides: 10,00)

Shot Distribution by Body Parts | Shot Location | Shot Attempts

Attack Ranking: General | Efficiency | Accuracy | Set-Play

Goals: 1. FCB-EIB 17/18 (4.00) | 2. DEP-FCB 17/18 (3.00) | Offsides: 1. FCB 17/18 (4.00) | 2. FCB-LEV 17/18 (3.00) | Dribbles: 1. FCB-PAL 17/18 (9.00) | 2. DEP-FCB 17/18 (7.00)

Events positions

Filter by type of action: ATTACK FIELD | DEFENSE FIELD | DISCIPLINE | PASS FIELD

List of Events:

Actions	K...	Time	Player	Team	Event	Outc...	Action
	1105 31511	(2 Half) 14:59	Sergio Busquets	FC Barcelona	duel touched	-	-
	1107 31511	(2 Half) 15:02	Gerard Piqué	FC Barcelona	pass	Good	pass
	1108 31511	(2 Half) 15:06	Andrés Iniesta	FC Barcelona	pass	Good	pass
	1109 31511	(2 Half) 15:07	Lionel Messi	FC Barcelona	pass	Good	pass
	1110 31511	(2 Half) 15:10	Andrés Iniesta	FC Barcelona	pass	Good	pass

List of Possessions:

Posse...	Possessi...	Number of passes	Progre...	Start	Last Action	Outcome
FCB-RMA 16/17 -147	FC Barcelona	32	17.5	center	pass long	-

Data & AI stories

Fly safe... surprise findings !



Data & AI stories

Smart Farming



Data & AI stories

AI augmented Wine Making






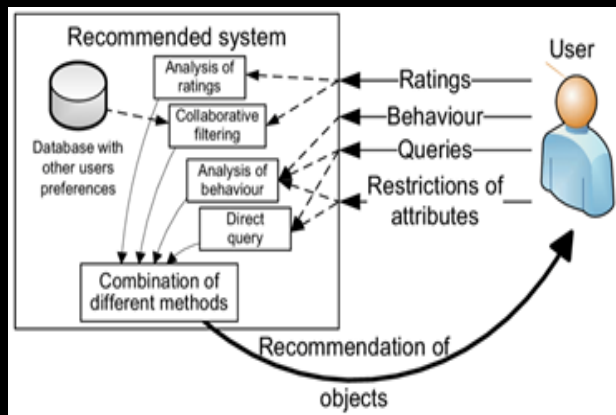


Data & AI stories

Book Recommender

Datos

-  Book consumption by library users
-  Characteristics of the book: author, language, theme...
-  Stock of books available in each library



Historical book request data from the last 7 years is used to construct the recommendations.

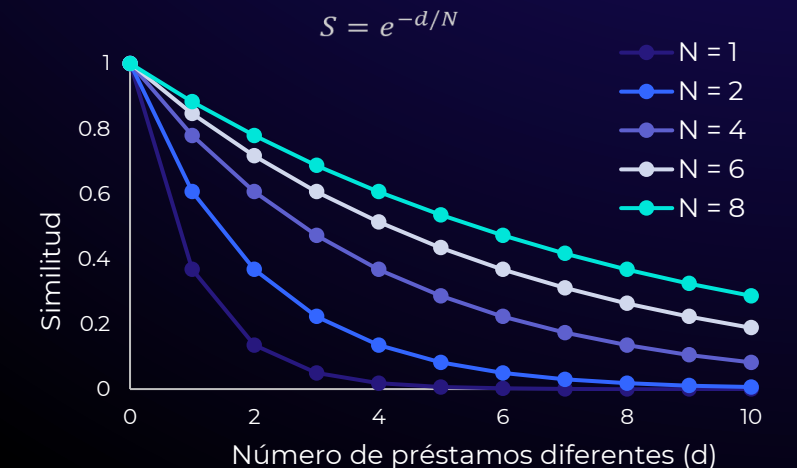
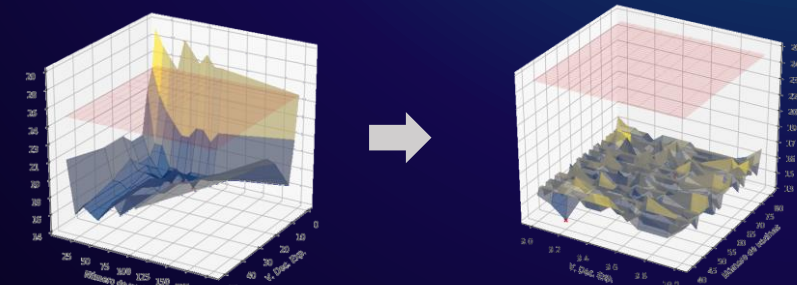
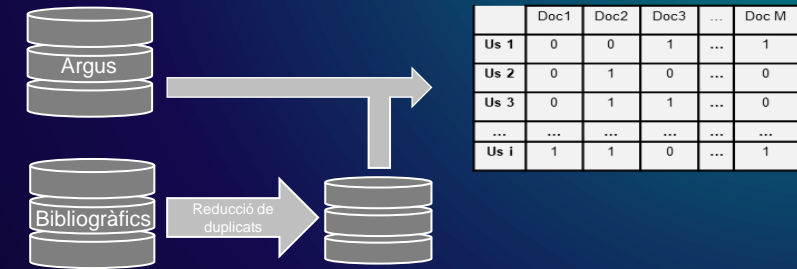
Firstly, it is necessary to carry out in-depth data cleaning to avoid duplication and consolidate the cases of the same books in different languages. There are also cases that need to be refined (e.g. parents who reserve books for their children).

A common problem in recommendation systems is dealing with the enormous volume of data and possible combinations. The solution was to use the collaborative filter algorithm with Euclidean distances applied in distributed calculation in Databricks.

Validity with real data from H2.2019.

Increase in book reserves of 2.3%, discounting trends and seasonality.

Increase in user satisfaction and great reception according to a survey carried out by the Department of Culture





Data & AI stories during COVID times

Red Cross Critical KPIs for Resource Allocation

Seguimiento de operaciones

3 Abril



+540.000

Productos de protección distribuidos



+195.000

Llamadas de seguimiento



+12.000

Llamadas de información social



+80.000

Entregas de alimentos y medicamentos



+27.000

Kits de productos básicos entregados



11.980

Personas voluntarias movilizadas



3.240

Plazas



8

Infraestructuras hospitalarias temporales

73

Albergues activos



15

Centros de operaciones



+305.000

Formaciones abiertas y gratuitas en COVID-19



+500

Más de 500 ambulancias y más de 1200 unidades de emergencia social.



+2.300

Traslados con movilización de afectados

PLAN CRUZ ROJA
RESPONDE
EMERGENCIA CORONAVIRUS

 Cruz Roja



A wealth of Data & AI stories

Over 3000 Big Data & AI Projects

- Pharma. Patient Adherence
- **Pharma. Clinical Trial Optimization**
- Pharma. Prediction of Melanoma from Skin Images
- **Pharma. Toxicity Prediction**
- Banking. Detection of Fraud and Money Laundering
- Banking. Claims Segmentation
- Insurance. Early Customer Service Prediction
- Insurance. Fraud Detection using NLP
- Utilities. Counter Tampering Detection.
- Utilities. Water Network Leak Prediction
- Airlines. Predictive Maintenance of Aircraft Wheels
- Airlines. Optimization of Operations in the face of events.
- Airlines. Luggage on board prediction
- Utilities. Prediction of accidents in Red Eléctrica Ops
- **Finance. Cash Flow Prediction.**
- Gaming. Gambling Behavior Prediction
- Insurance. Risk Modeling
- **Retail. Price Optimization**
- Industrial. Quality Prediction
- Industrial. Demand Prediction
- Retail. Hot Spot Prediction
- Transportation Fuel consumption prediction
- Airlines. Reduce InFlight F&B waste & optimize lounges.
- Energy. Plant Location Optimization
- Retail. Assortment Mix Optimization
- **FMCG. Next Best Action**
- Customer. Channel Optimization
- Customer. Complaint Mngment Acceleration
- Telco. Anomaly Detection in the Network
- **HR. Diversity & Salary Chasm.**
- Telco. Roaming Intelligence
- Telco. Workforce Prediction
- Telco. AI-Driven Process Mining for Logistics
- Telco. Foundation of AI Ops Systems
- **All. Customer Churn Prediction**
- All. Customer Lifetime Value Prediction
- **All. Supply Chain & Ops Optimization**
- All. Campaign Efficiency
- Primary. Crop Optimization
- Primary. Smart Fish Farming
- Sports. Smart Scouting & Player/Team Performance
- Telco. Energy Optimization in 4G/5G Network
- Mining. Resource Demand Planning
- ...
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Disambiguating the AI & Data Markets

Hidden Technical Debt in Machine Learning Systems

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Abstract

Machine learning offers a fantastically powerful toolkit for building useful complex prediction systems quickly. This paper argues it is dangerous to think of these quick wins as coming for free. Using the software engineering framework of *technical debt*, we find it is common to incur massive ongoing maintenance costs in real-world ML systems. We explore several ML-specific risk factors to account for in system design. These include boundary erosion, entanglement, hidden feedback loops, undeclared consumers, data dependencies, configuration issues, changes in the external world, and a variety of system-level anti-patterns.

1 Introduction

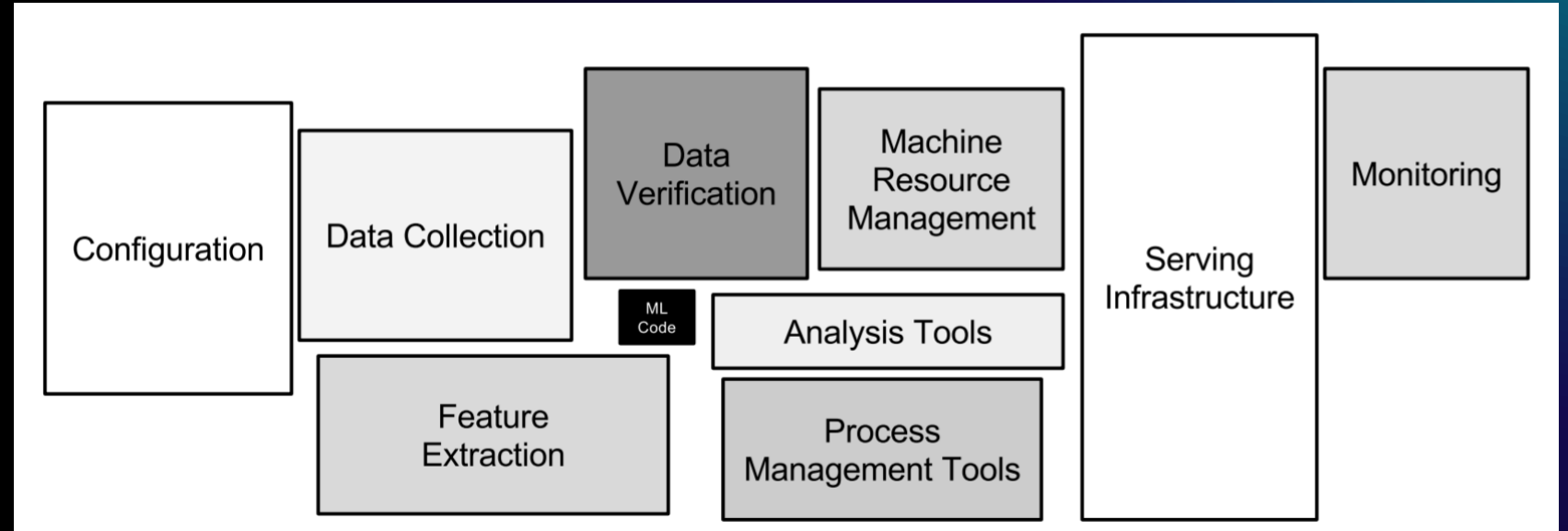
As the machine learning (ML) community continues to accumulate years of experience with live systems, a wide-spread and uncomfortable trend has emerged: developing and deploying ML systems is relatively fast and cheap, but maintaining them over time is difficult and expensive.

This dichotomy can be understood through the lens of *technical debt*, a metaphor introduced by Ward Cunningham in 1992 to help reason about the long term costs incurred by moving quickly in software engineering. As with fiscal debt, there are often sound strategic reasons to take on technical debt. Not all debt is bad, but all debt needs to be serviced. Technical debt may be paid down by refactoring code, improving unit tests, deleting dead code, reducing dependencies, tightening APIs, and improving documentation [8]. The goal is *not* to add new functionality, but to enable future improvements, reduce errors, and improve maintainability. Deferring such payments results in compounding costs. Hidden debt is dangerous because it compounds silently.

In this paper, we argue that ML systems have a special capacity for incurring technical debt, because they have all of the maintenance problems of traditional code plus an additional set of ML-specific

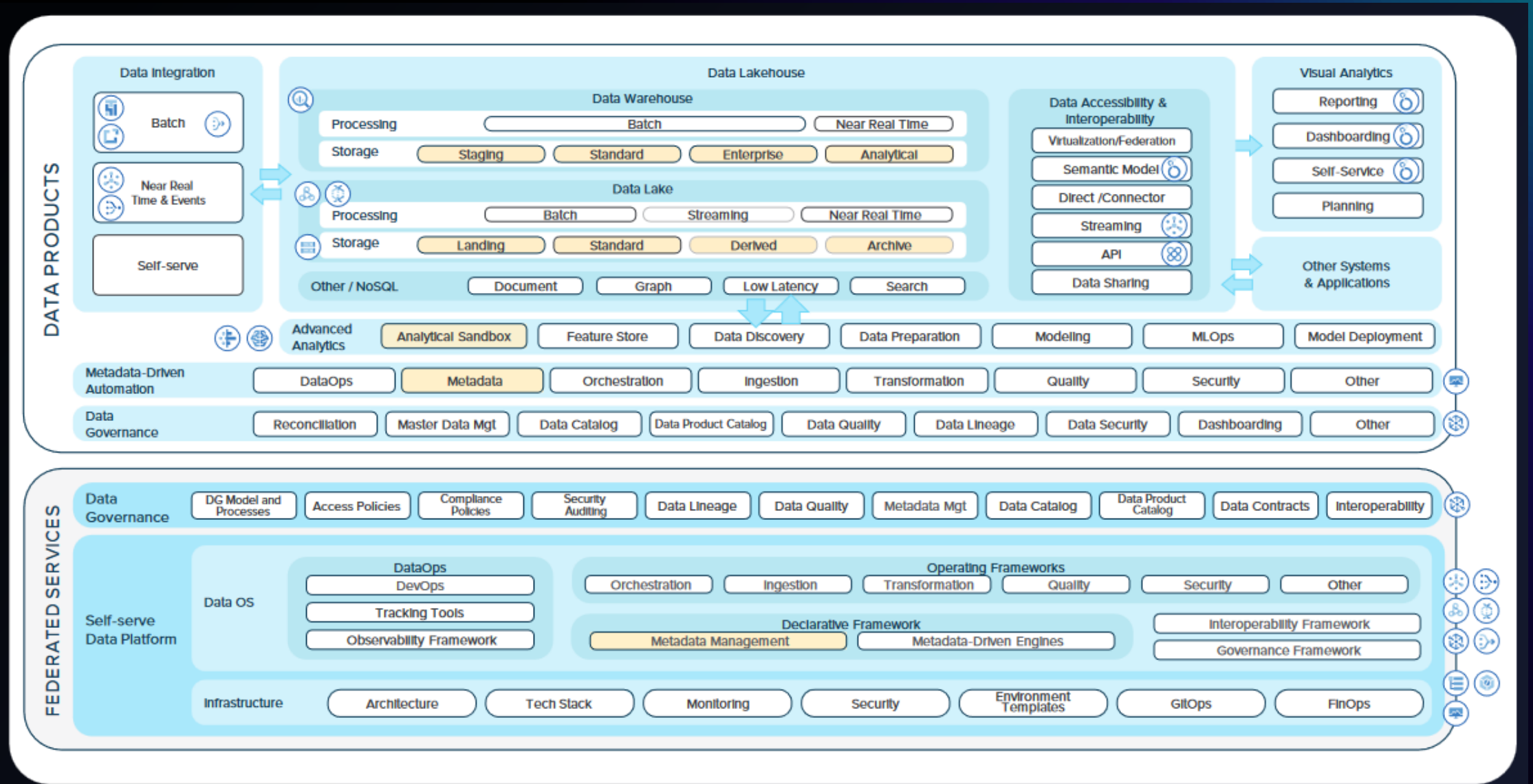
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<https://papers.nips.cc/paper/2015/file/86df7dcfd896fcdf2674f757a2463eba-Paper.pdf>



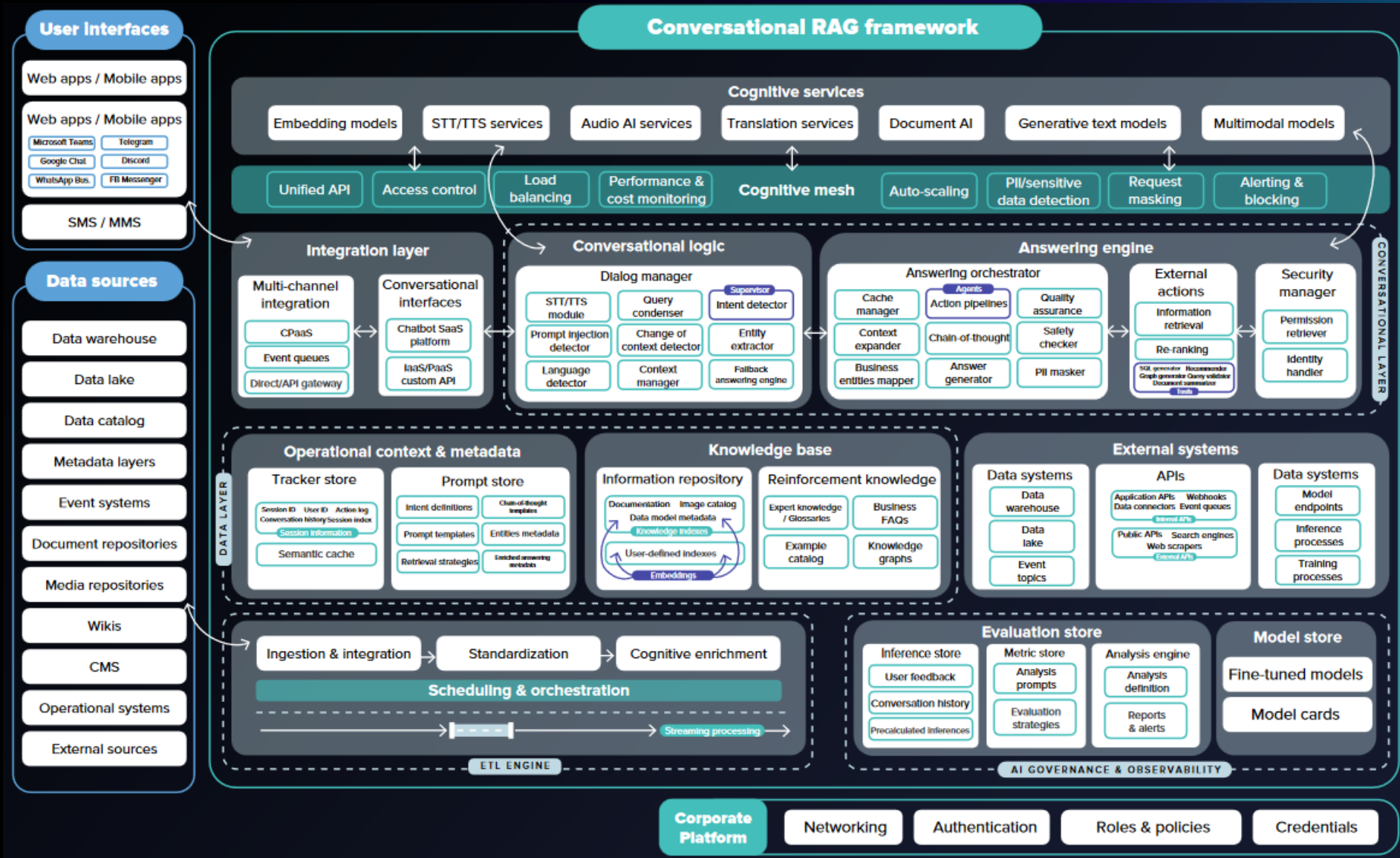
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Well Architected Data Platforms



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Next-Gen AI & Gen.AI Systems





Take Home Message

If you were to ask me, yes, I'd do it again!