



UNIVERSITAT _{DE}
BARCELONA

Del big data al deep learning.
Noves tecnologies aplicades
a l'educació superior.

Oriol Pujol Vila
Departament de matemàtiques i informàtica



excepte les imatges marcades amb altra llicència

De què parlarem?

“Hype” i “Buzzwords”



Un cas paradigmàtic

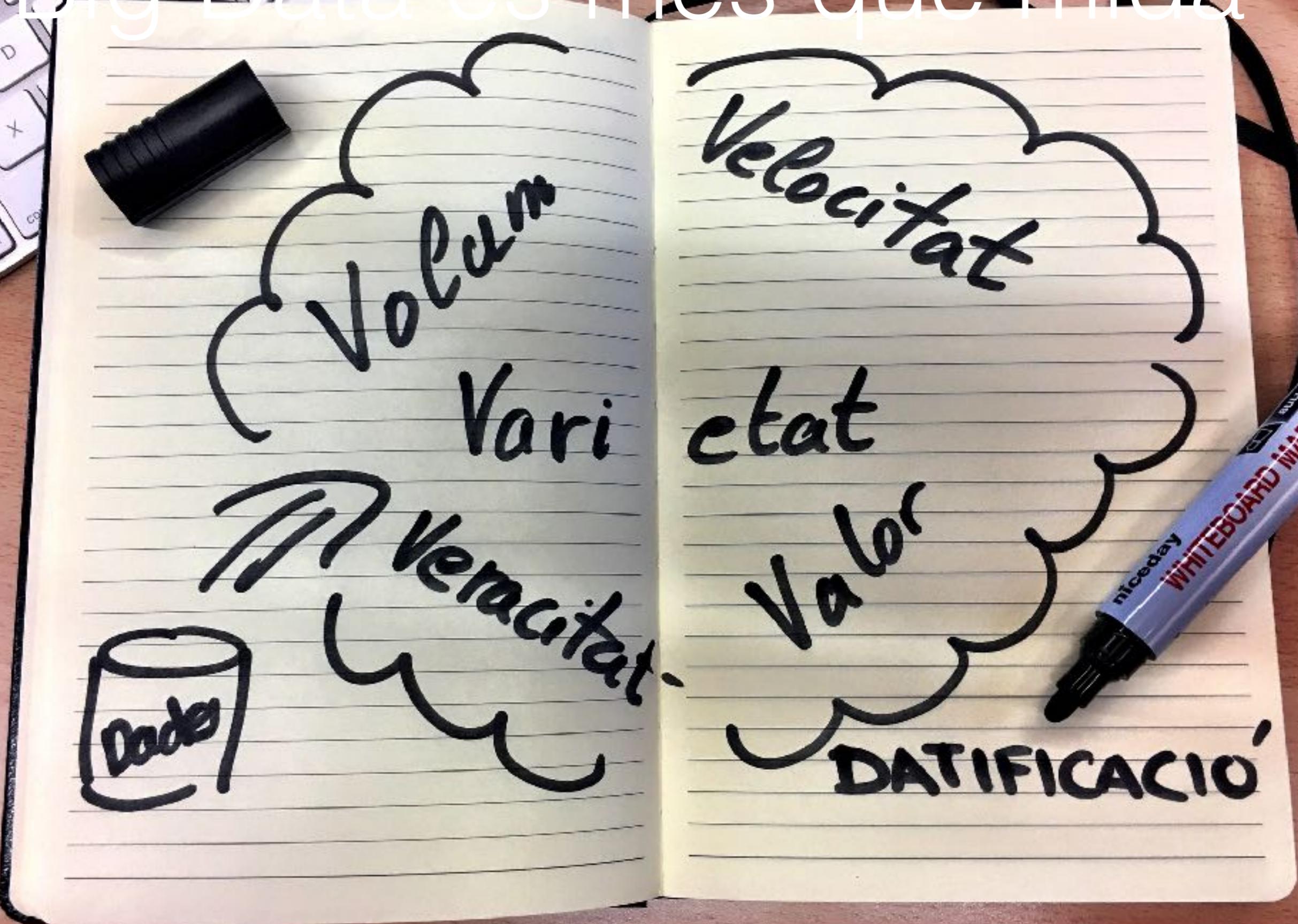


Una referència.

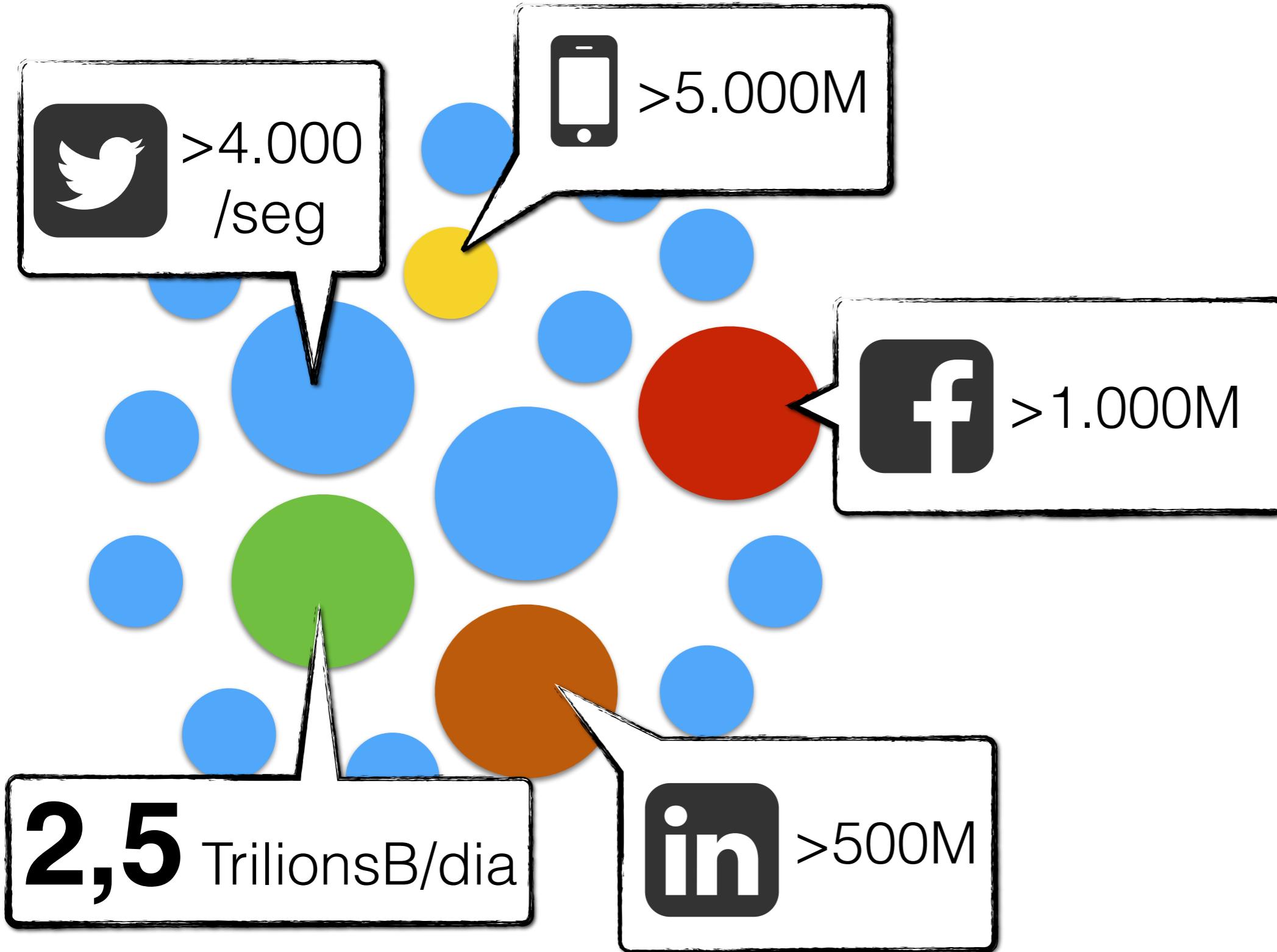
En un ordinador personal cercar un element ...



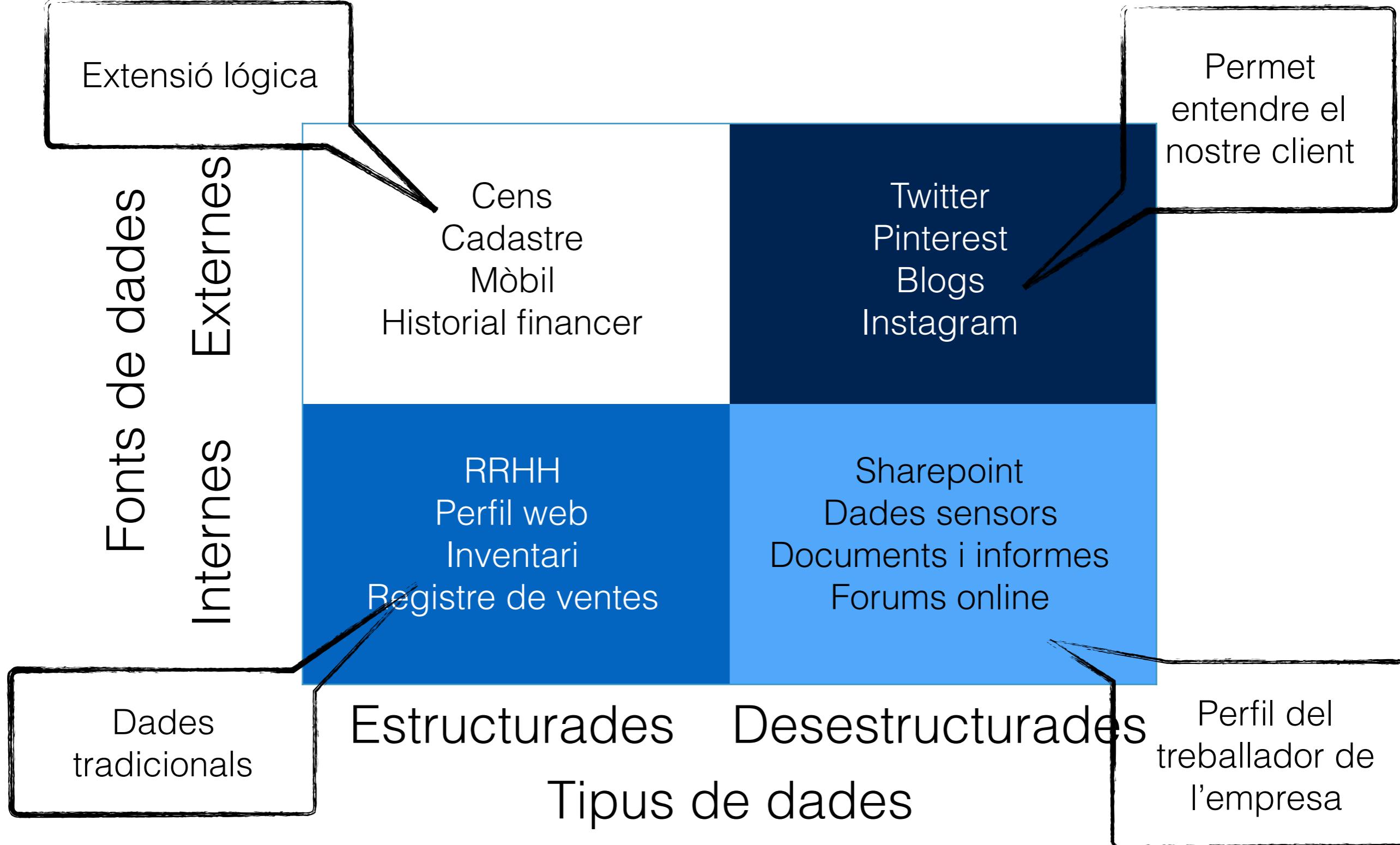
Big data es més que mida



La “datificació”

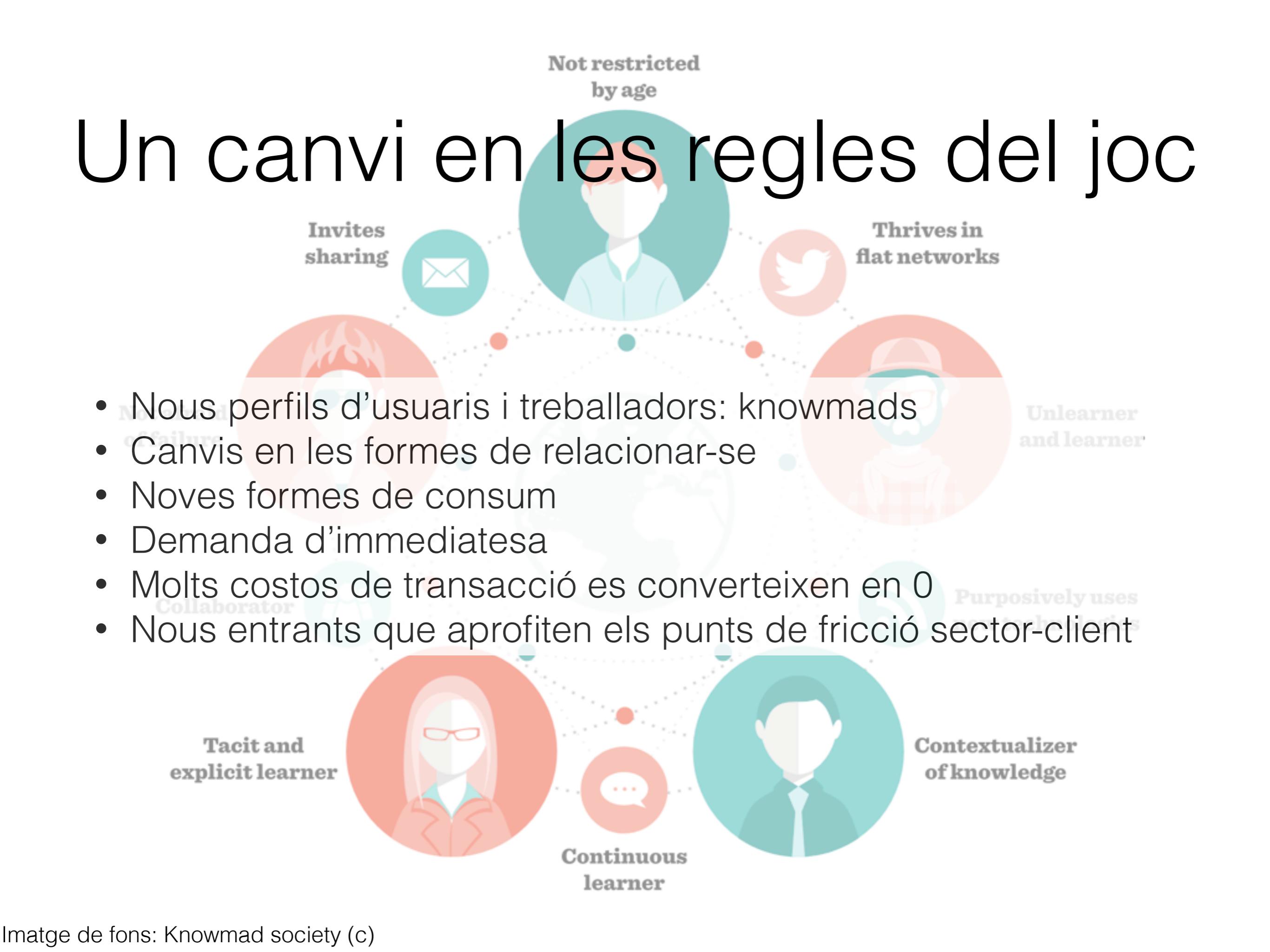


Les fonts i tipus de dades



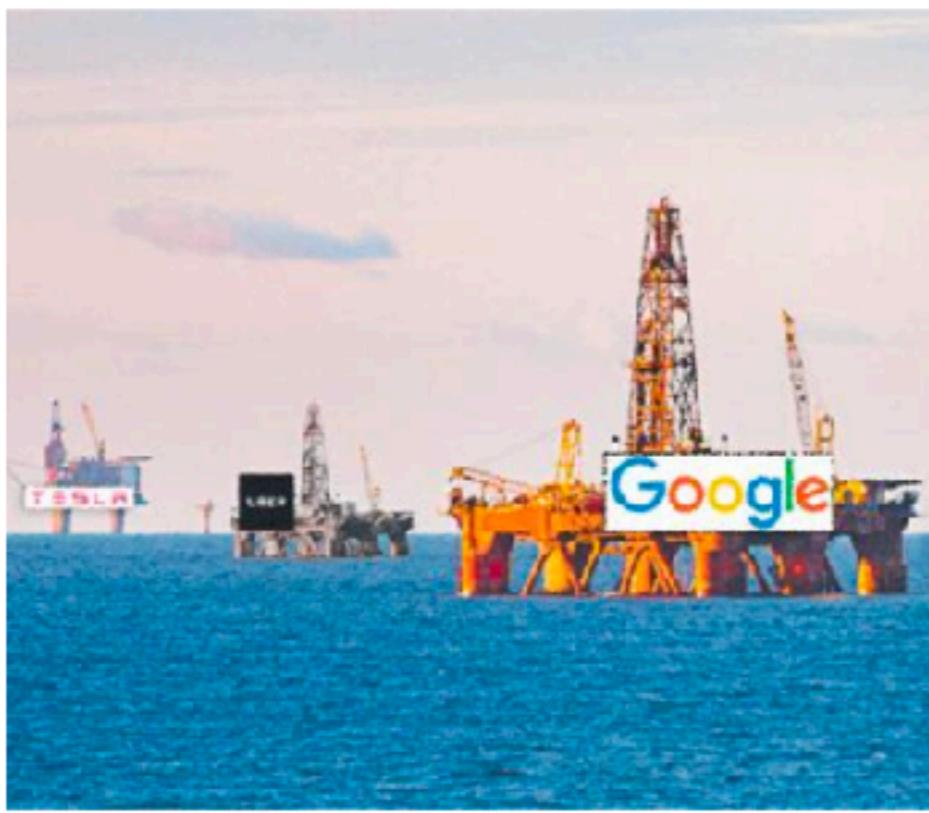
Un canvi en les regles del joc

- Nous perfils d'usuaris i treballadors: knowmads
- Canvis en les formes de relacionar-se
- Noves formes de consum
- Demanda d'immediatesa
- Molts costos de transacció es converteixen en 0
- Nous entrants que aprofiten els punts de fricció sector-client



... crea una necessitat
per mantenir-se competitius és necessària
una reinvenció... basada en dades.

The new oil: data is the world's most valuable resource



Is Data The New Oil?



Perry Rotella, CONTRIBUTOR

[FULL BIO ▾](#)

Opinions expressed by Forbes Contributors are their own.

Recently, on a CNBC Squawk Box segment, “[The Pulse of Silicon Valley](#),” host Joe Kernan posed the question, “What is the next really big thing?” to [Ann Winblad](#), the legendary investor and senior partner at Hummer-Winblad. Her response: “Data is the new oil.”

Your company WILL be a software company

In short, software is eating the world.

—Marc Andreessen

STRATEGY

You Don't Have to Be a Software Company to Think Like One

by [Vijay Gurbaxani](#)

APRIL 20, 2016

Now Every Company Is A Software Company



Why Every Company Is A Technology Company

10 ▾



Forbes Technology Council

Elite CIOs, CTOs & execs offer first-hand insights on tech & business. [FULL BIO ▾](#)

Opinions expressed by Forbes Contributors are their own.

POST WRITTEN BY

Stephenie Stone

Stephenie Stone is CIO Americas at [M+W Group](#), a global high tech design and construction firm.



Every company is a technology company, no matter what product or service it provides. The companies that embrace this fact are the ones that shape our world.

Today, no company can make, deliver or market its product efficiently without technology. While smart phones and the internet used to be cutting edge, these days, new application code release dates and time to market for new technologies are shrinking. This is forcing companies accustomed to a four-year release cycle to adopt to change faster. Businesses must learn how to integrate technology release cycles into their production and service cycles.

Companies that adapt quickly to new technologies gain a foothold on the market. But companies that wait for a second or third wave stay at the back of the pack and never get the leading edge. So how does a company embrace technology and crest the wave? Below are four ways I've helped my own company do so.

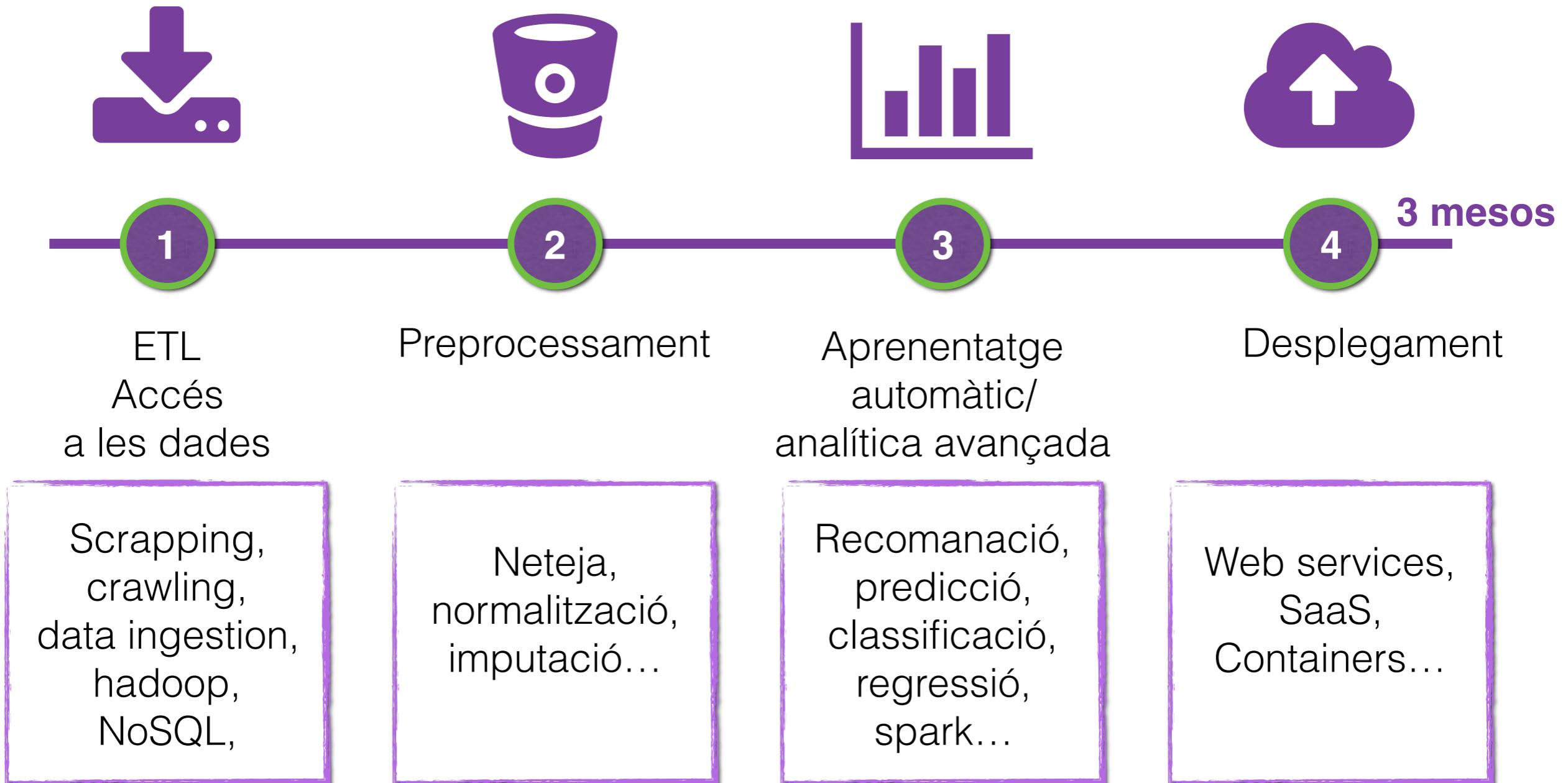
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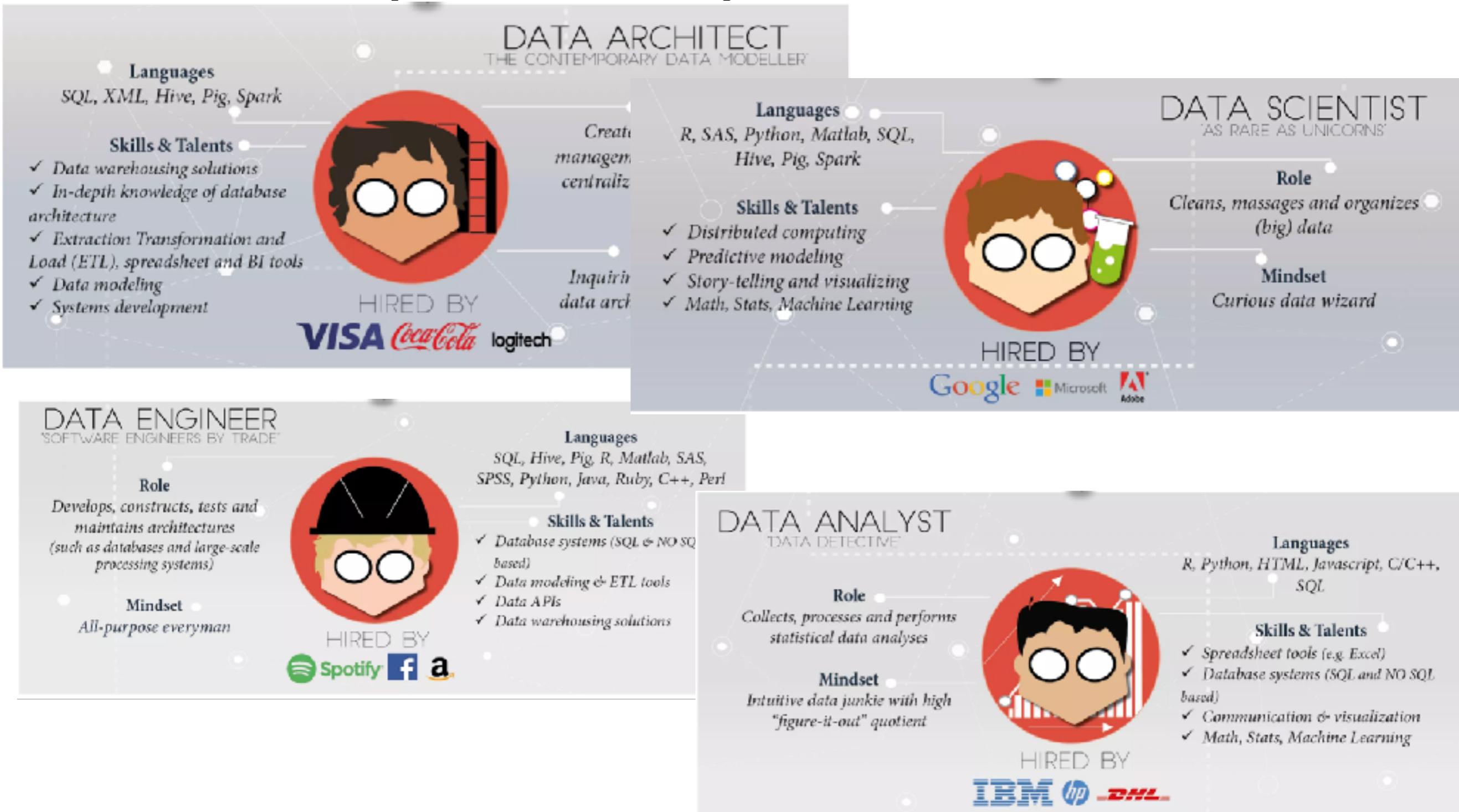
Michael Woelk, CEO of Picarro, which provides highly accu-

through a
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ployees, has
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a pipeline or a refinery. The implications are enor
nce, industrial and energy giants can now know w

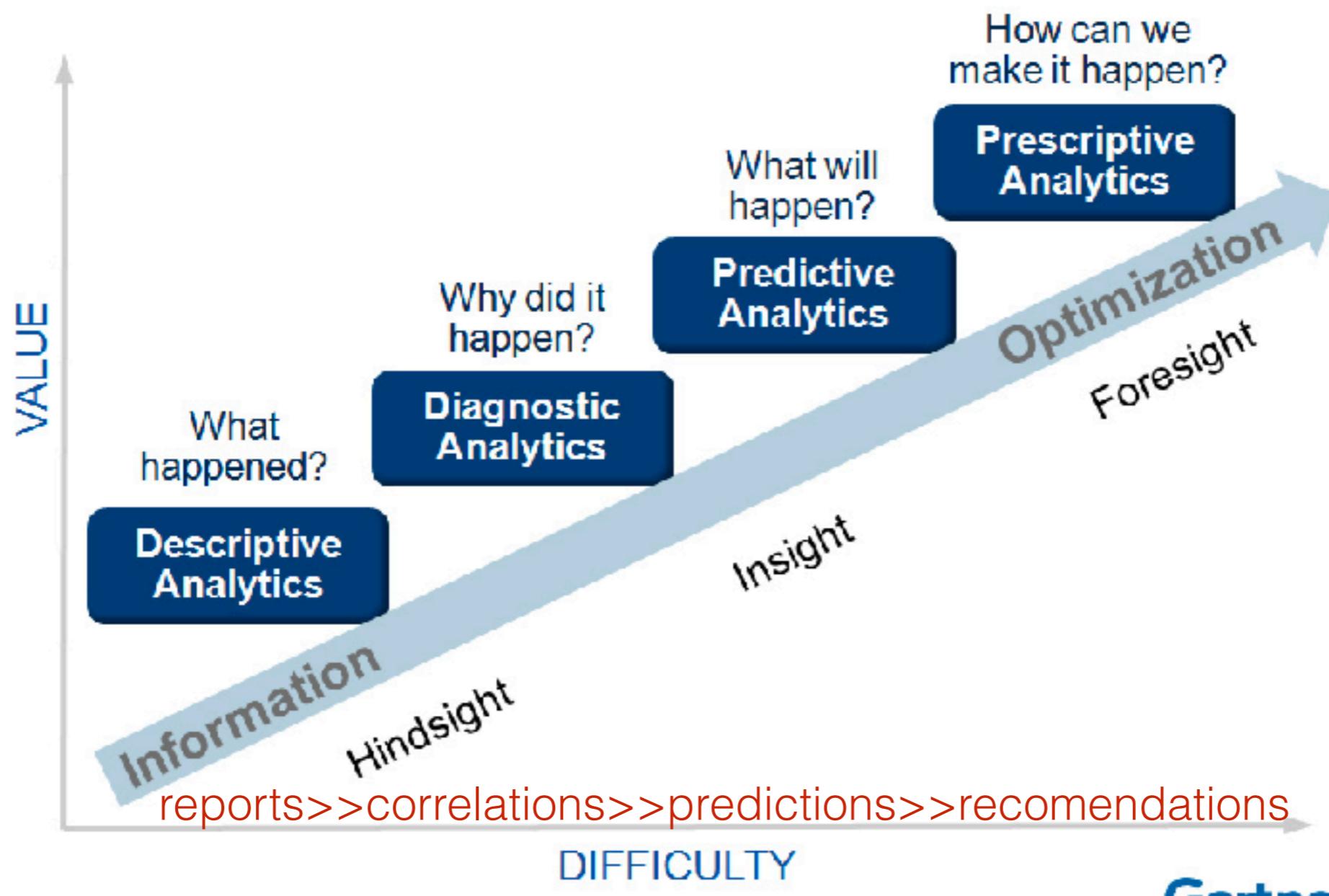
Productes basats en dades



Nous perufs professionals



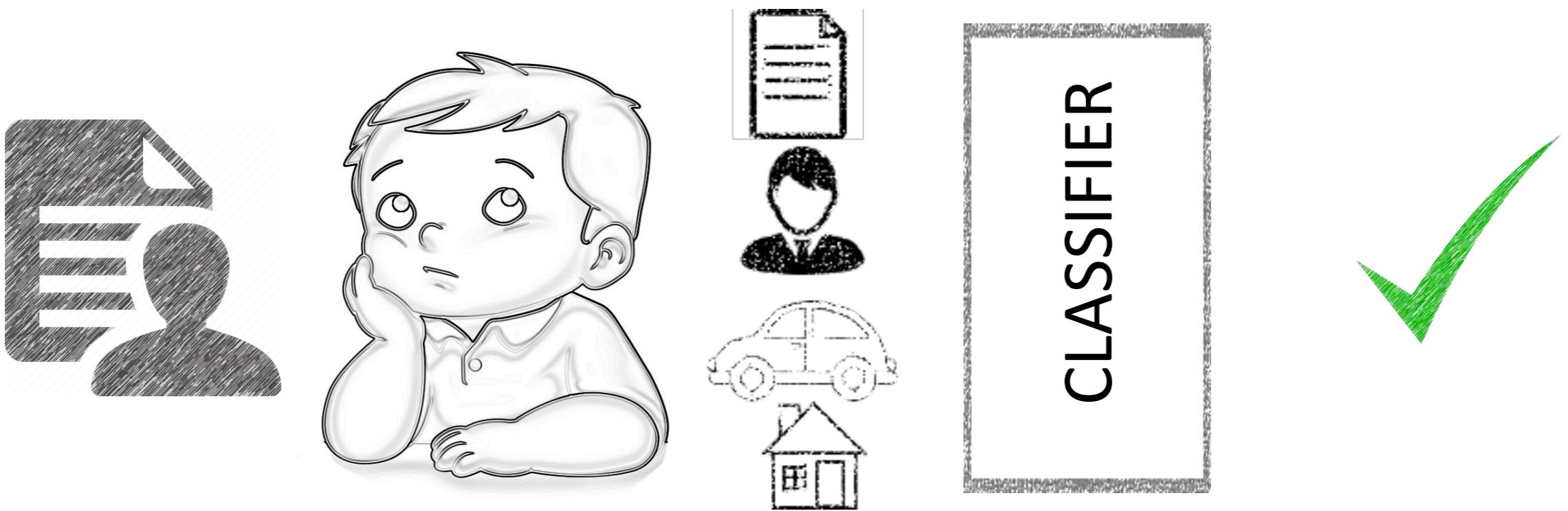
Habilitador: Analítica avançada i aprenentatge automàtic



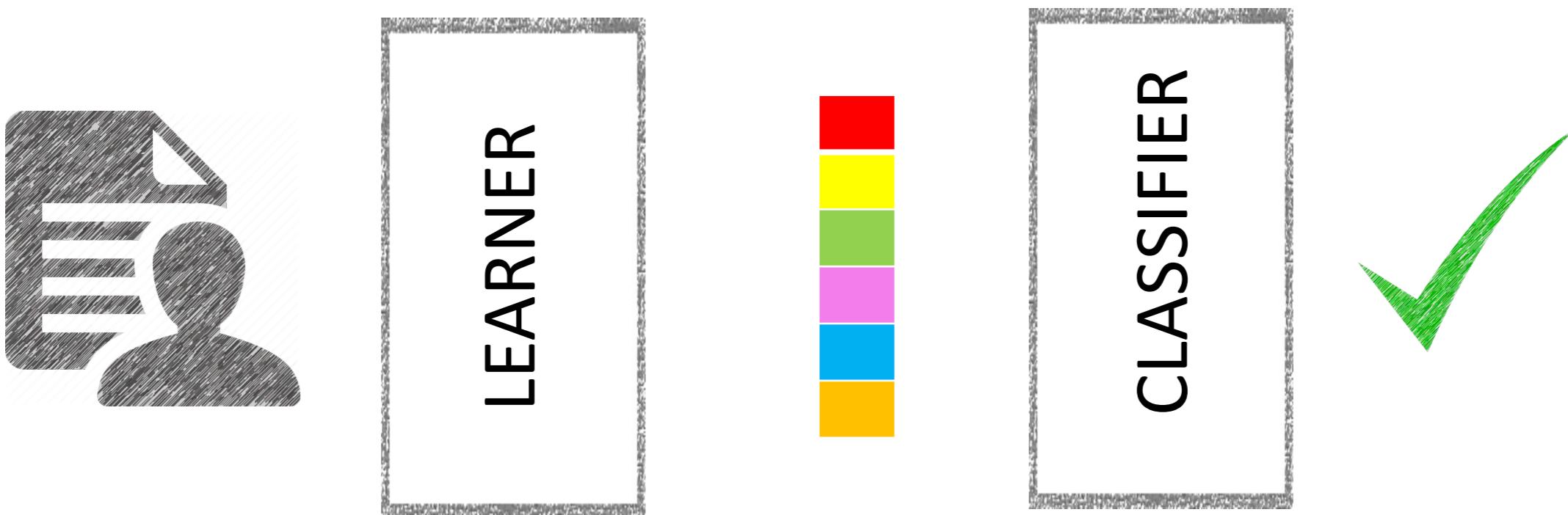
Deep learning, un desencadenant de les tecnologies basades en IA



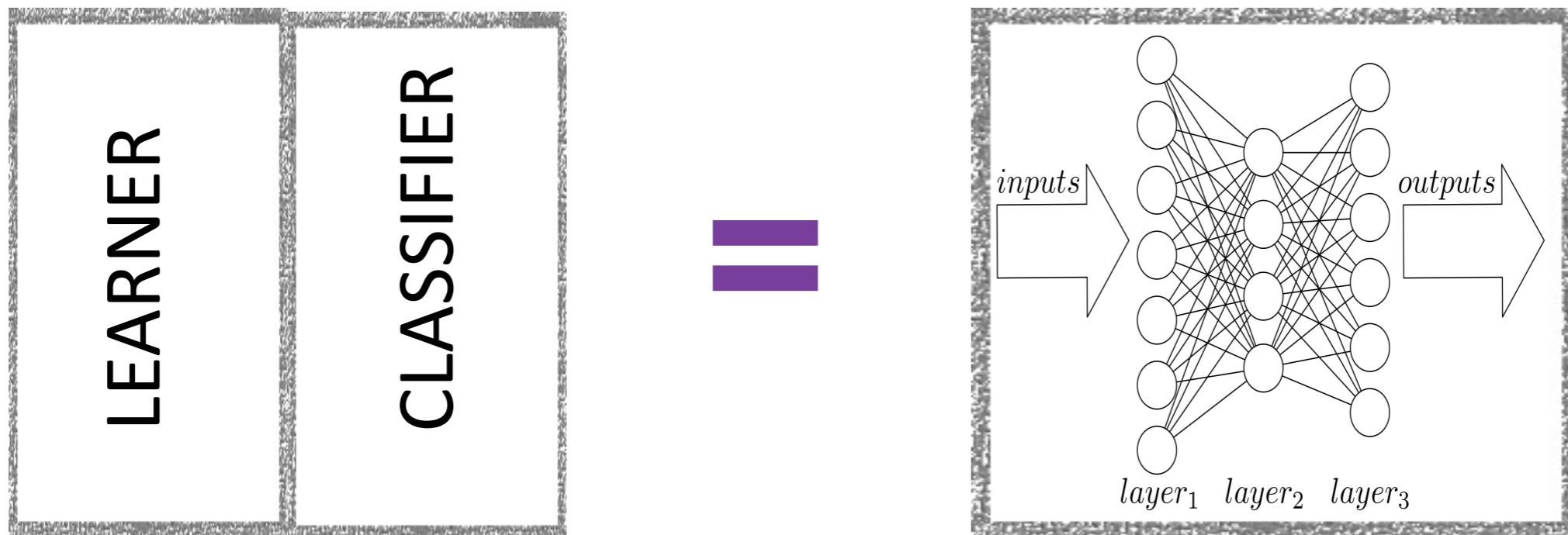
Procés tradicional d'aprenentatge automàtic

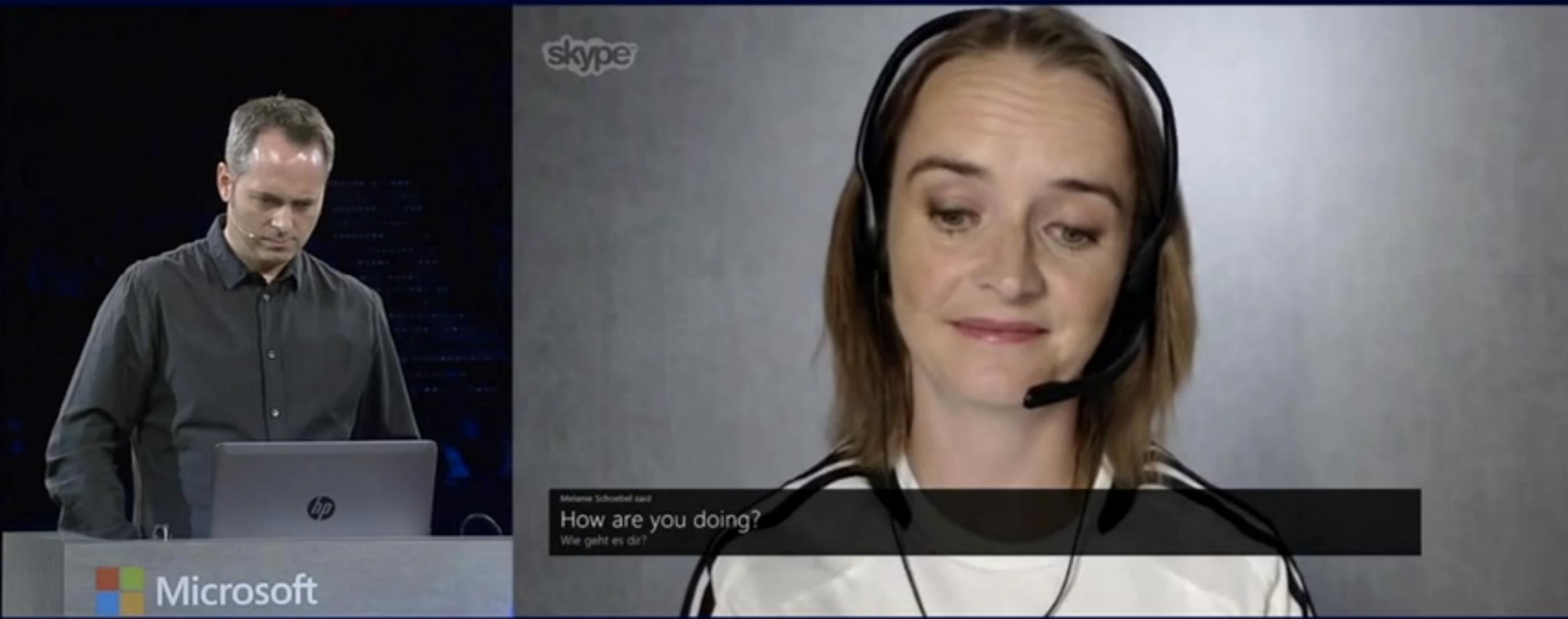


Automatització de la descripció del domini



Deep Learning





Reconeixement i traducció automàtica
simultània

Anotació automàtica

A person riding a motorcycle on a dirt road.



A group of young people playing a game of frisbee.



A herd of elephants walking across a dry grass field.



Two dogs play in the grass.



A skateboarder does a trick on a ramp.



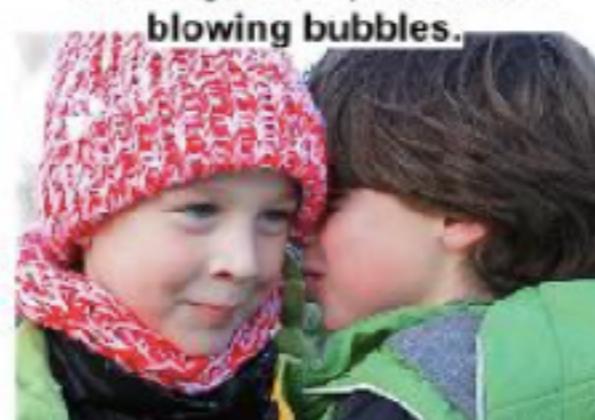
A dog is jumping to catch a frisbee.



Two hockey players are fighting over the puck.



A little girl in a pink hat is blowing bubbles.



A refrigerator filled with lots of food and drinks.



A close up of a cat laying on a couch.

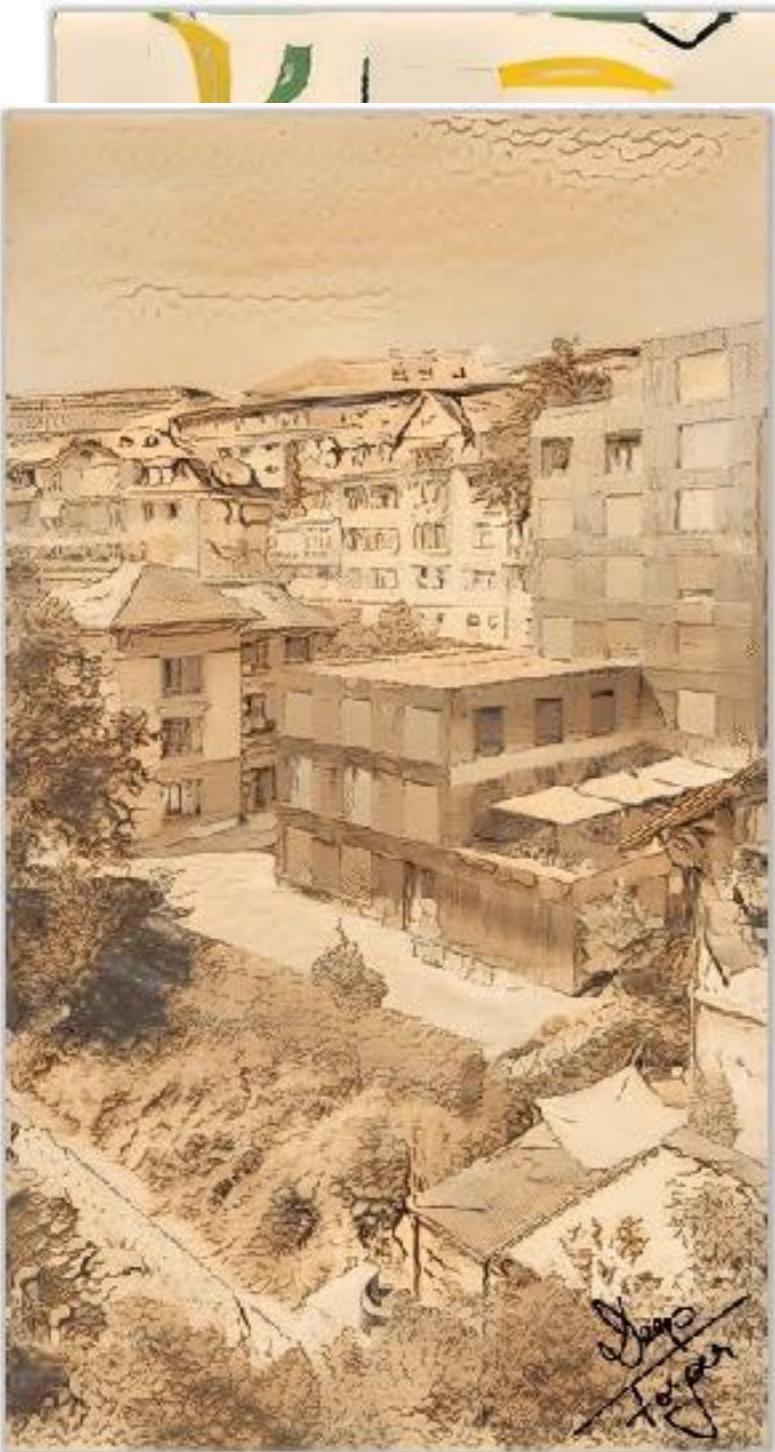


A red motorcycle parked on the side of the road.



A yellow school bus parked in a parking lot.





nature

THE INTERNATIONAL WEEKLY JOURNAL OF SCIENCE



At last – a computer program that
can beat a champion Go player **PAGE 484**

ALL SYSTEMS GO

CONSERVATION

SONGBIRDS À LA CARTE

*Illegal harvest of millions
of Mediterranean birds*

PAGE 452

RESEARCH ETHICS

SAFEGUARD TRANSPARENCY

*Don't let openness backfire
on individuals*

PAGE 459

POPULAR SCIENCE

WHEN GENES GOT 'SELFISH'

*Dawkins's calling
card forty years on*

PAGE 462

NATURE.COM/NATURE

28 January 2016 £10

Vol. 529, No. 7583



Però...això és molt complex?

≡ **Forbes**

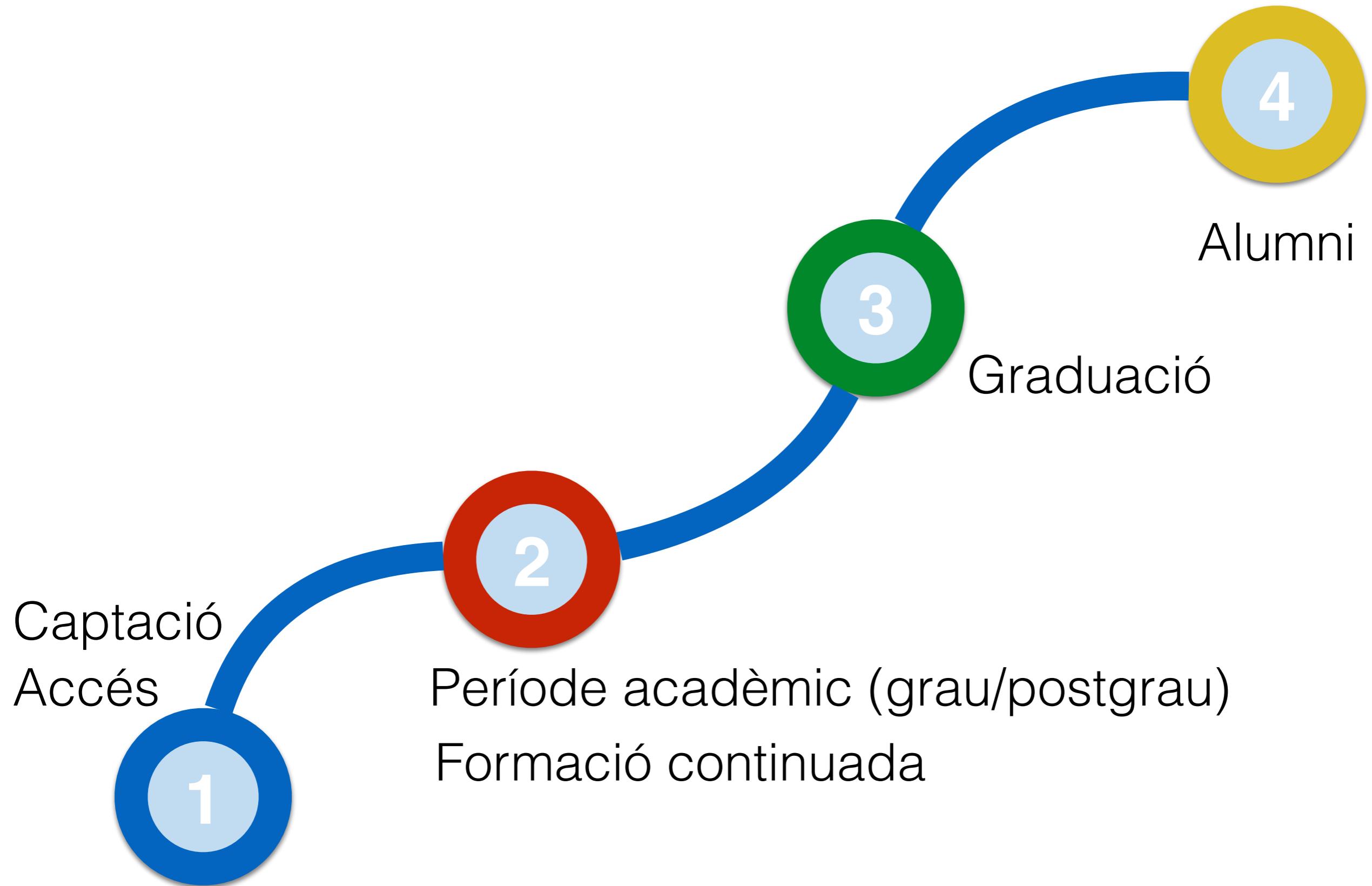
Data Literacy -- What It Is And Why None of Us Have It

- Quines són les dades rellevants a la meva disciplina?
- Quina informació aporten?
- Quines són les bones pràctiques per crear un producte basat en aquestes dades?

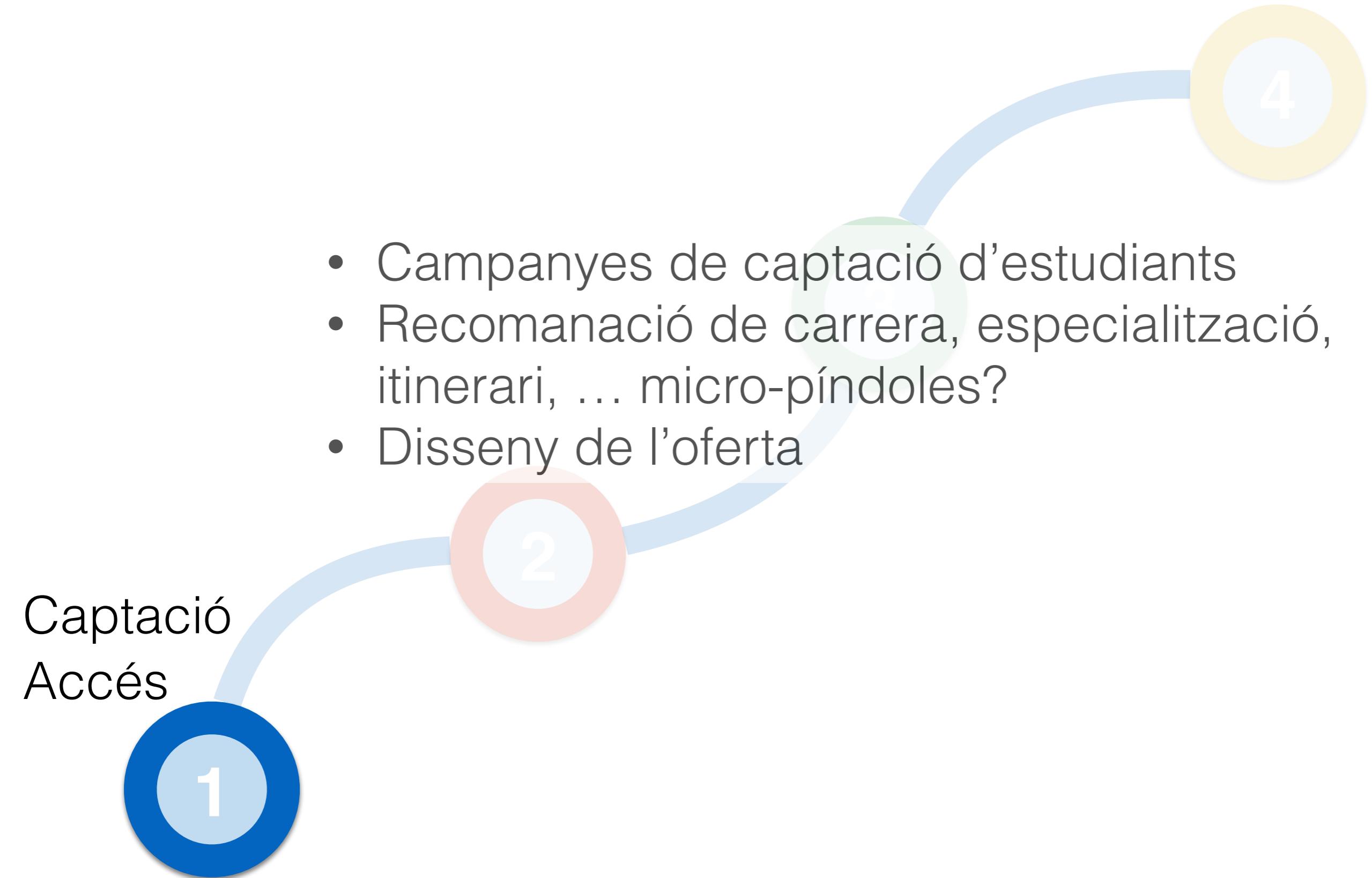


Impacte a l'educació
superior

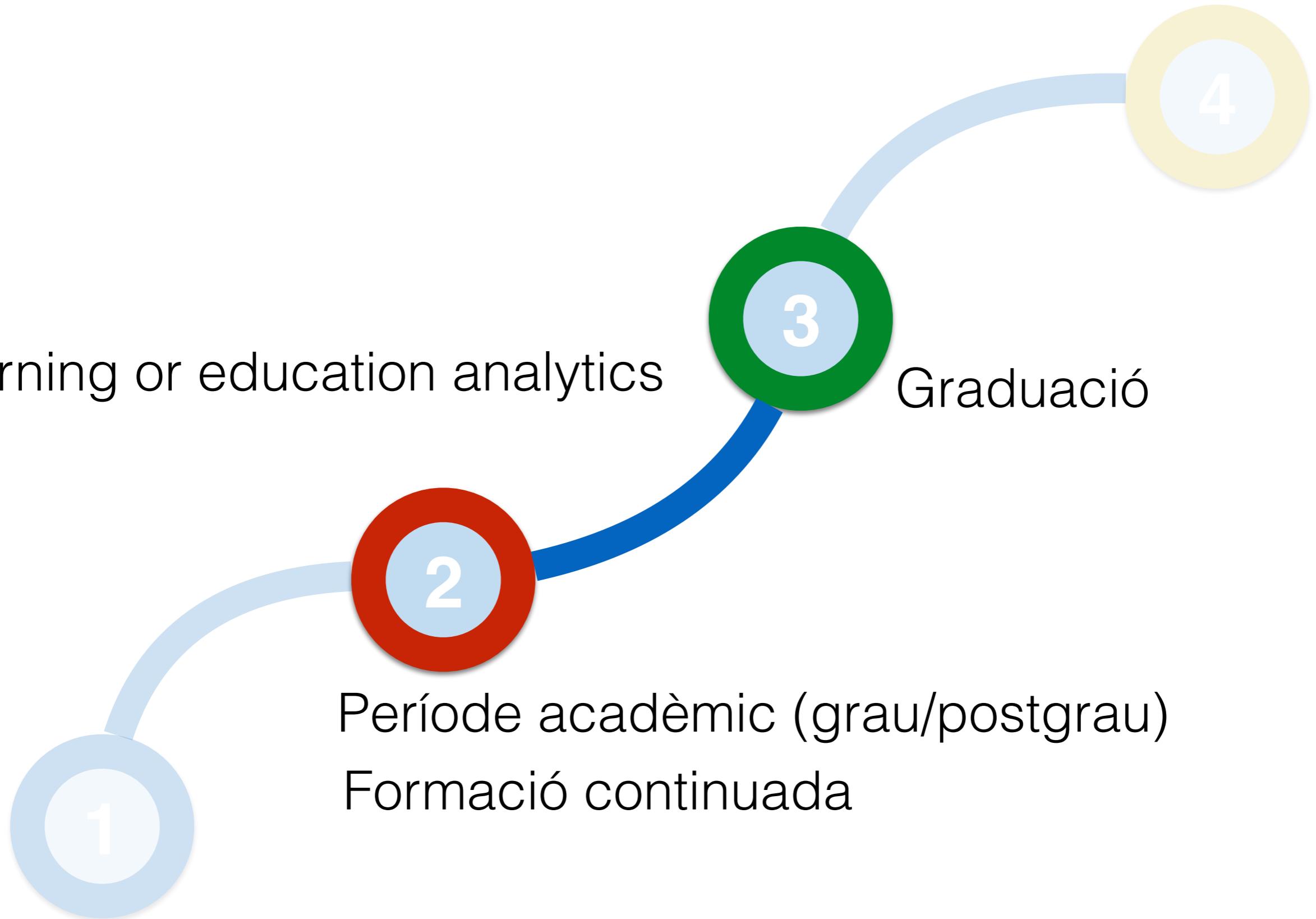
CICLE DE VIDA DE L'ESTUDIANT

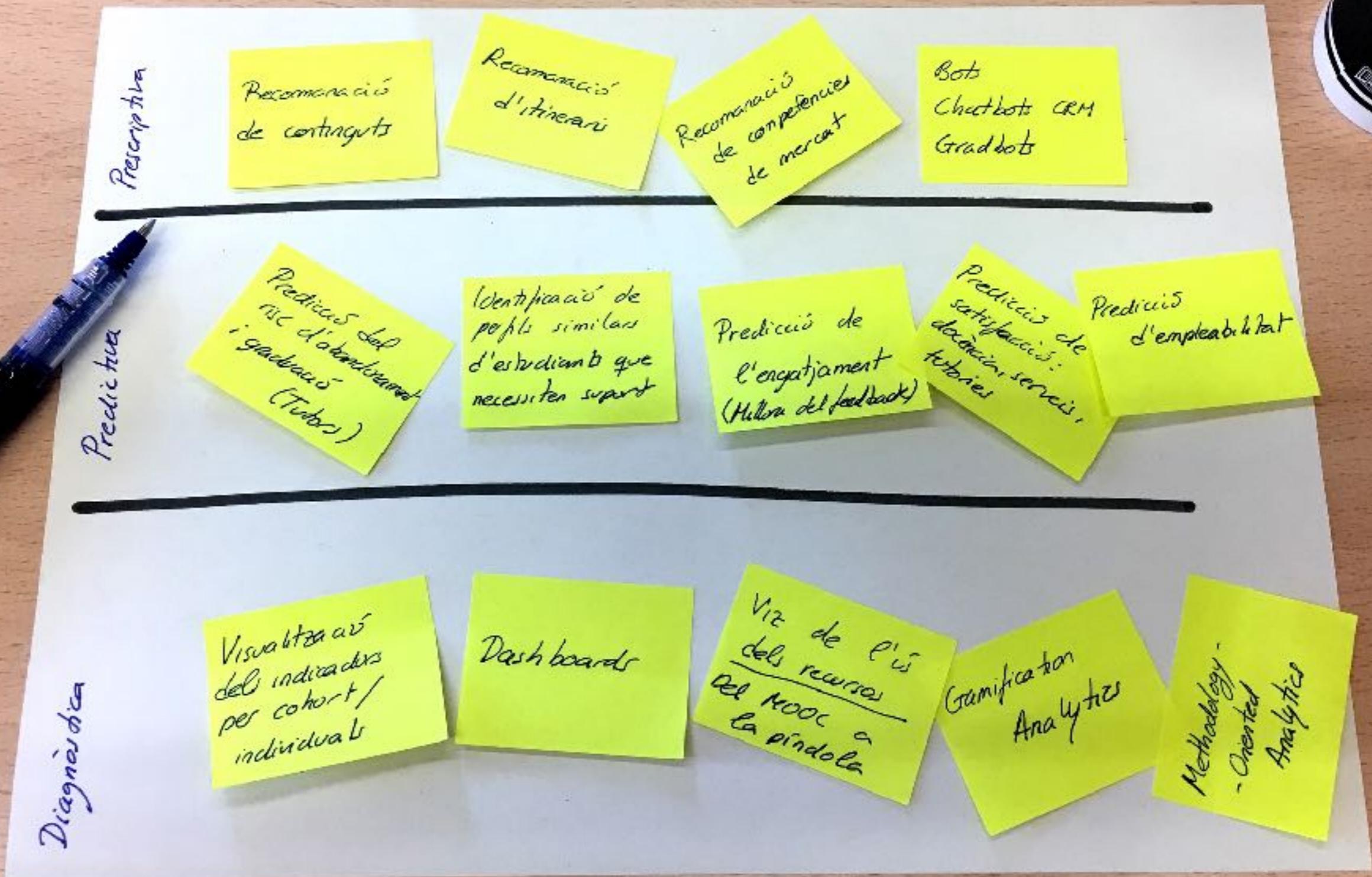


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science and technology

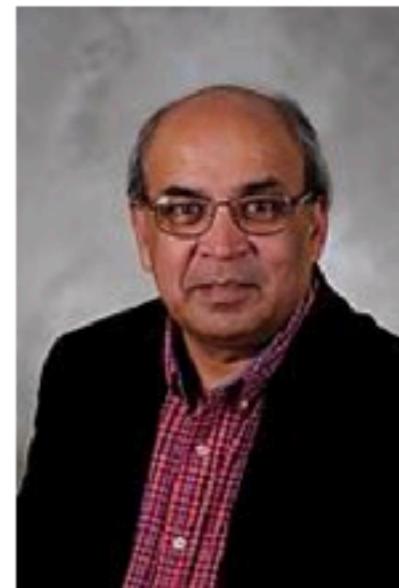
Artificial Intelligence Course Creates AI Teaching Assistant

Students didn't know their TA was a computer

By Jason Maderer | © MAY 9, 2016 • ATLANTA, GA



College of Computing Professor Ashok Goel teaches Knowledge Based Artificial Intelligence (KBAI) every semester. It's a core requirement of Georgia Tech's online master's of science in computer science program. And every time he offers it, Goel estimates, his 300 or so students post roughly 10,000 messages in the online forums — far too many inquiries for him and his eight teaching assistants (TA) to handle.



That's why Goel added a ninth TA this semester. Her name is Jill Watson, and she's unlike any other TA in the world. In fact, she's not even a "she." Jill is a computer — a virtual TA — implemented, in part, using technologies from IBM's Watson platform.

[© DOWNLOAD IMAGE](#)

[+ MORE PHOTOS](#)

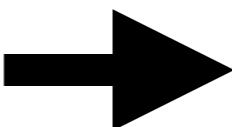
CICLE DE VIDA DE L'ESTUDIANT



Quines dades tenim?

Dades estàtiques

-  Horaris
-  Dades administratives
-  Dades de recerca
-  Dades dels cursos
-  Dades institucionals
-  Dades de rendiment de l'estudiant
-  Enquestes
-  Dades del professorat



“Reporting”
Pressa de decisions
Dades operacionals
Planificació

Dades dinàmiques



Descàrregues (llibres, recursos)



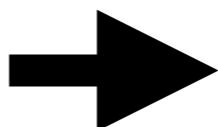
Mòbil



Wearable

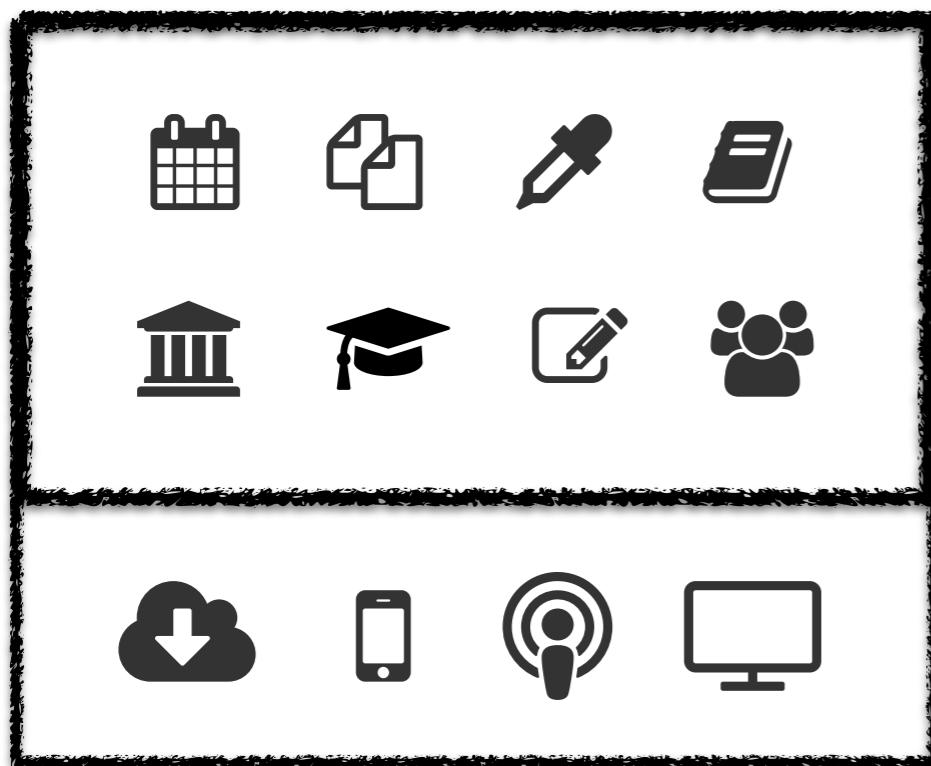


VLE, logs a la intranet



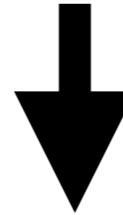
Perfilar els estudiants
Engagement

Dades externes



internes

- Job markets
- Trends socials
- Xarxes socials
- Oportunitats financeres, beques
- Notícies



“Sense and respond”
Perfilar la demanda

Consideracions



Responsabilitat



Accés



Transparència i consentiment



Establir intervencions positives



Privadesa



Minimització d'efectes adversos



Validesa



Governança de dades

“It is not alone . . . ”





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Gràcies!

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