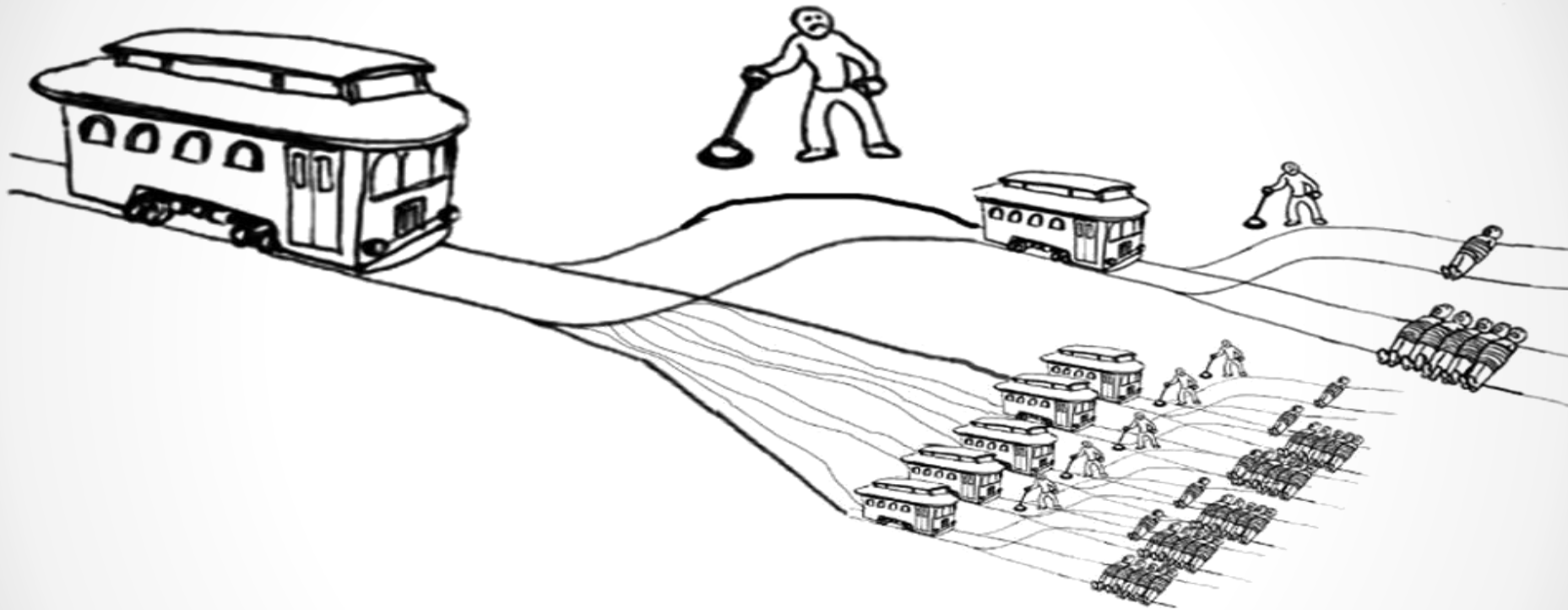


Software libre como soporte integral TIC para investigación



RedIRIS



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

/rdlab

Jornadas Técnicas RedIRIS
Mayo 2024

Gabriel Verdejo Álvarez
Computer Science Department
gabriel@cs.upc.edu
<https://rdlab.cs.upc.edu>

Índice

- Sobre nosotros	3
- El reto	4
- /rdlab UPC	5
- Free/non-free software vs Proprietary	7
- TCO	10
- ¿Y cual es la solución?	14
- Referencias	17

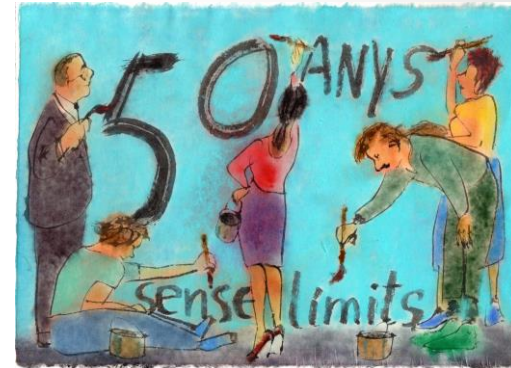
TODOS los datos citados en la presentación tienen sus fuentes en el de apartado referencias

Sobre nosotros...

- **Contexto:**

➤ UPC, Universitat Politècnica de Catalunya, <https://www.upc.edu>

- Institución pública
- Investigación y educación superior
- Ingeniería, arquitectura, ciencias y tecnología
- Desde 1971



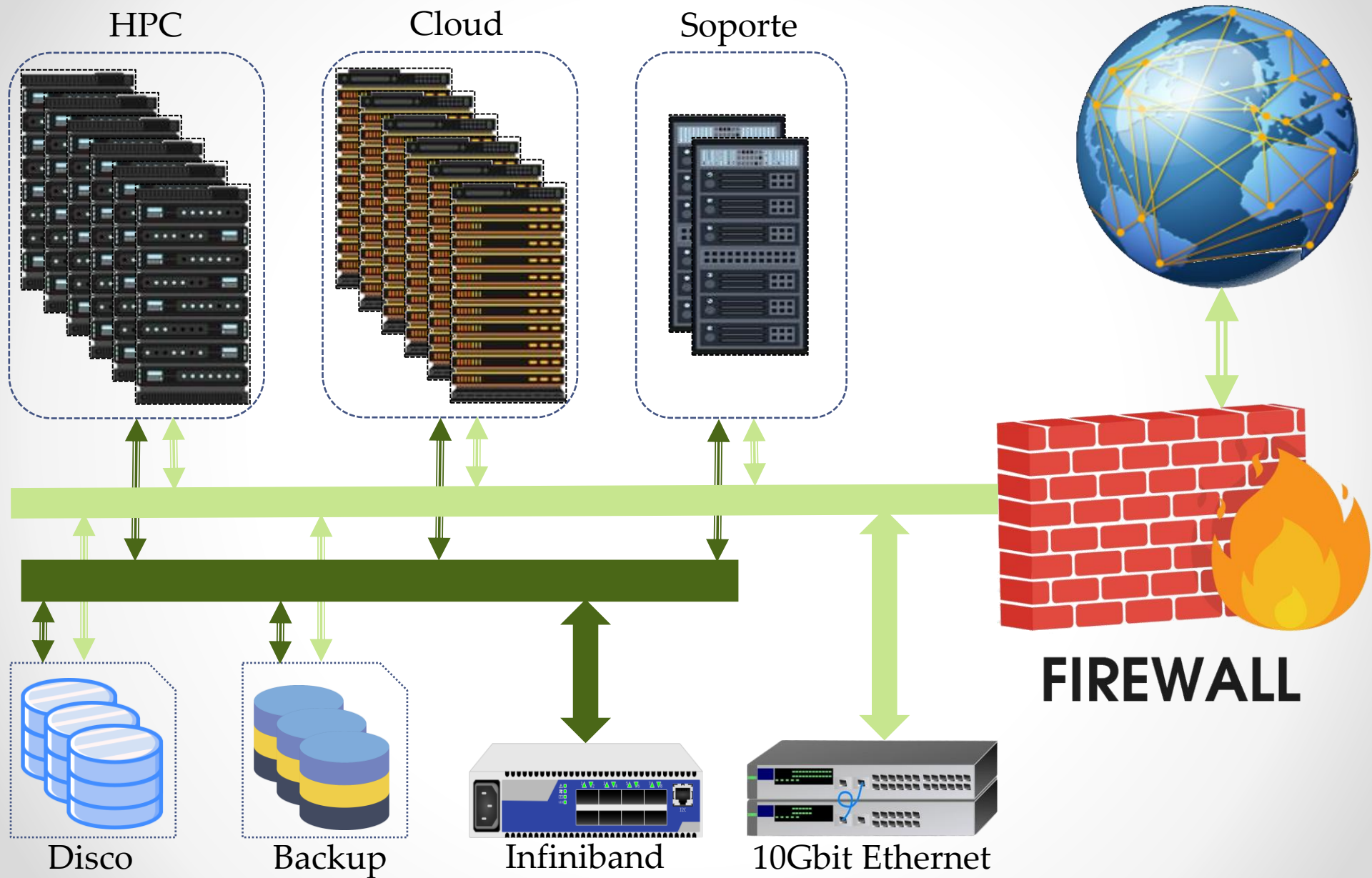
➤ /rdlab, Research and Development Lab, <https://rdlab.cs.upc.edu>

- Dedicado al soporte TIC de grupos de investigación
- Colaboramos con +20 grupos y 600 investigadores (UPC + colaboradores)
- Proyectos nacionales/europeos y de transferencia de tecnología (+65)
- Especializados en HPC y servicios Cloud para la investigación
- Gestionamos más de 200 servidores físicos y 300TBytes de almacenamiento
- Desde 2010, Computer Science Department (<https://www.cs.upc.edu>)

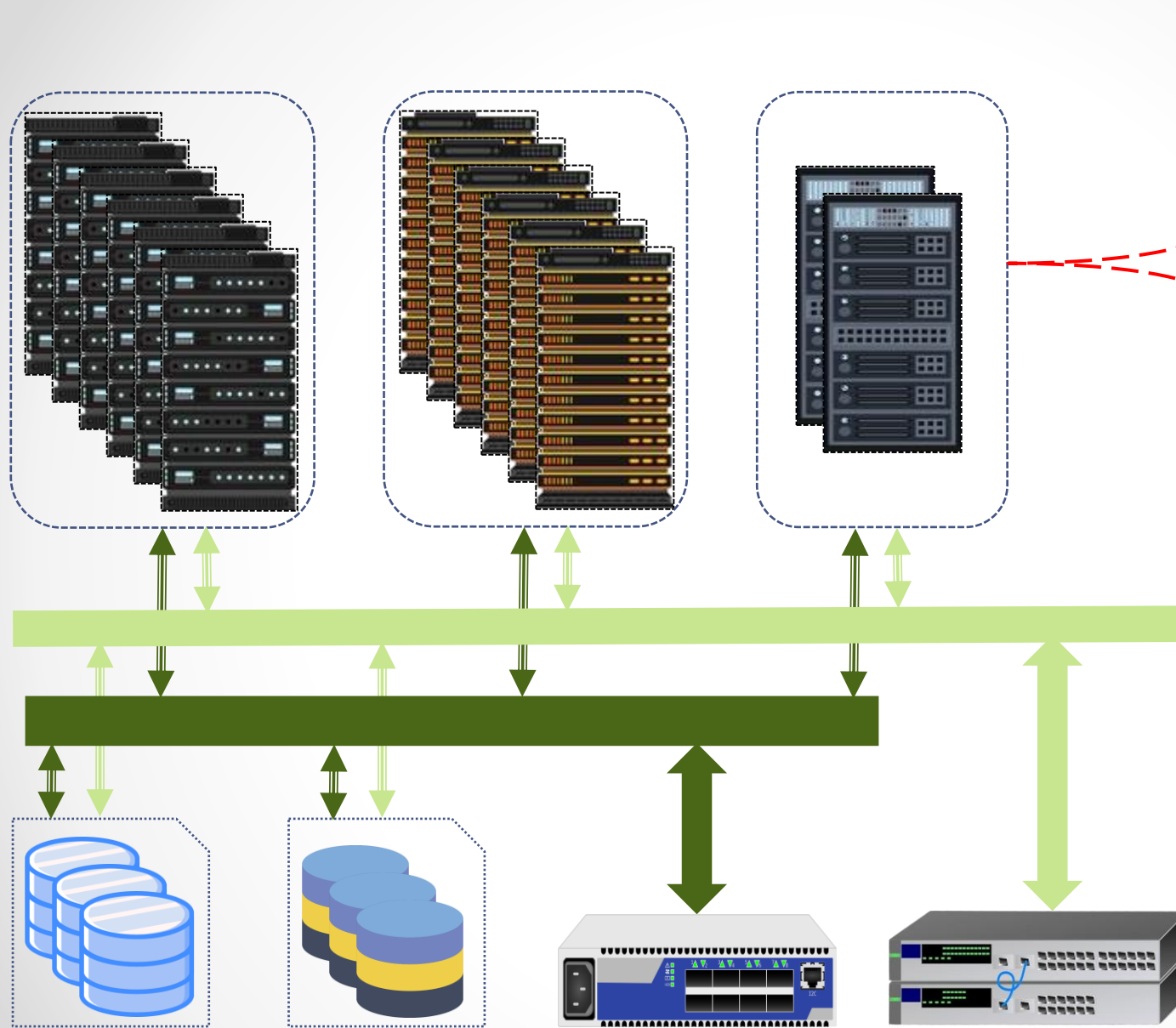
El reto



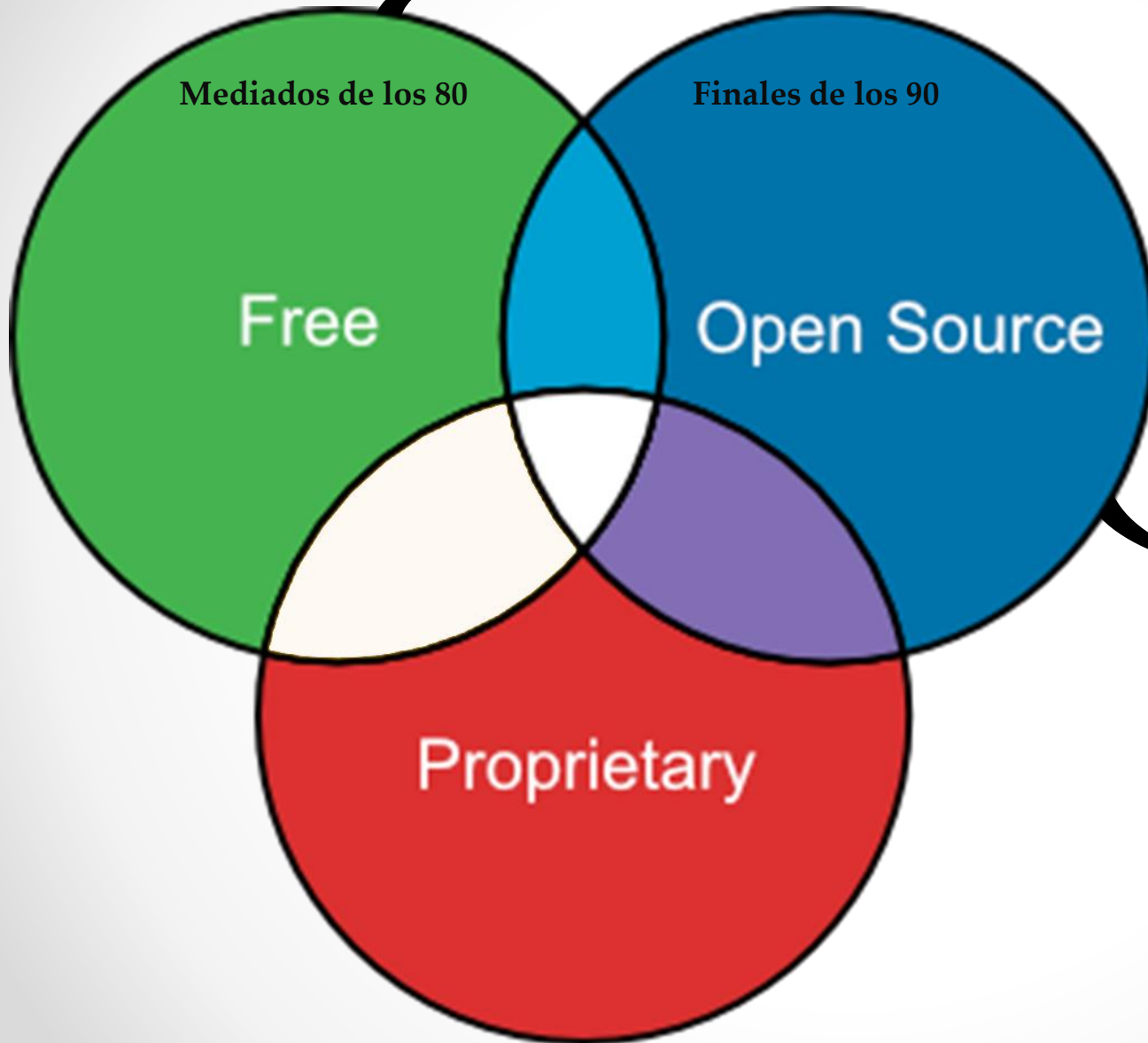
/rdlab UPC: arquitectura para investigación



/rdlab UPC: "software libre"



Free/non-free software vs Proprietary



 **FREE SOFTWARE FOUNDATION**

 **FOSS**
open source®
initiative **FLOSS**

Libre Software



Software, software... ¿software?



- ¿Software “bueno” vs Software “malo”?

- Caso (ransom)Vmare (Marc Bria dixit)
- Caso XZ utils (public domain license ©)

- Free hardware / OSH-OSHW vs Propietario

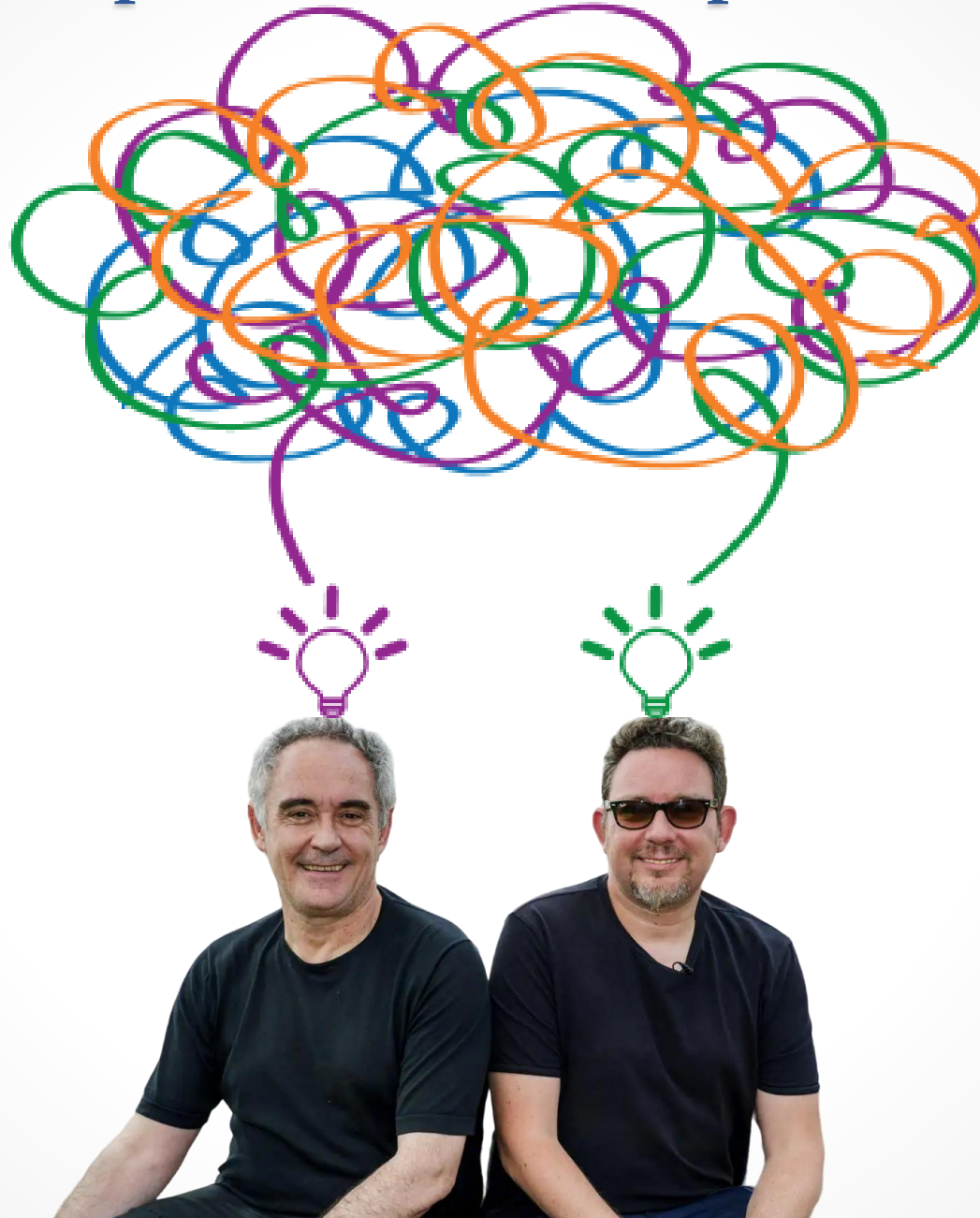
- Caso Nvidia – CUDA y usos de la gama gaming
- Caso x86, ARM vs RISC-V (BSC Sargantana)



- ¿No se podía saber? vs Tu estrategia no lo podía saber

- Tener una estrategia ≠ Tener una estrategia tecnológica
- Tener una estrategia ≠ buena estrategia

Open Source - Bullipedia



TCO – Coste Total de la Propiedad

WHY CALCULATE THE TOTAL COST OF OWNERSHIP FOR SOFTWARE?



PURCHASE COST

MANAGEMENT AND SUPPORT

ENERGY CONSUMPTION

DOWNTIME AND DISRUPTIONS

MAINTENANCE AND REPAIRS

USER TRAINING

RISK MANAGEMENT AND SAFETY

CONSUMABLES AND SUPPLIES

mavensolutions.tech

TCO =

INITIAL COSTS (I)

+

OPERATING COSTS (O)

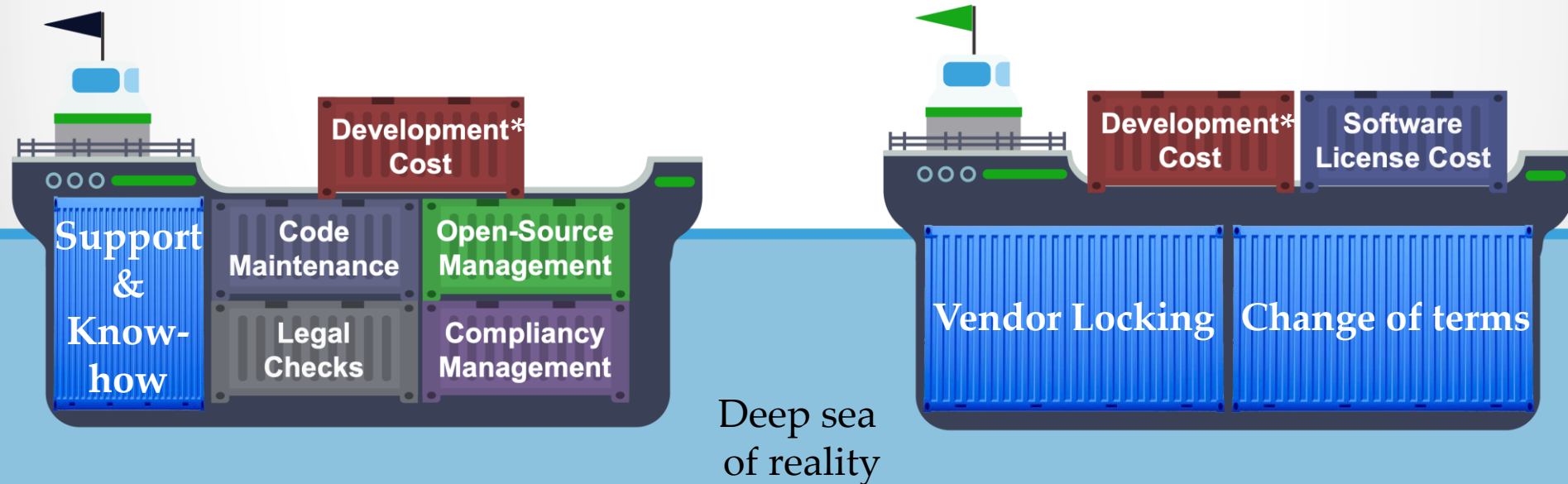
+

RETIREMENT/ REPLACEMENT COSTS (R)

TCO – Expectativas vs realidades



Shallow sea of expectations



Deep sea of reality

(*) Desarrollo o instalación/personalización

TCO – Expectativas vs realidades II

- **Free software / open source et al. \neq coste 0**

- Si respirar tiene un coste, y parpadear también...
- Un mal calculado TCO / DAFO-SWOT = No tener TCO / DAFO-SWOT

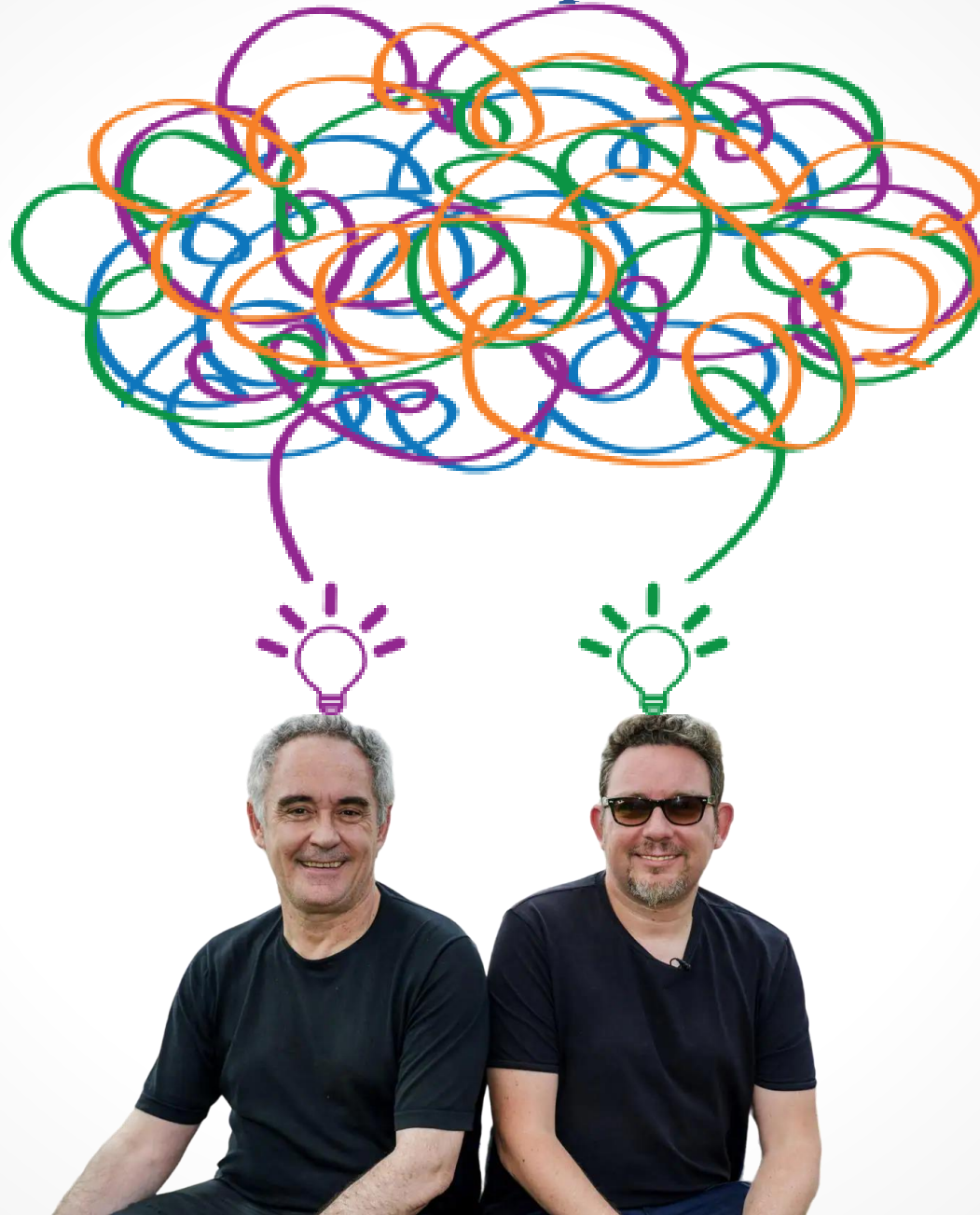
- ~~¿Software libre o software privativo?~~

- ¿Dónde podemos/queremos cargar los costes?
- Modelos híbridos: Purismo vs honestidad

- **Y...**



Escandallo / Presupuesto anual



¿Y cual es la solución?



REAL ACADEMIA ESPAÑOLA

Opinión: Juicio o valoración que se forma una persona respecto de algo o de alguien.

Criterio: Norma para conocer la verdad.



“...because without (proper) data, you are just another person with an opinion.”
Featuring William Edwards Deming


¿Y cual es la solución? II



Plataforma Empresa

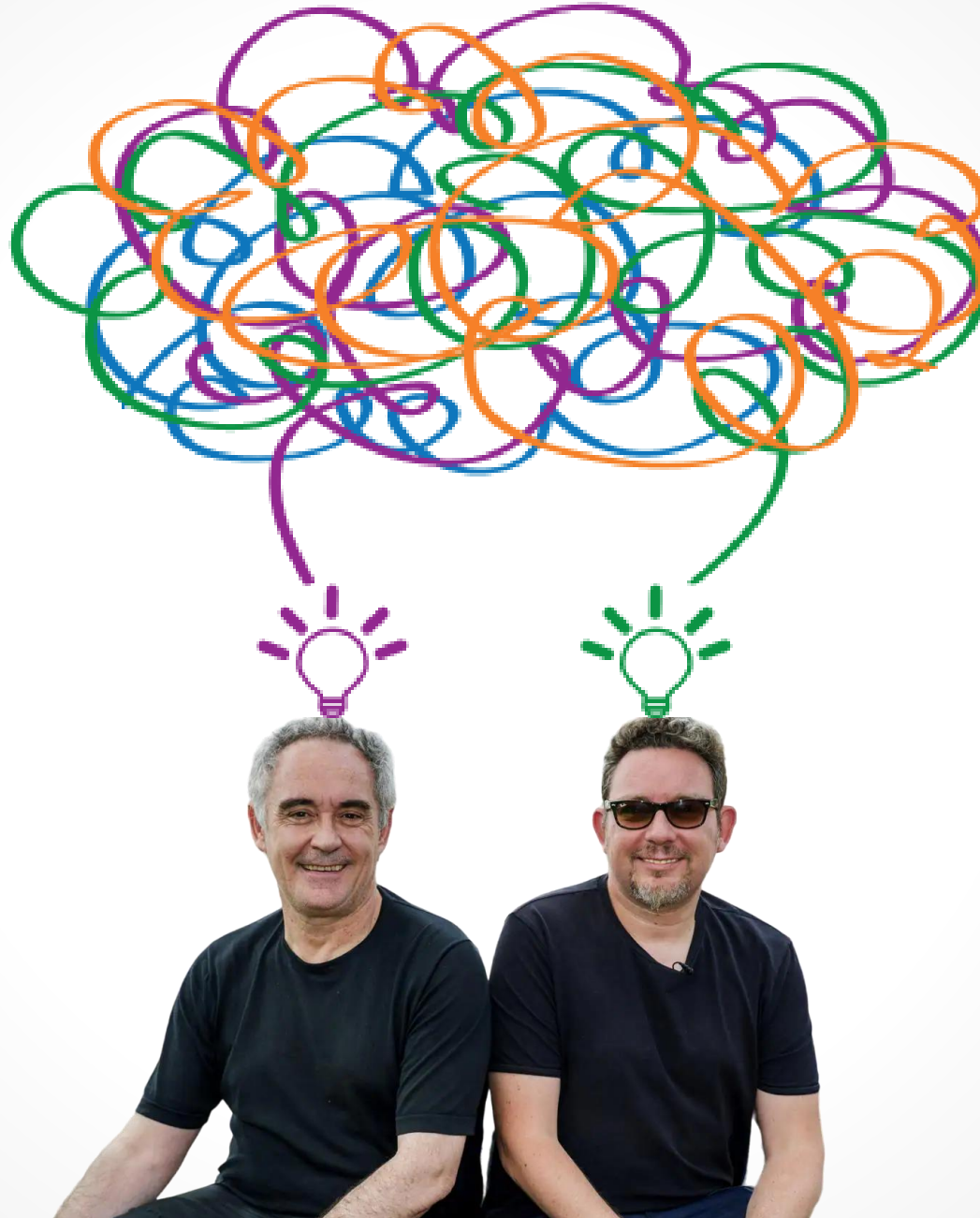
XAVIER MARCET
ESQUIVAR LA MEDIOCRIDAD

Notas sobre *management*:
complejidad, estrategia e innovación

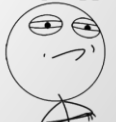


«El autor nos recuerda que siempre debemos empezar con la gente. Es crucial atraer a las personas adecuadas, porque el talento llama al talento.»
HENRY CHESBROUGH,
impulsor de la innovación abierta

Innovación vs actitud innovadora



CHALLENGE ACCEPTED



...AND COMPLETED

Referencias

[www1] Ferran/Albert Adrià

<https://www.youtube.com/watch?v=oWl1bqm2F4A>

<https://www.youtube.com/watch?v=hzkUbEu4UXg>

<https://www.youtube.com/watch?v=y6wEWFoe0uY>

<https://www.youtube.com/watch?v=Wzo8q2GAnCl>

<https://www.youtube.com/watch?v=THMe ruUdFc>

<https://www.youtube.com/watch?v=hDg5KKq75PY>

<https://www.youtube.com/watch?v=2mhaSzTH3sg>

<https://www.youtube.com/watch?v=heC-EgKHgfA>

<https://www.youtube.com/watch?v=FdtoRIXb2y4>

<https://comunicacion.movistarplus.es/email/movistar-presenta-las-huellas-de-elbulli-nuevo-documental-original-sobre-ferran-adria-que-se-estrena-el-jueves-7-de-octubre/>

<https://www.primevideo.com/-/es/detail/El-Bulli-historia-de-un-sue%C3%B1o/0JGJBQBKQQRQMSBXJYXCM6PPII>

[www2] <https://www.gnu.org/philosophy/open-source-misses-the-point.en.html>

[www3] <https://liou28335.medium.com/why-i-dislike-open-source-acbc271ba78b>

[www4] <https://wptrainingteam.github.io/lesson-plan/what-is-open-source/slides/#>

[www5] <https://www.how2shout.com/technology/difference-between-free-and-open-source-software-advantages-proprietary-software.html>

[www6] <https://steemit.com/opensource/@ixindamix/free-software-or-open-source>

[www7] <https://elbullifoundation.com/proyecto/bullipedia-la-enciclopedia-la-restauracion-gastronomica/>

[www8] https://en.wikipedia.org/wiki/Total_cost_of_ownership

[www9] <https://www.mavensolutions.tech/blog/calculate-tco-for-software/>

[www10] <https://blog.invgate.com/total-cost-of-ownership>

[www11] <https://www.simform.com/blog/ctos-guide-total-cost-of-ownership/>

[www12] <https://www.altamira.ai/blog/total-cost-of-ownership-software/>

[www13] <https://www.gt.io/blog/is-open-source-really-free>

[www14] <https://iprovonline.com/blog/strategy-vs-tactics-whats-the-difference-why-it-matters/>

[www15] <https://berkonomics.com/?p=2958>

Referencias II

- [www16] <https://www.gnu.org/philosophy/free-hardware-designs.en.html>
- [www17] https://en.wikipedia.org/wiki/Free_software_movement
- [www18] https://en.wikipedia.org/wiki/GNU_General_Public_License
- [www19] <https://en.wikipedia.org/wiki/Copyleft>
- [www20] https://en.wikipedia.org/wiki/Public_domain
- [www21] https://en.wikipedia.org/wiki/GNU_Affero_General_Public_License
- [www22] https://en.wikipedia.org/wiki/Open_source
- [www23] https://en.wikipedia.org/wiki/GNU_Lesser_General_Public_License
- [www24] https://en.wikipedia.org/wiki/Open-source_hardware
- [www25] <https://en.wikipedia.org/wiki/CUDA>
- [www26] <https://medium.com/@1kg/cuda-vs-rocm-the-ongoing-battle-for-gpu-computing-supremacy-82eb916fbe18>
- [www27] <https://cert.europa.eu/publications/security-advisories/2024-032/pdf>
- [www28] <https://arstechnica.com/security/2024/04/what-we-know-about-the-xz-utils-backdoor-that-almost-infected-the-world/>
- [www29] <https://www.tierradehackers.com/episodio-122/>
- [www30] <https://www.ncsc.gov.uk/information/log4j-vulnerability-what-everyone-needs-to-know>
- [www31] <https://en.wikipedia.org/wiki/Log4Shell>
- [www32] <https://www.computerweekly.com/news/366579593/Education-sector-facing-huge-VMware-cost-increases-after-Broadcom-ends-discounts>
- [www33] <https://revistabyte.es/opinion-byte-ti/carta-del-director/extorsion-de-broadcom/>
- [www34] <https://en.wikipedia.org/wiki/X86>
- [www35] https://en.wikipedia.org/wiki/ARM_architecture_family
- [www36] <https://en.wikipedia.org/wiki/RISC-V>
- [www37] <https://www.bsc.es/es/noticias/noticias-del-bsc/el-bsc-presenta-sargantana-la-nueva-generaci%C3%B3n-de-los-primeros-chips-de-c%C3%B3digo-abierto-dise%C3%B1ados-en>
- [www38] <https://github.com/bsc-loca/sargantana>
- [www39] <https://cordis.europa.eu/project/id/956702>
- [www40] <https://www.xataka.com/componentes/espaa-lidera-creacion-primer-chip-europeo-codigo-abierto-asi-e-processor-paso-adelante-para-competir-hardware>
- [www41] <https://dle.rae.es/opinion?m=form>
- [www42] <https://dle.rae.es/criterio?m=form>