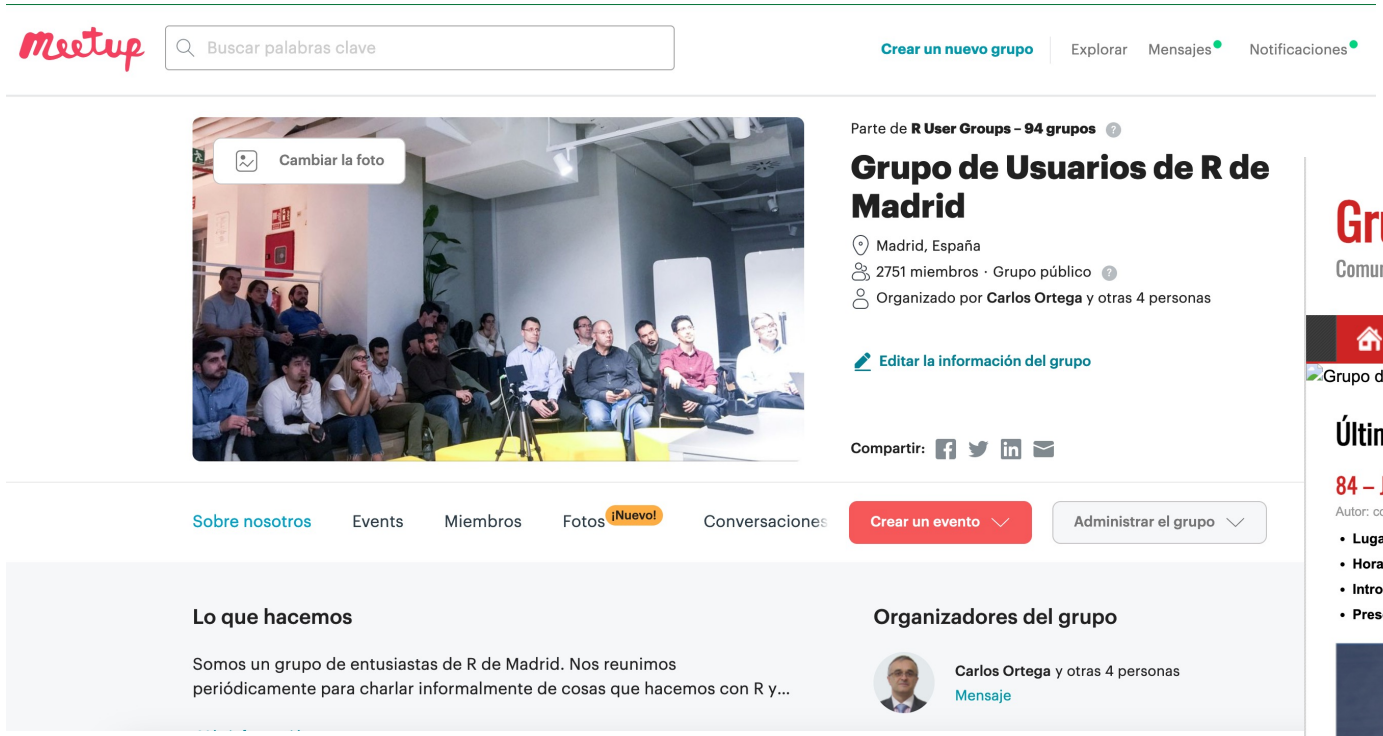
DATA DRIVEN O EXCEL DRIVEN
R Y EXCEL

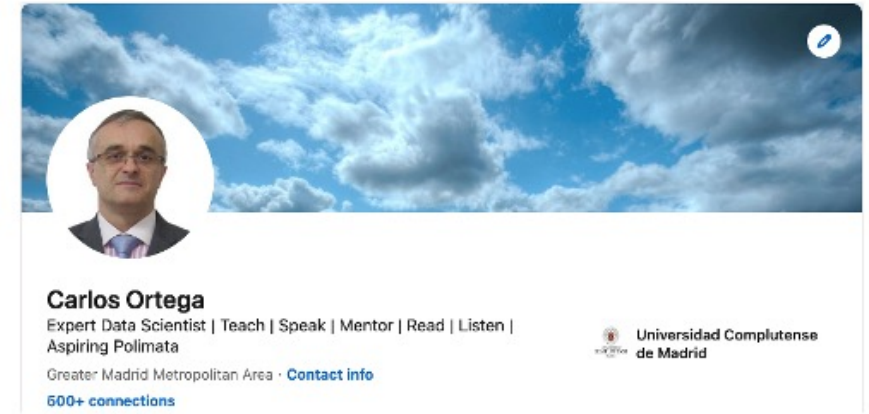
Quality
Excellence

Por si no me conocéis…del mundo de R…



Quality Excellence

Pero mi alter ego…



Quality Excellence

Disclaimer

- Sí, he utilizado ChatGPT, faltaría... Este asistente de inteligencia artificial de última generación me ha ayudado a elaborar algunas partes de esta presentación. Así que, si encuentras algo sorprendentemente inteligente... probablemente fue él.

- Todas las opiniones son exclusivamente mías. Las opiniones expresadas aquí son 100% mías. Así que, si estás de acuerdo, ¡genial! Si no, puedes enviarme tus quejas o felicitaciones directamente a mí.

- Y sí, he usado y sigo usando Excel. No…no solo para abrir y convertir las hojas en csv…No se puede ser perfecto.

Quality Excellence

¿De qué voy a hablar?

- De Transformación Digital en las empresas.
- De la relación entre el uso de Excel en las organizaciones y su nivel de madurez en datos.
- Y de cómo he tenido que lidiar con muchos *"exceles"* como fuentes de datos.
- Finalmente haremos una pequeña demo obteniendo datos de una fuente "open", pero como no en Excel.

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ESTO DEL DATA-DRVIEN...

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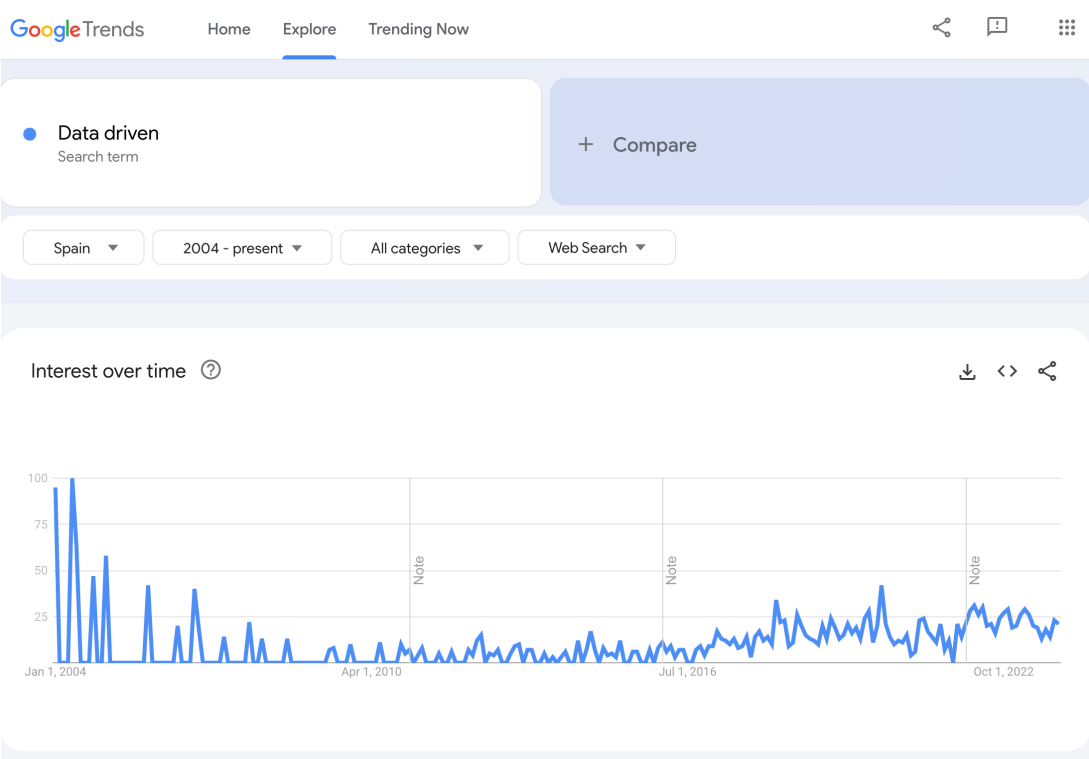
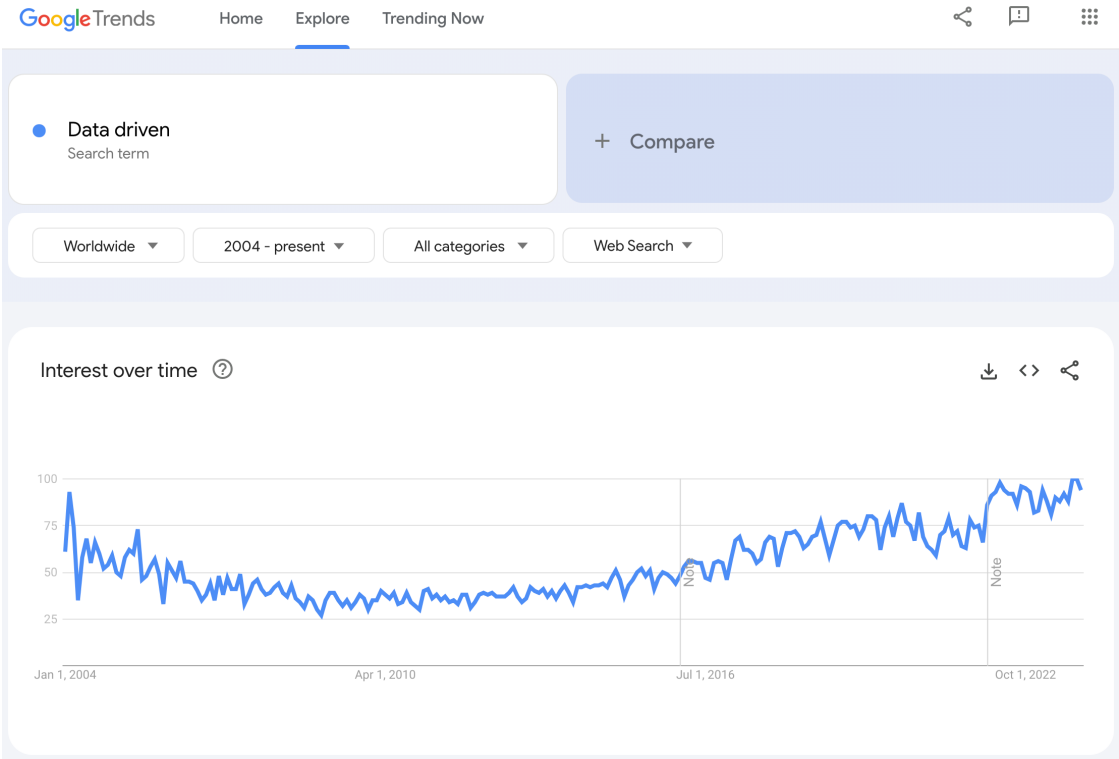
Interés en Data-Driven…

En España y en el resto del mundo





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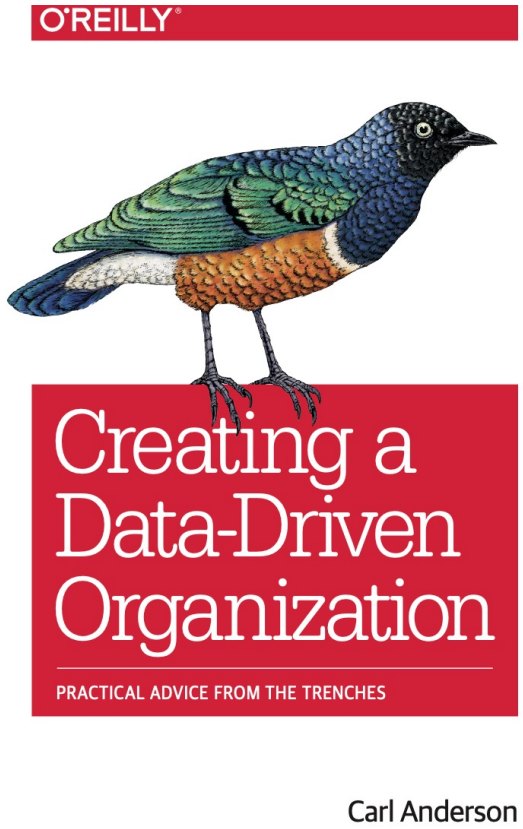
¿Qué es ser Data-Driven?



La orientación al dato consiste en crear herramientas, capacidades y, sobre todo, una cultura que actúe en función de los datos.

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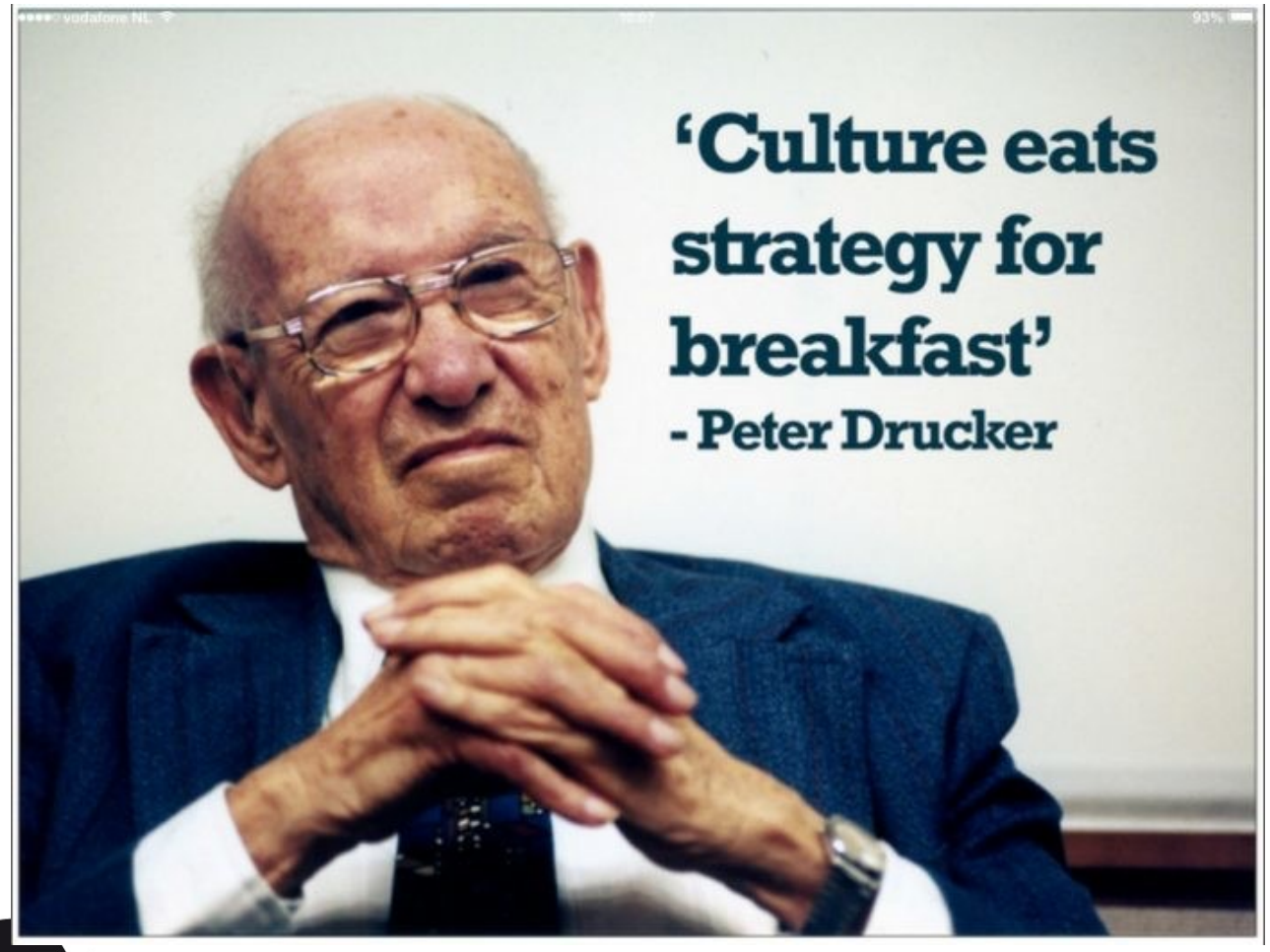
Alto… ¿Cultura?

Oigamos a Peter Drucker…



Peter Drucker

44 languages

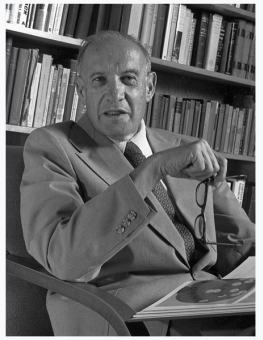
Article Talk Read Edit View history Tools

From Wikipedia, the free encyclopedia

Peter Ferdinand Drucker (/ˈdrʌkər/; German: [ˈdʀʊkɐ]; November 19, 1909 – November 11, 2005) was an Austrian American management consultant, educator, and author, whose writings contributed to the philosophical and practical foundations of modern management theory. He was also a leader in the development of management education, and invented the concepts known as management by objectives and self-control,[1] and he has been described as "the founder of modern management".[2]

Drucker's books and articles, both scholarly and popular, explored how humans are organized across the business, government, and nonprofit sectors of society.[3] He is one of the best-known and most widely influential thinkers and writers on the subject of management theory and practice. His writings have predicted many of the major developments of the late twentieth century, including privatization and decentralization; the rise of Japan to economic world power; the decisive importance of marketing; and the emergence of the information society with its necessity of lifelong learning.[4] In 1959, Drucker coined the term "knowledge worker", and later in his life considered knowledge-worker productivity to be the next frontier of management.[5]

Peter Drucker



Born Peter Ferdinand Drucker

Quality Excellence

Entonces… ¿la cultura se merienda a la estrategia …?

Claro, por eso pasa lo que pasa….

AI is poised to change the world

$3.9T

Projected Business value creation by AI in 2022

Gartner

And most leaders agree

83%

CEOs say AI is a strategic priority

MITSloan Management Review

But AI doesn't make it out the door at most companies

87%

Of Data Science initiatives never make it to production

VentureBeat

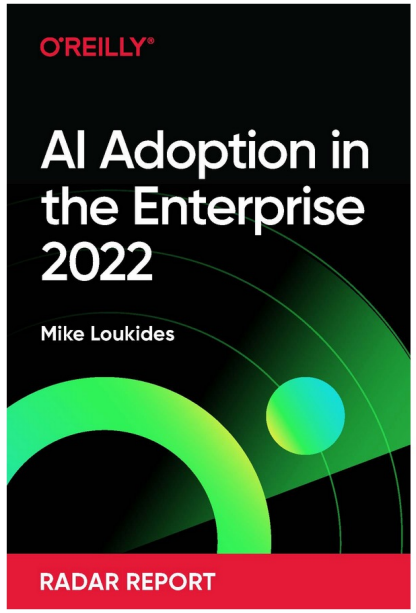
databricks

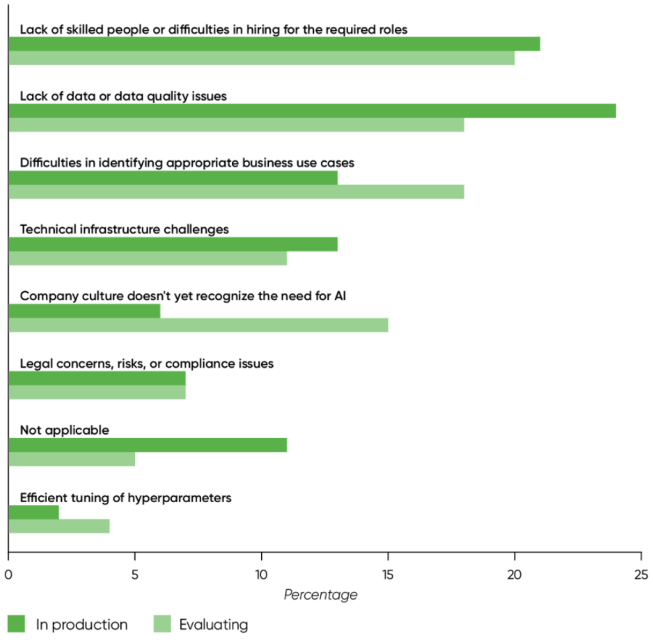
Guido Oswald

Quality Excellence

Seguro…¿no será otra cosa?...

Son varias las razones.





GENTE FORMADA

DATOS

CASOS DE USO

CULTURA

NEWVANTAGE PARTNERS
A WAVESTONE COMPANY

Special Report

DATA AND AI LEADERSHIP

ncipal Challenge to Becoming ta-Driven	2018	2019	2020	2021	2022
ltural Factors | People | Process	80.9%	92.5%	90.9%	92.2%	**91.9%**
chnology Limitations	19.1%	7.5%	9.1%	7.8%	**8.1%**

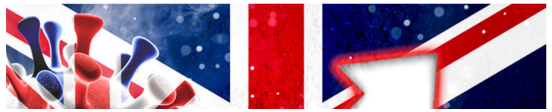
DATOS SÍ, PERO EN EXCEL

Nada de esto importa…

Son muchos los cadáveres en las cunetas.

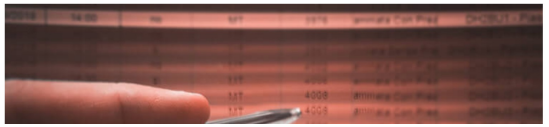
1. Public Health England misplaces nearly 16,000 COVID-19 positive tests

Here's an Excel tidbit that will likely never impact your work. An Excel spreadsheet has a physical limit of precisely 1,048,576 rows.



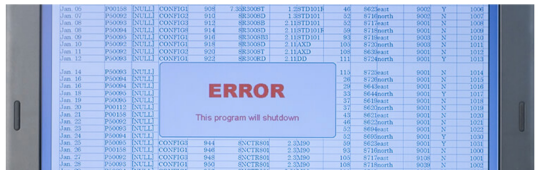
2. AstraZeneca includes confidential company information in a massive mailout

These days, UK pharma giant AstraZeneca is best known as the corporate partner in the Oxford vaccine for COVID-19. Back in January 2012, however, the company's press coverage was much less flattering.



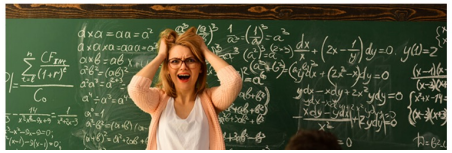
3. Fannie Mae $1 billion+ error

In 2003, U.S. home mortgage company Fannie Mae updated its accounting standards. In doing so, it processed its internal, automated data using spreadsheets that incorporated some additional calculations.



4. University of Toledo's $2.4 million mistake in projected revenue

2004 was already a tough year for the University of Toledo. The state of Ohio had already hit the institution with significant funding cuts.



5. RedEnvelope loses more than a quarter in share value thanks to budgeting error

Ecommerce site RedEnvelope saw its share value plummet by more than a quarter in a single day. Because of a spreadsheet error, the company had wildly overestimated its gross profit margins. They were instead forced to go public with a predicted loss for the quarter between $3 million and $3.5 million.

6. Eastman Kodak's $11 million severance error

In 2005, a faulty spreadsheet caused Kodak's severance pay figures to be off by $11 million. Amazingly, the error affected just a single employee. In a nice bit of corporate understatement, Kodak's CFO attributed the error to "an internal control deficiency that constitutes a material weakness that impacted the accounting for restructurings."

At the time, Kodak was losing over $1 billion per quarter—so, this $11 million mistake didn't make much of a difference in the long run.

7. A $37 million missed Excel cell

Emerson Construction Company was thrilled to be selected as the lowest bidder on a 2003 contract with the U.S. Army Corps of Engineers to build a barracks at Fort Hood, Texas.

Their excitement turned to dismay, however, when they realized their bid calculation somehow skipped a single cell—$3.7 million for electrical work.

The company got off easy, however, when the government allowed it to retroactively add the missing $3.7 million to their bid total. A rival contractor protested the fact that

8. MI5 accidentally bugs 134 telephone numbers

According to an old joke, "military intelligence" is a contradiction in terms. In 2011, British counter-intelligence service MI5 did their best to prove just that.

Because of a formatting error in one of its spreadsheets, MI5 mistakenly applied for user data on phone numbers ending in 000, instead of the actual three digits. As a result, the agency collected completely irrelevant data from 134 unsuspecting (and innocent) citizens.

9. Influential economics research paper proves less than Excel-lent

Noted Harvard economist Carmen Reinhart and Ken Rogoff created a significant stir in 2010 when they presented a research paper entitled "Growth in a Time of Debt."

At the time, the world was still reeling from the global economic meltdown of 2008. Reinhart-Rogoff shared their dismaying findings that economic growth slows dramatically whenever a country's debt exceeds 90 percent of its GDP.

The paper proved extremely influential for the next three years, until a University of Massachusetts professor gave his graduate students an assignment: examine a published economics paper and try to replicate its contents.

10. Banking giant jumps the gun

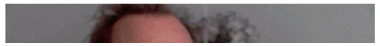
On November 1, 2005, Australian bank Westpac was poised to announce its greatest-ever 12-month profit: a whopping $2.818 billion. Not surprisingly, CEO David Morgan was feeling quite chipper. "I was in my office thinking what an enjoyable 48 hours I had ahead of me," he recalled.

1. JP Morgan Chase's London Whale Incident

Basic Excel flaws and incorrect testing led to JP Morgan Chase losing more than $6 billion in their London Whale disaster. The banking and financial services holding company suffered due to having to use copy and paste for a new Value at Risk model, the process of which was strained due to increasing pressure from the trader to meet deadlines.

2. TransAlta's Clerical Error Terror

Canadian power generator TransAlta suffered losses of $24 million as the result of a simple clerical error which meant they bought US contracts at higher prices than they should have. The culprit here was cut-and-paste and lack of proper review, which should have picked up on the error before the spreadsheet was finalised.



3. Mouchels Pension Fund Fiasco

Outsourcing specialists Mouchel had to endure a £4.3 million profits write down due to a spreadsheet error in a pension fund deficit caused by an outside firm of actuaries. Not only did Mouchel's profits take a huge hit but it also caused their share price to drop and their chairman to resign amid fears they would break their banking agreements.

4. Barclay's Hides Cells Instead of Deleting Them

Banking powerhouse Barclay's accidentally bought 179 more contracts than they intended in their purchase of Lehman Brothers assets in 2008. Someone hid cells containing the unwanted contract instead of deleting them. When the file was converted into a PDF, the cells were made visible again. In the end, Barclays had to swallow the losses on the 179 contracts, costing them an undisclosed sum.

5. London Olympics Oversells Swimming Event by 10,000 Tickets

This was a very simple error that resulted in 10,000 extra tickets being issued for the synchronized swimming event. The person responsible for inputting the figures hit '2' instead of '1' indicating there were 20,000 tickets remaining instead of the actual 10,000.

https://sheetcast.com/articles/ten-memorable-excel-disasters

https://floatapp.com/blog/5-greatest-spreadsheet-errors-of-all-time/

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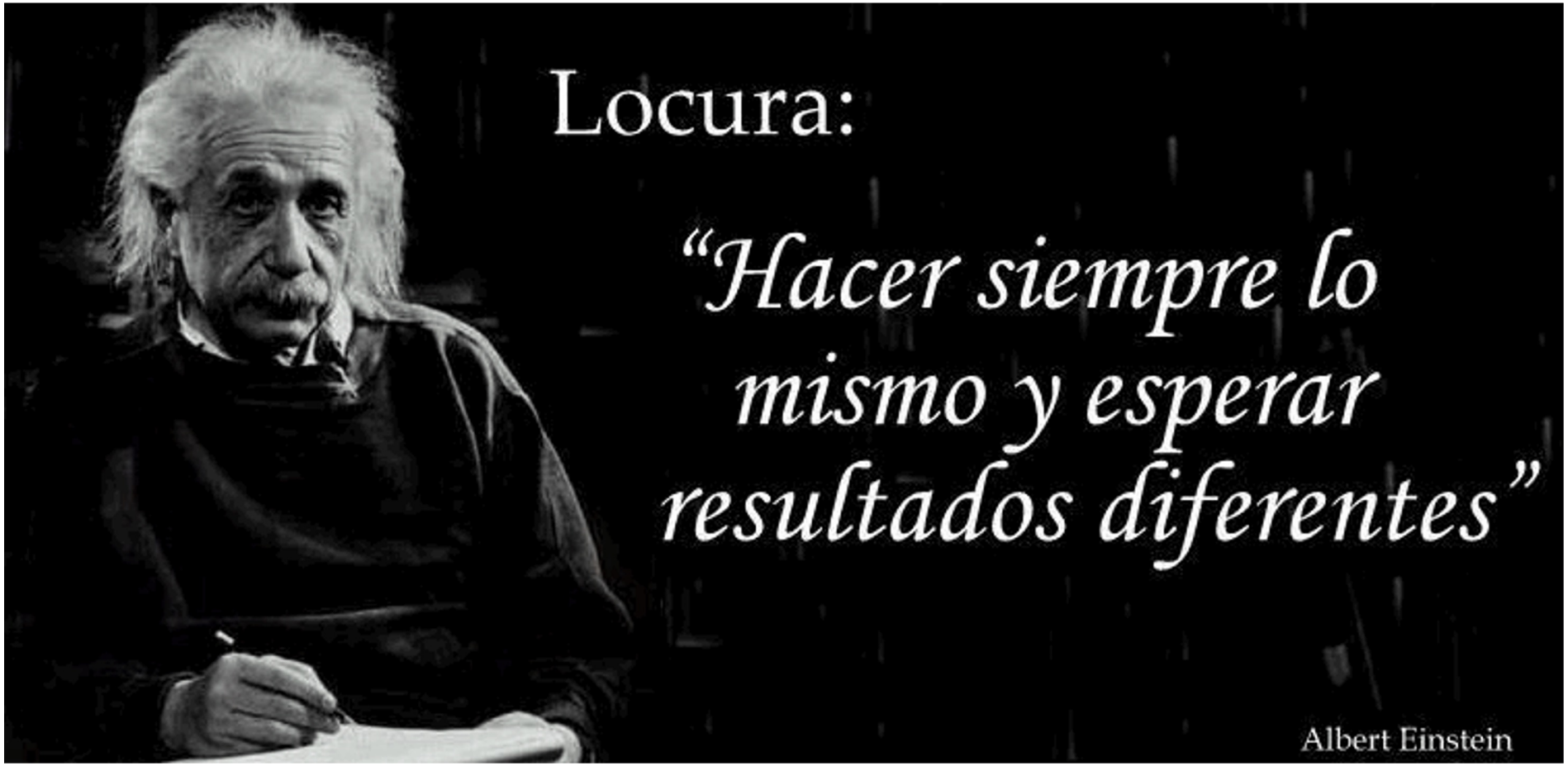
Si esto ocurre ¿por qué seguimos insistiendo?…

Definición de locura…



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¿Hay una explicación un poco más…?

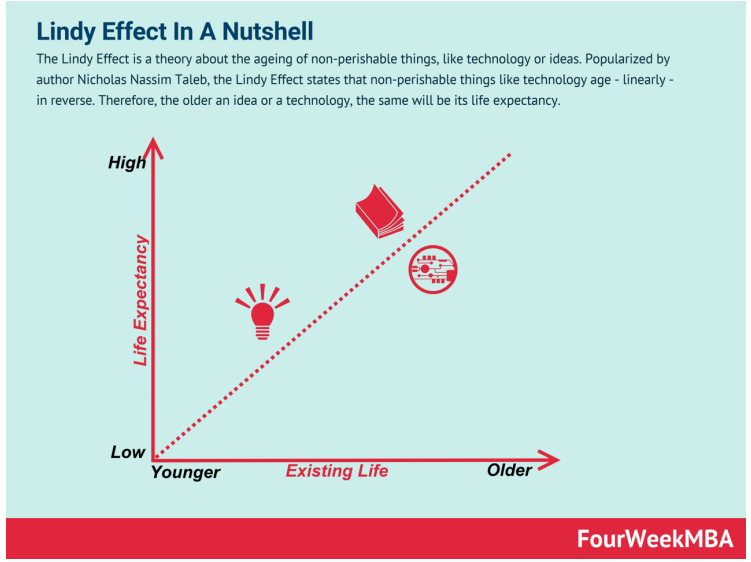
A ver si te gusta esta… ”The Lindy effect”….

THE LINDY EFFECT

THINGS THAT HAVE BEEN AROUND FOR A LONG TIME ARE NOT “AGING” LIKE PERSONS, BUT “AGING” IN REVERSE. EVERY YEAR THAT PASSES WITHOUT EXTINCTION DOUBLES THE ADDITIONAL LIFE EXPECTANCY. THE NONPERISHABLE HAS A LIFE EXPECTANCY THAT INCREASES WITH EVERY DAY IT SURVIVES.

THE OLDER THE TECHNOLOGY, NOT ONLY THE LONGER IT IS EXPECTED TO LAST, BUT THE MORE CERTAINTY CAN BE ATTACHED TO SUCH A STATEMENT.

https://www.clubstreetpost.com/2018/06/discussing-the-lindy-effect/



https://fourweekmba.com/lindy-effect/

In Nassim Nicholas Taleb's 2012 book *Antifragile: Things That Gain from Disorder* he for the first time explicitly referred to his idea as the Lindy Effect, removed the bounds of the life of the producer to include anything which doesn't have a natural upper bound, and incorporated it into his broader theory of the Antifragile.

> If a book has been in print for forty years, I can expect it to be in print for another forty years. But, and that is the main difference, if it survives another decade, then it will be expected to be in print another fifty years. This, simply, as a rule, tells you why things that have been around for a long time are not "aging" like persons, but "aging" in reverse. Every year that passes without extinction doubles the additional life expectancy. This is an indicator of some robustness. The robustness of an item is proportional to its life! [9]

https://en.wikipedia.org/wiki/Lindy_effect

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Hmmmm… ¿algún ejemplo de este “Lindy Effect”.?

Ja, ja… claro…

Merry Christmas (Mariah Carey album)

23 languages

Article Talk Read Edit View history Tools

From Wikipedia, the free encyclopedia

Merry Christmas is the fourth studio album by American singer-songwriter Mariah Carey, and her first Christmas album. Released by Columbia Records on October 28, 1994, at the peak of the initial stretch of Carey's career, between *Music Box* (1993) and *Daydream* (1995), the album features cover versions of popular Christmas songs in addition to original material. Carey worked with Walter Afanasieff, with whom she wrote all of the original tracks, as well as producing Carey's interpretations of the covered material. Three singles were released from the album, of which "All I Want for Christmas Is You" went on to become one of the best-selling singles of all time and the best-selling Christmas ringtone in the United States.

Critical response to the album's contemporary Christmas theme was mixed. Some music critics complimented the "gospel and soul-inflected" vocals and even called it "Carey's best record" to date. Re-released on multiple occasions in various formats since its debut, the album has sold 5.7 million copies in the United States as of December 2019

Martes y 13 - Las empanadillas de Encarna

Raphael- EL TAMBORILERO

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Venga… pero un ejemplo en esto de tecnología…

Difícil me lo pones… ☺…

google.com

Google

ofertas cobol
Madrid

Jobs | Saved | Alerts

Location | Date posted | Language | Type | Company type | Employer

Feedback Learn more

2 km | 10 km | 25 km | 50 km | 100 km | 300 km | Anywhere

All | Madrid | Alcobendas | Tres Cantos | Boadilla del Monte

Desarrollador/a Cobol
Digital Talent Agency
Madrid
via LinkedIn
16 hours ago Full-time

Programador/a Cobol
Sopra Steria
Madrid
via LinkedIn
24 hours ago Full-time

Consultores Host Cobol CICS..
SERIT Consulting
Madrid
via LinkedIn
20 hours ago Full-time

Analista COBOL CICS DB2 JCL
Incoming Domain
Madrid
via Tecnoempleo
6 days ago €21K–€30K a year Full-time

New job alerts

Desarrollador/a Cobol

SAVE

Digital Talent Agency
Madrid

Apply on LinkedIn | Apply on Indeed | Apply directly on Tecnoempleo | Apply on Talent.com

16 hours ago Full-time

Programador en COBOL - Zemsania

¡Únete a nuestro equipo de profesionales especializados en tecnología!

En Zemsania una empresa especializada en la selección de perfiles tecnológicos estamos buscando un Programador en COBOLpara formar parte de nuestro equipo de expertos en desarrollo de aplicaciones mainframe. Si tienes experiencia y pasión por la programación ¡

Requisitos del puesto
- Experiencia mínima de 2 años en desarrollo de aplicaciones u
- Habilidades de resolución de problemas y atención al detalle.
- Excelentes habilidades de trabajo en equipo y comunicación.
- Puedes desarrollar el trabajo desde cualquier punto de Españ

¿Por qué unirte a Zemsania?

Typical Pay for this Type of Work

Indeed	Glassdoor	Jooble
€17k–56k per year	€24k–52k per year	€2.4k–2.8k per month
Analista Programador/A Cobol	PROGRAMADOR COBOL	Programador Cobol
Based on local employers	Based on local employers	Based on local employers

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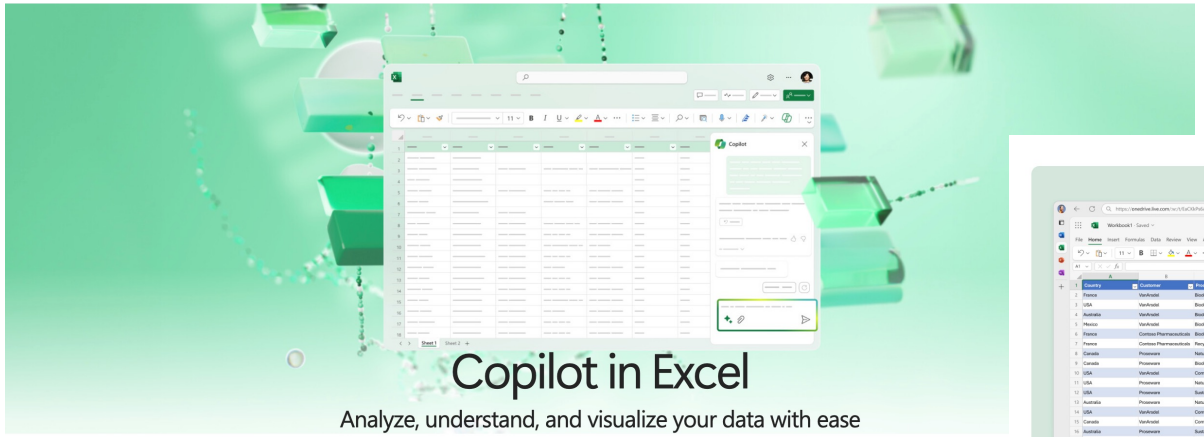
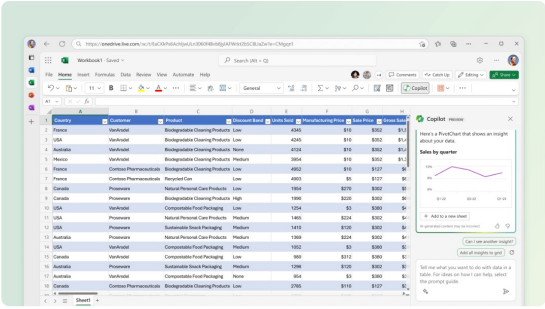
Entonces el Excel seguirá entre nosotros…

Sip.. y ahora con e$$teroide$$…

Microsoft | Support Microsoft 365 Office Products Devices More Buy Microsoft 365 All Microsoft





Go deeper with data

Use Copilot to help you explore and understand your data better. Have access to Copilot? Try now.

Try in Excel

GET STARTED >

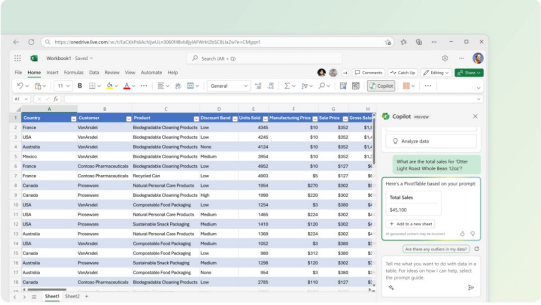
Copilot works alongside you

Identify insights

Let Copilot help analyze and visualize your data. Have access to Copilot? Try it today.

Try in Excel

LEARN MORE >



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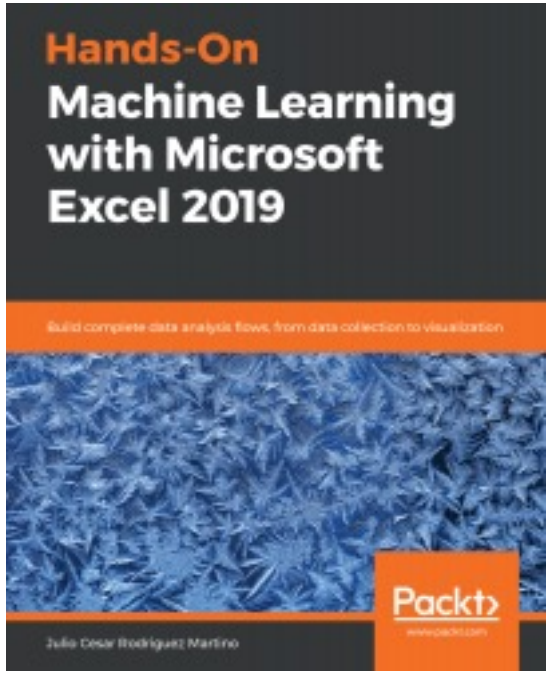
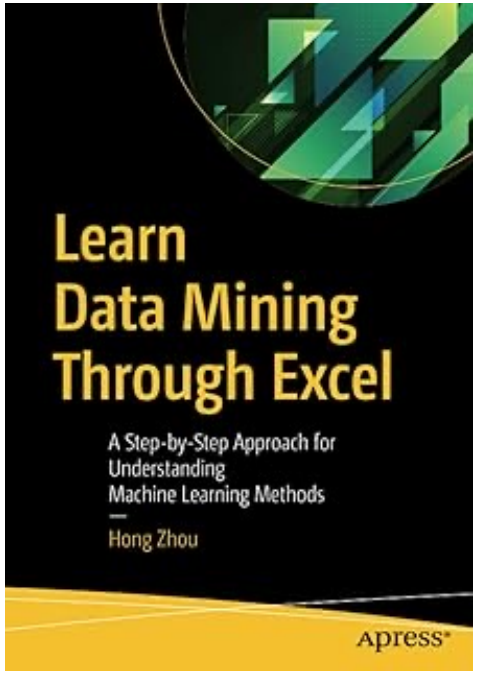
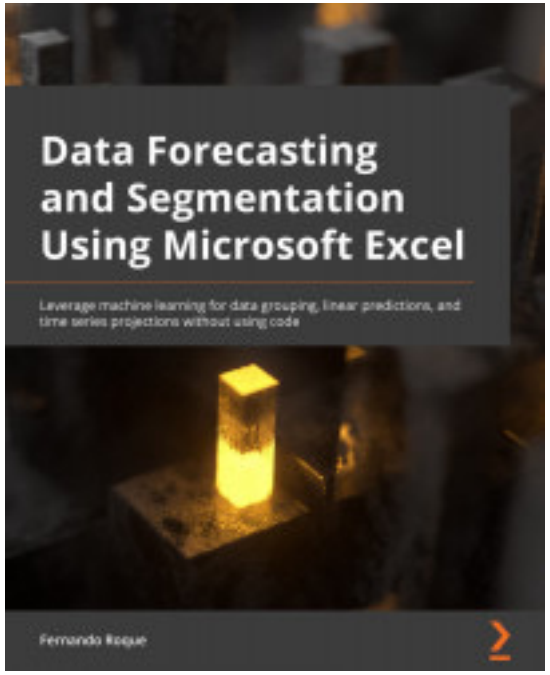
https://support.microsoft.com/en-us/copilot-excel

Entonces el Excel seguirá entre nosotros…

Y algunos van más allá…







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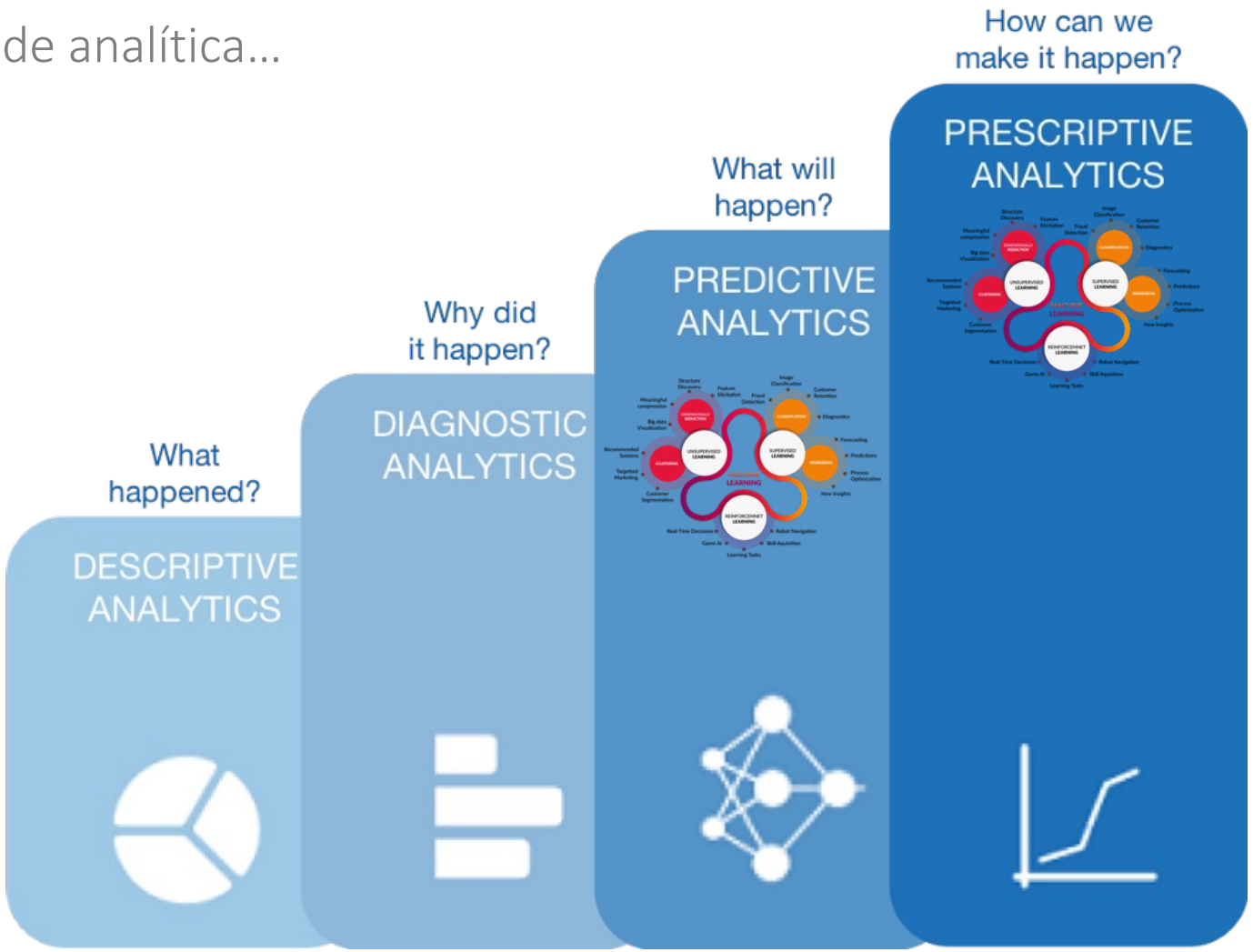
¿Y el Excel y el Data-Driven?…

Vamos a ello… tipos de analítica…



https://surenharish007.medium.com/types-of-data-analytics-a950e763767b

¿Y el Excel y el Data-Driven?…

Vamos a ello…madurez del dato..

A blueprint for data fluency

	Infrastructure	People	Tools	Organization	Processes
Data Reactive	Data is collected on ad-hoc basis with disparate tools, and there is no trusted, centralized data storage ✓ **Develop a data infrastructure strategy**	No one has the skills to work with data — the organization does not have a data culture ✓ **Prove value with proof of concept** ✓ **Build executive support** ✓ **Center learning around data strategy** ✓ **Invest in data infrastructure talent**	Variety of ad-hoc legacy tools to work with data ✓ **Prioritize infrastructure, and people**	There is no data team, and no data strategy to support it ✓ **Prioritize infrastructure, and people**	Any data work is done on ad-hoc basis ✓ **Prioritize infrastructure, and people**
Data Scaling	Only a few key experts understand how data is accessed in the organization. There is no organization-wide access to, or trust in data ✓ **Centralize data storage** ✓ **Establish data governance and quality policy** ✓ **Define data access for high-impact teams**	Minimal data culture with very few people believing in the importance of data or having the skills to work with data ✓ **Reward change agents and champions** ✓ **Define and outline data culture** ✓ **Set the stage for organization-wide upskilling**	Mostly legacy tools with ad-hoc use of modern tooling ✓ **Provide access to inclusive modern tooling** ✓ **Align tooling with infrastructure strategy**	Data strategy in place — with no centralized data team or embedded expertise set in motion ✓ **Define data team organizational model**	Very few, limited data processes exist in siloed teams ✓ **Define data team processes with other business units**
Data Progressive	Data is accessible, and data infrastructure is maturing. However, data is not easily discoverable, compliant, understood, or actionable. ✓ **Democratize data access with data discoverability and management tools** ✓ **Strengthen data quality and operationalize data**	Data is strategic, but underutilized throughout the organization. Organization-wide data literacy is lacking, and data upskilling is still limited. ✓ **Roll out organization-wide data upskilling fit for all data personas** ✓ **Assess, track, & reward skill development** ✓ **Start innovating with data**	Modern tooling accessible, however limited data democratization hinders value. ✓ **Develop frameworks to democratize data and lower barrier to entry to working with tools**	Data team set in place, however impact is limited to requests and analysis ✓ **Develop a hybrid model of embedded and centralized, to drive data strategy and expand value**	Mature data processes for high data competency teams only ✓ **Develop scalable data processes through organization by centralizing shared insights, promoting collaboration, and lowering barrier to entry**
Data Fluent	Data is collected, discoverable, reliable, understood, compliant, and actionable throughout the organization ✓ **Innovate and automate infrastructure processes** ✓ **Monitor data products in production**	Everyone has the skills necessary to work with, and understand data. Continuous learning is part of the data culture. ✓ **Keep learning central to organization success** ✓ **Measure skill matrix development through organization**	Modern tooling and frameworks enable higher adoption and easier data driven decision-making ✓ **Refine frameworks and contribute to open-source community** ✓ **Invest in collaborative tooling**	Organizational model for scalable data science ✓ **Refine ad-hoc organizational models and enable further democratization**	Data processes to scale collaboration and efficiency ✓ **Center collaboration at the heart of data processes**

datacamp

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¡Soy Data-Driven!, !uso Excel!....

Ja,ja...¿Seguro?

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Me han pasado unos datos en Excel con colores 👷 Y los colores tenían significado: bajada de precio, promoción, descuento, subida de precio, etc 👷 O sea, tenía que procesar los colores 👷👷 ¿Cómo lo he hecho?

Hace un par de años me llegaron otros datos con colores. Lo saqué adelante pero me quejé un poco por aquí.

Y fue Carlos Ortega quien me dio la pista: la librería de R tidyxl.

Se puede hacer con otras librerías, sí. Pero esta lee el fichero muy rápido y en 15 líneas de código he tenido toda la gestión de colores hecha.

Gracias, Carlos. Me diste la pista hace ya tiempo y por fin he podido aplicarla. Me has simplificado un montón.

P.D. Voy a empezar a ofrecer servicios de freelance para procesar Excel con colores, porque veo que hay suficientes (demasiados) y a mí ya se me está dando bien 😂

See translation

	I	J	K	L
24	100	110	120	110
25	120	120	130	130
26	135	135	140	120

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Hace poco me echaron en cara que usaba muchas librerías de R relacionadas con Excel (readxl, writexl). Pues sí, qué le voy a hacer. No trabajo con AWS ni con Azure: me pasan muchos datos en Excel. Y luego los analizo como puedo.

Sinceramente, me da igual que los datos estén en Excel. Si un cliente tiene poca cantidad de datos, entiendo que los guarde en Excel. Sería mejor CSV, sí, pero bueno. C'est la vie.

El caso, que no hace falta hacerse cuenta en AWS para almacenar unos ficheros Excel.

Pero sí pido una cosa. Excel no tiene un formato estándar para guardar datos: te permite hacer todo tipo de burradas. Porque es una hoja de cálculo: no un formato de almacenamiento. Y eso dificulta mucho automatizar el trabajo de lectura de datos.

Por favor, si vas a almacenar datos en Excel, sigue ciertas directrices para que eso no sea un desastre y se pueda leer de manera adecuada.

A continuación, te propongo 13 buenas prácticas para que, cuando guardes datos en Excel, tus ficheros puedan formar parte de procesos de análisis (una de ellas es cortesía de mi suscriptores):

1. Los nombres de columnas irán todos en minúsculas.
2. Las palabras de un nombre de columna irán separadas por barras bajas (nada de espacios).
3. Los nombres de columnas no llevarán tildes, ni eñes... solo caracteres del alfabeto que usan los ingleses.
4. Los nombres de columnas no empezarán por número (aunque pueden contenerlos en lo demás).
5. Si una columna indica una fecha, irá en formato yyyymmdd (o sea, 20220610).
6. La tabla empezará en la primera fila y en la primera columna (celda A1).
7. La primera fila serán los nombres de columnas.
8. No habrá filas extras con comentarios ni con cálculos de sumas totales.
9. No será una tabla dinámica.
10. La tabla no tendrá formato (como consecuencia, no se hará distinciones de columnas por colores o tipo de letra).
11. Los datos útiles estarán todos en la primera pestaña del Excel o todas las pestañas serán útiles (y todas seguirán todas las reglas).
12. No habrá pestañas ocultas.
13. No habrá celdas combinadas.

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https://www.linkedin.com/posts/analisisdedatos_hace-poco-me-echaron-en-cara-que-usaba-muchas-activity-6946763650372136960-_qJR/

A ver.. a ver… esas reglas!..

☺…Sí… en cuanto leas la última se te habrá olvidado la primera…Son los “pecados de Leo”.

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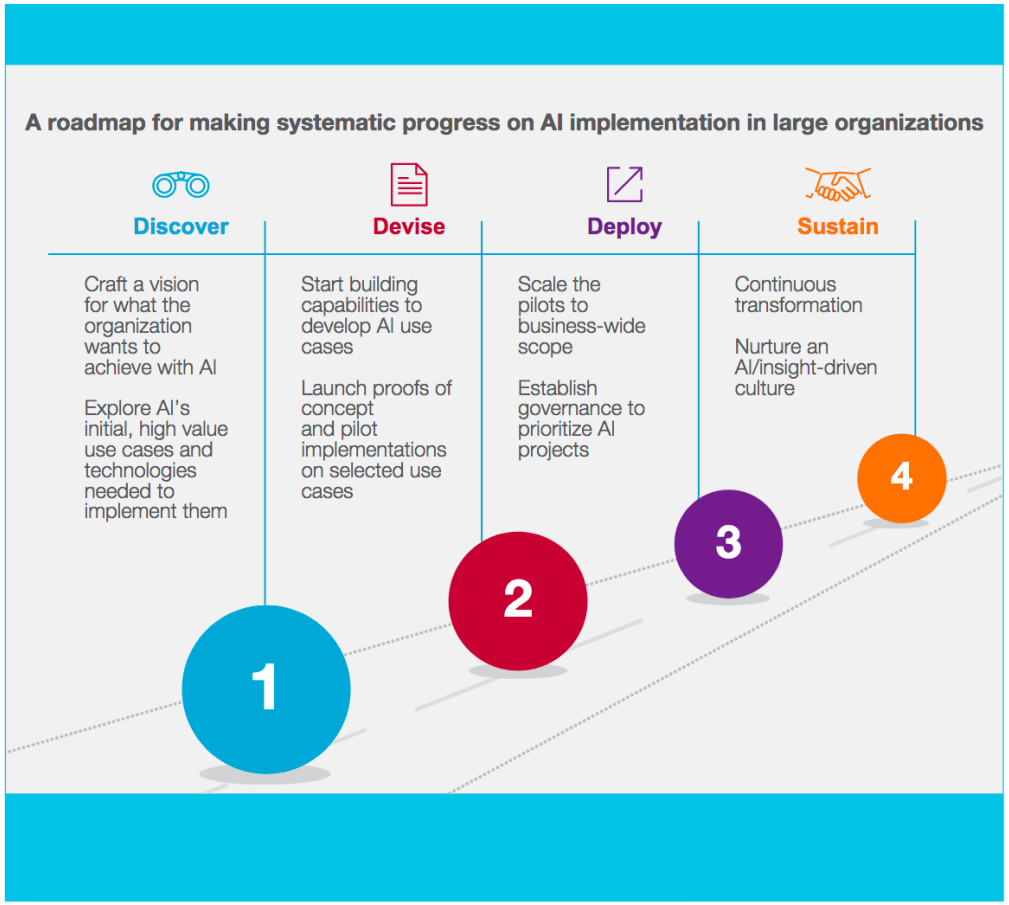
¿Y el Excel y el Data-Driven?…

Vamos a ello…madurez del dato..

Tela!	Ánimo chaval!	Ya queda menos!	
El contenido de los ficheros incluye los “pecados” de Leo.	Los nombres de los ficheros cambian cada vez que los compartes, tienen espacios, números, son del tipo “Libro 1.xlsx”	La estrategia de intercambio de datos se basa en ficheros de Excel. Que sueles compartir por e-mail.	
-2	-1		0



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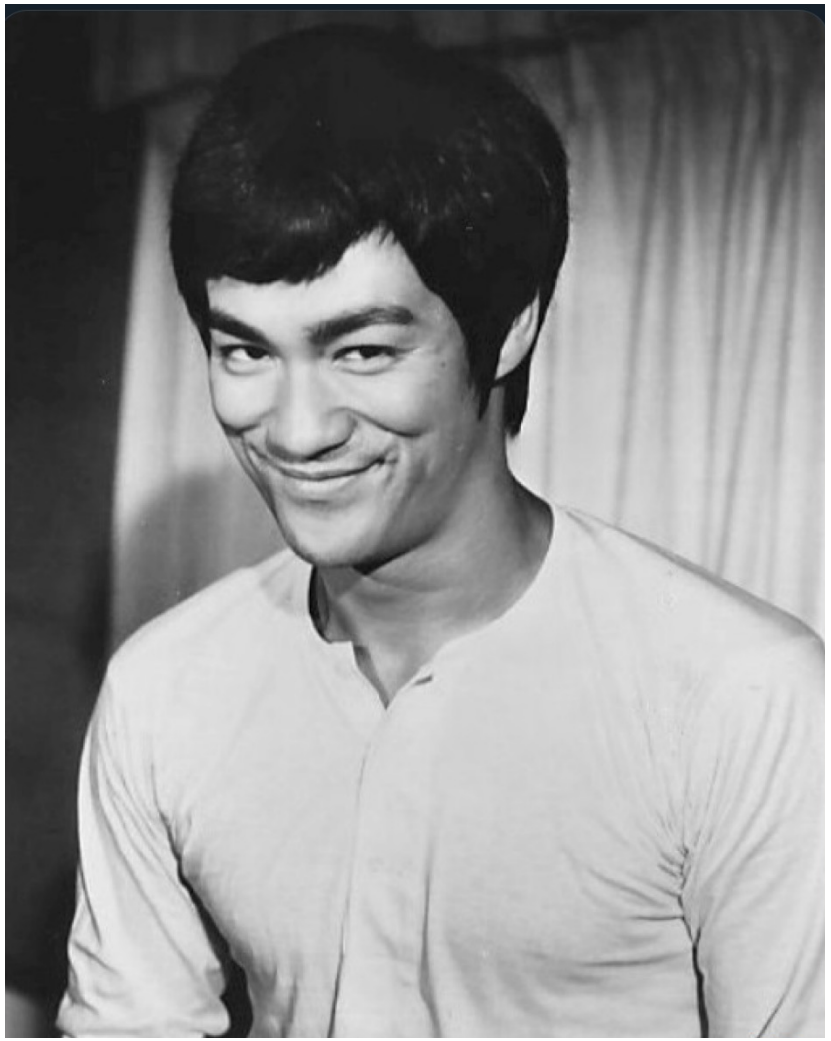
Venga demo….

Aviso un Excel “chungo”…



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¿Qué librerías para procesar Excel recomendaría?….

Pues solo las que uso …

- Suelo usar preferentemente “SheetReader”, es la más rápida (C++) aunque en algunos casos me ha dado algún problema, en esos casos uso “readxl”.
  - Los tiempos de procesado, especialmente para ficheros grandes (>30Mb).
  - Es 2-3x más rápido que “readxl” y apenas ocupa memoria.
  - Y su sintaxis de lectura es equivalente a la de “readxl”.
  - (por cierto, no tienen logo.. Se lo voy a proponer… ☺… qué menos con lo que me han ayudado).
- “readxl” es limpio en su instalación (no Java). Es consistente pero lento y carga la RAM.

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¿Qué librerías para procesar Excel recomendaría?….

Las que no uso y porqué…

- No uso:
  - “openxlsx / openxlsx2”: son más lentos que “SheetReader” y no veo ventajas con respecto a “readxl”
  - “tidyxl”: tengo la suerte de no haberme encontrado con ficheros Excel con colores en las celdas.
  - “XLConnect”: Requiere “rJava”… ☹.
  - “bulkreadr”: Recientemente ha salido un nuevo paquete para la lectura en paralelo múltiples tipos de ficheros (Excel, Google Sheet, CSV), etc.

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¿Qué librerías para procesar Excel recomendaría?….

Para qué las uso…

- Proceso en forma secuencial (en bucle) para gestionar las especificidades de algunos ficheros en particular. Llego a procesar históricos desde 2019, un fichero por mes (30-50Mb).

- Cuando compruebo que hay consistencia en los ficheros origen, paralelizo. El procedimiento más sencillo es usar “mclapply()”.
  - Lamentablemente en un entorno “Excel-Driven” esta situación se produce en muy pocos casos.
  - Y me ha ocurrido que lo que venía siendo consistente, deja de serlo.

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¡Gracias!

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