CSS BRIEFING

ENTERPRISE KNOWLEDGE GRAPH

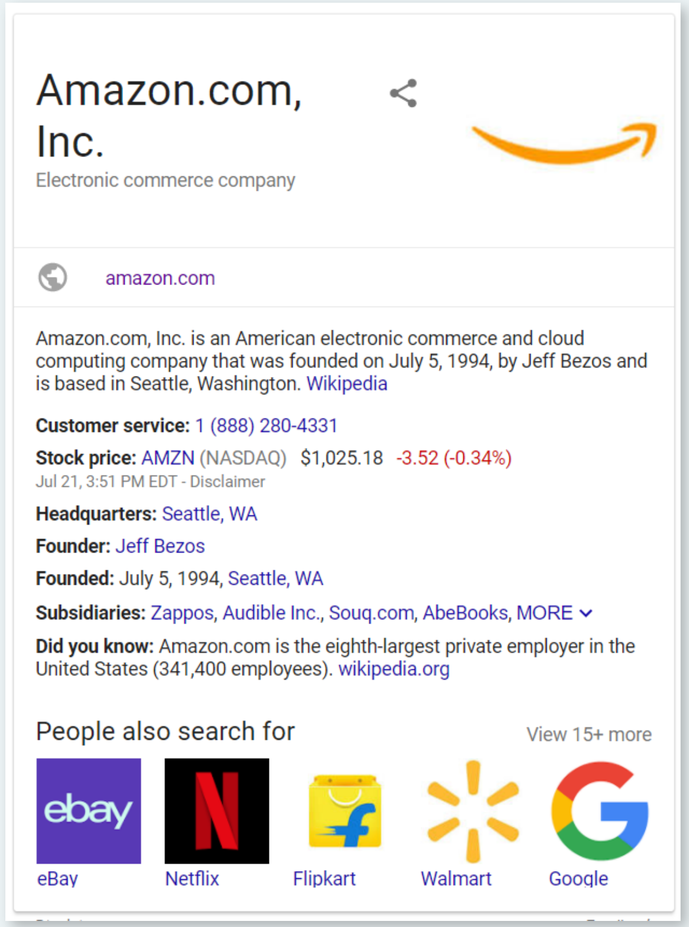
For more information visit stardog.com

DATA SILOS CREATE UNCONNECTED DATA

THAT'S A PROBLEM

- Early and Late Stage research and clinical trials
- Drugs, Interactions, Delivery Vehicles, Manufacturing & Supply Chain
- Licensing/Regulations across different markets
- Research expertise, experience, publications of personnel
- Ease of incorporating external ontologies, research, documentation

KNOWLEDGE GRAPHS EAT SILOS

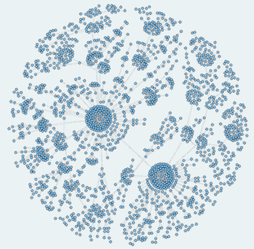


- Flexible
- Reusable
- Accretive

LinkedIn Google facebook. Wikipedia The Free Encyclopedia

EATING DATA SILOS HELPS EVERYWHERE

- **NASA** is using them to go to Mars and return to the Moon
- **BNY MELLON & MORGAN STANLEY** are using them to deliver the bank's data
- **NIH & NCI** are linking research and grant documents, building the NCIT
- **APPLE, SAMSUNG** are improving Maps, streamlining reporting and maintenance
- **BOSCH** is delivering a universal product catalog and streamlining supply chain



KNOWLEDGE GRAPH =

KNOWLEDGE TOOLKIT

+

GRAPH DATA

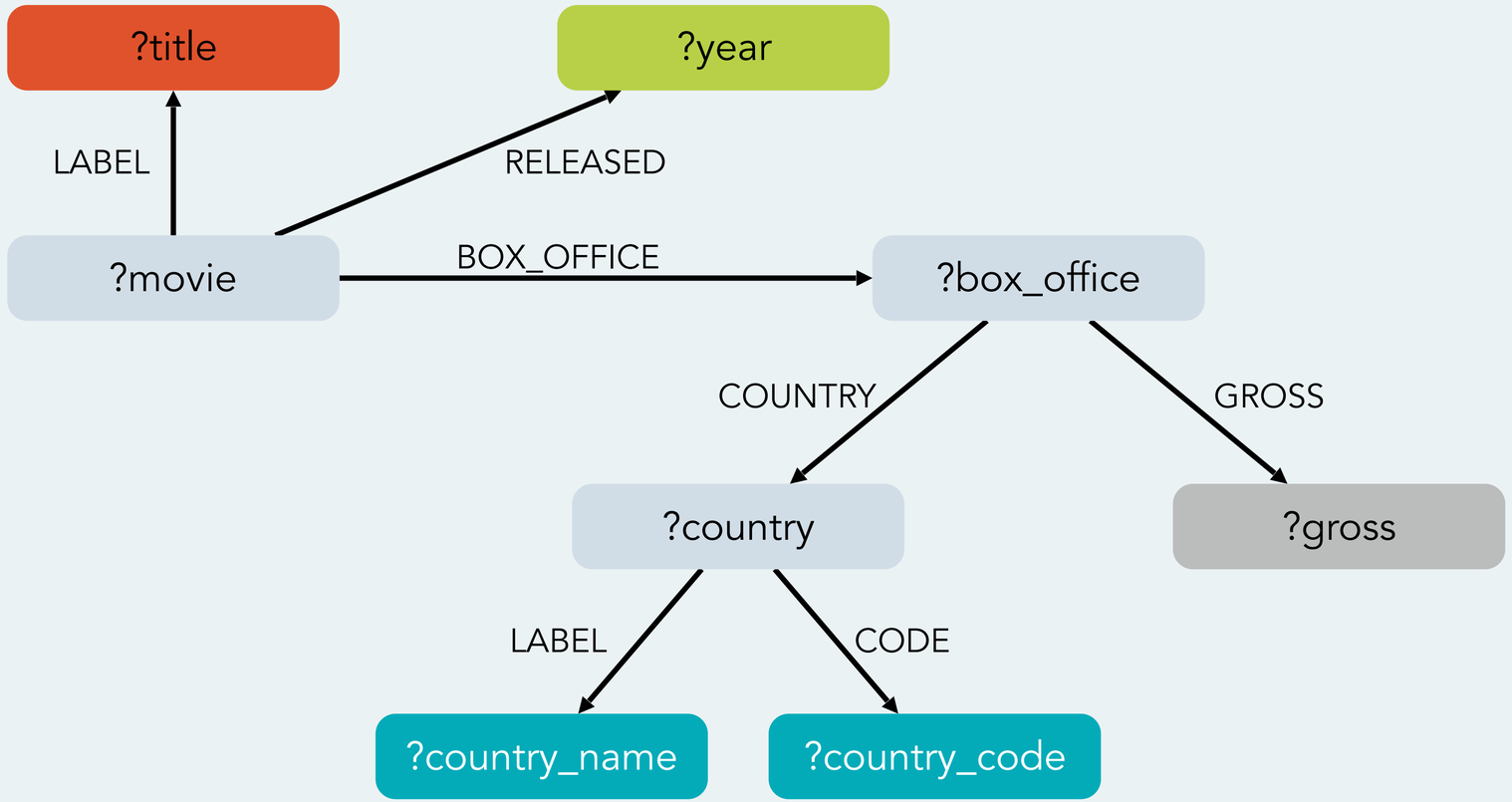
WHAT'S A KNOWLEDGE TOOLKIT?

- **VIRTUAL GRAPHS** build knowledge across silos.
- **BUSINESS LOGIC** builds reusable, **LOGICAL REASONING** into the graph
- **INTEGRITY CONSTRAINT VALIDATION** empowers data standards
- **MACHINE LEARNING** integrates statistical reasoning

VIRTUAL GRAPHS

imdb	title	year	country_name	country_code	gross
tt5946128	Dear Zindagi	2016	Domestic	USA	2376479
tt5946128	Dear Zindagi	2016	Australia	AU	249264
tt5946128	Dear Zindagi	2016	New Zealand	NZ	91273
tt5946128	Dear Zindagi	2016	Norway	NO	10862
tt5946128	Dear Zindagi	2016	United Kingdom	UK	471703
tt5700672	Train to Busan	2016	Domestic	USA	2128164
tt5700672	Train to Busan	2016	Australia	AU	777003
tt5700672	Train to Busan	2016	Bolivia	BO	155866
tt5700672	Train to Busan	2016	Brazil	BR	1451384
tt5700672	Train to Busan	2016	Colombia	C2	168197
tt5700672	Train to Busan	2016	France	FR	1950833

VIRTUAL GRAPH OF RELATIONAL TABLE



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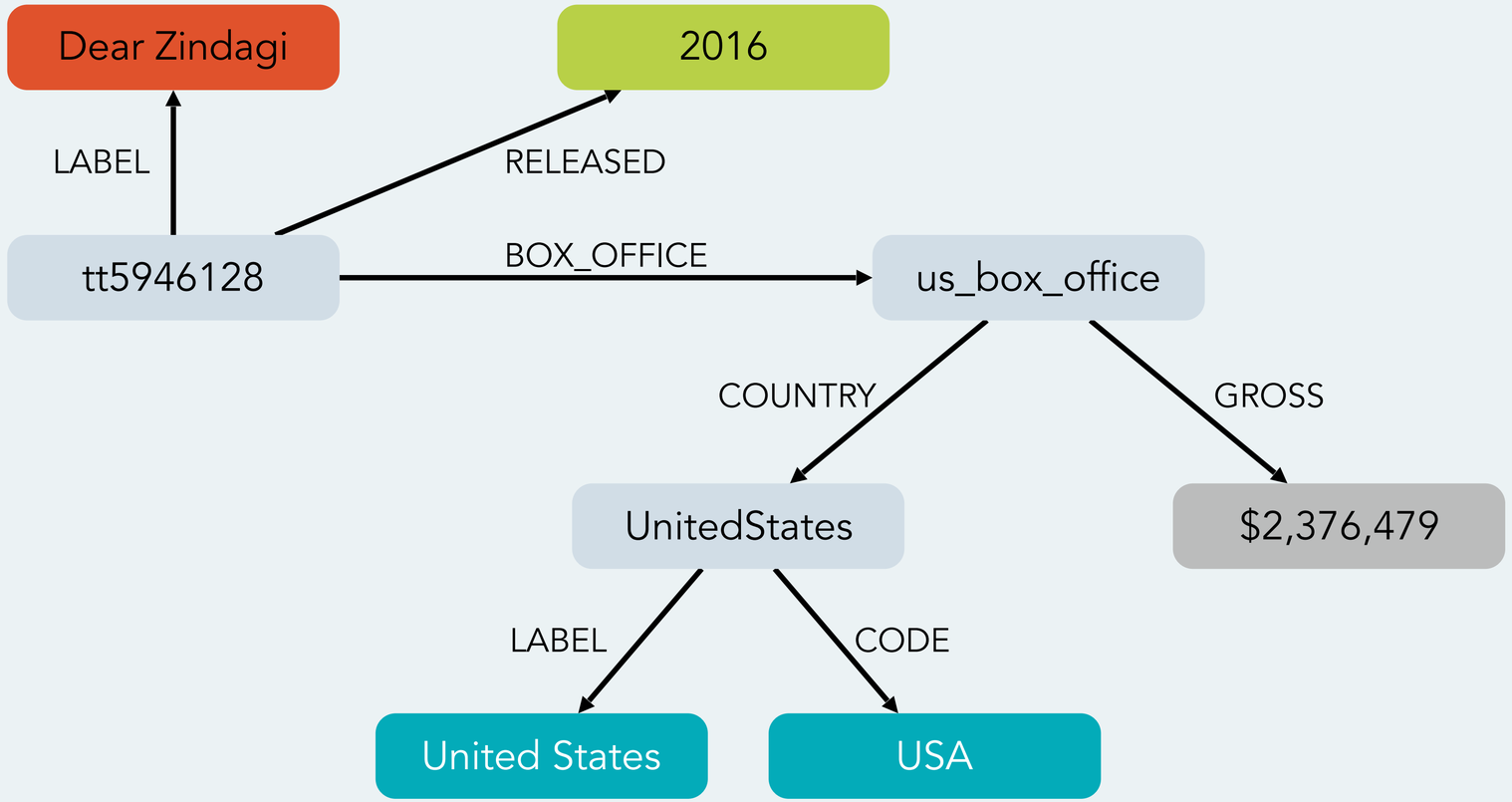

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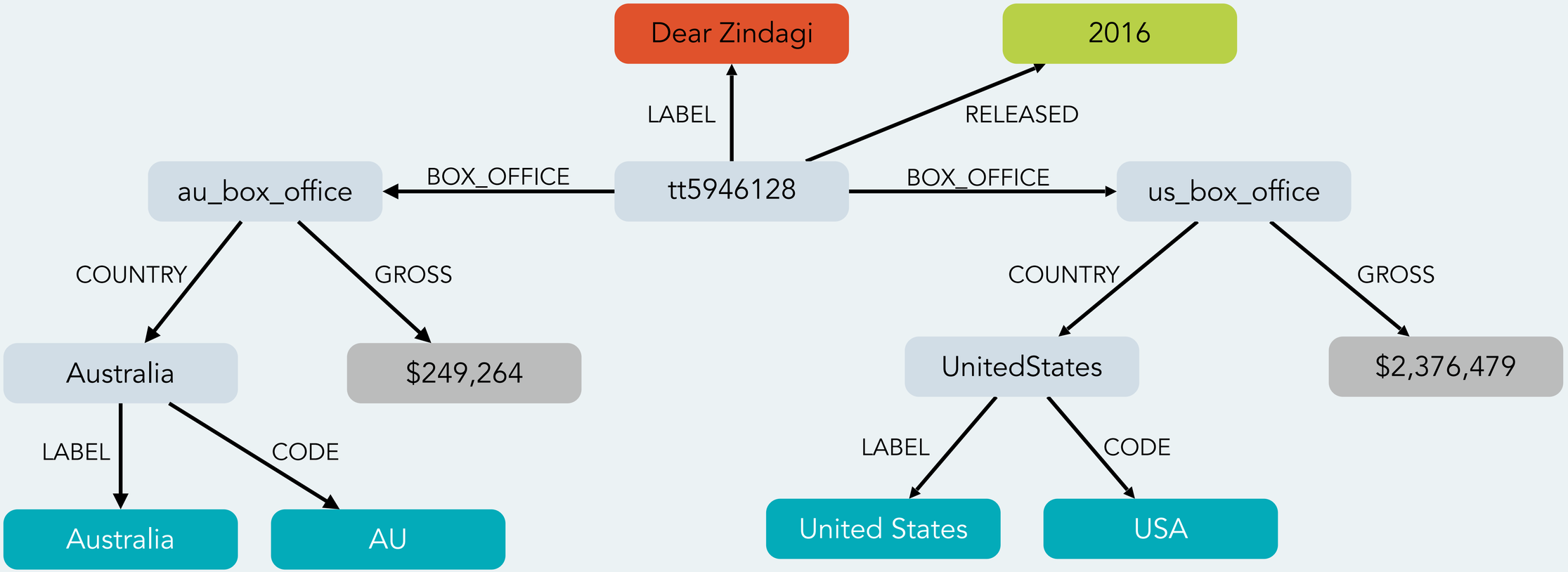

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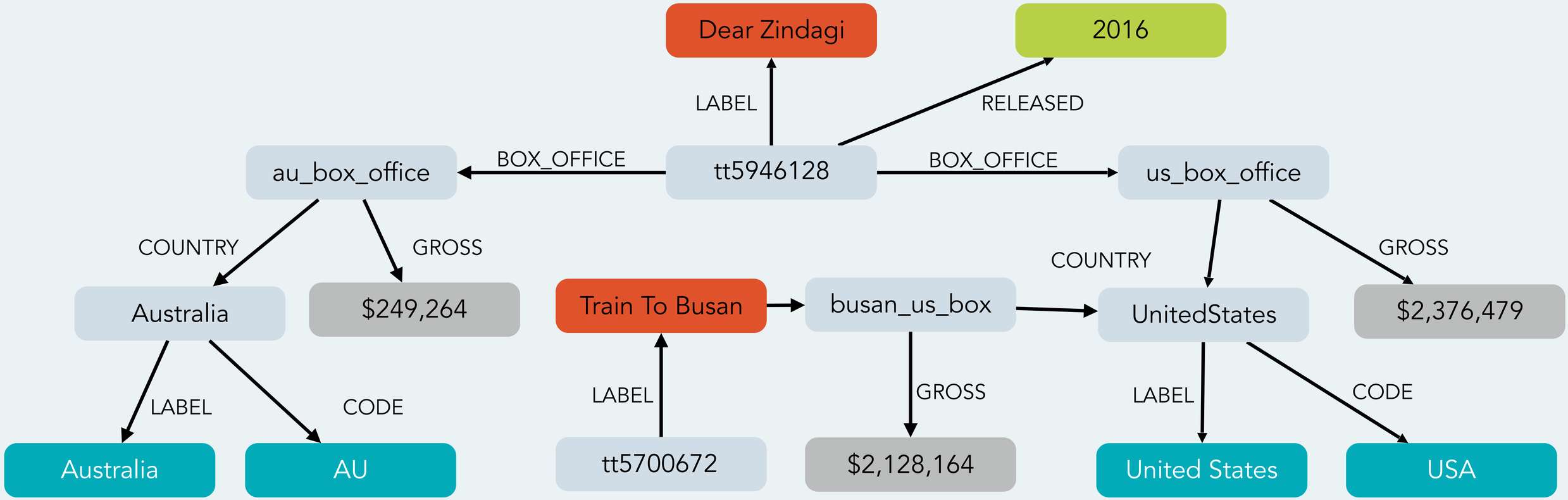
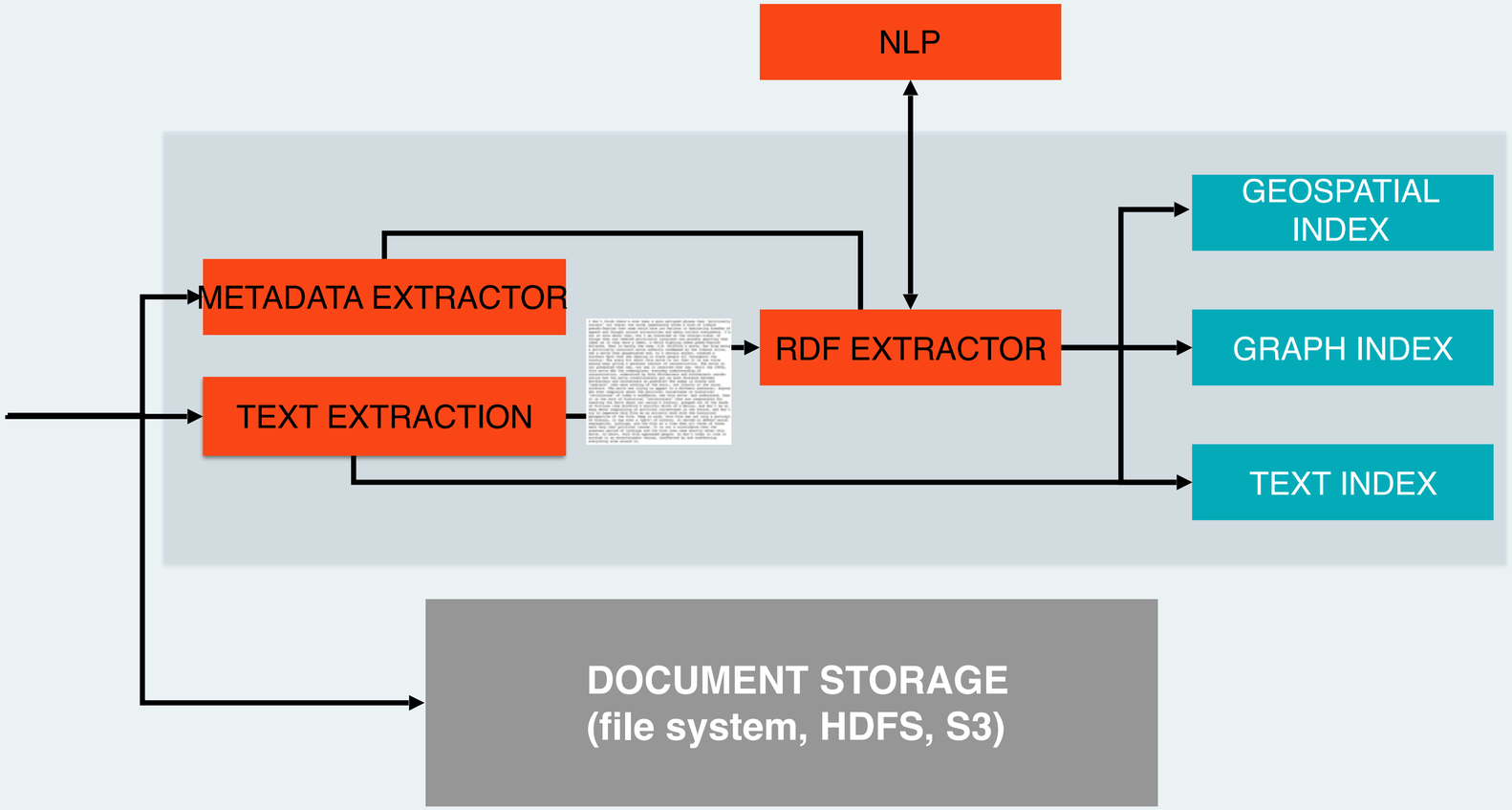


AND THE OTHER DATA TOO



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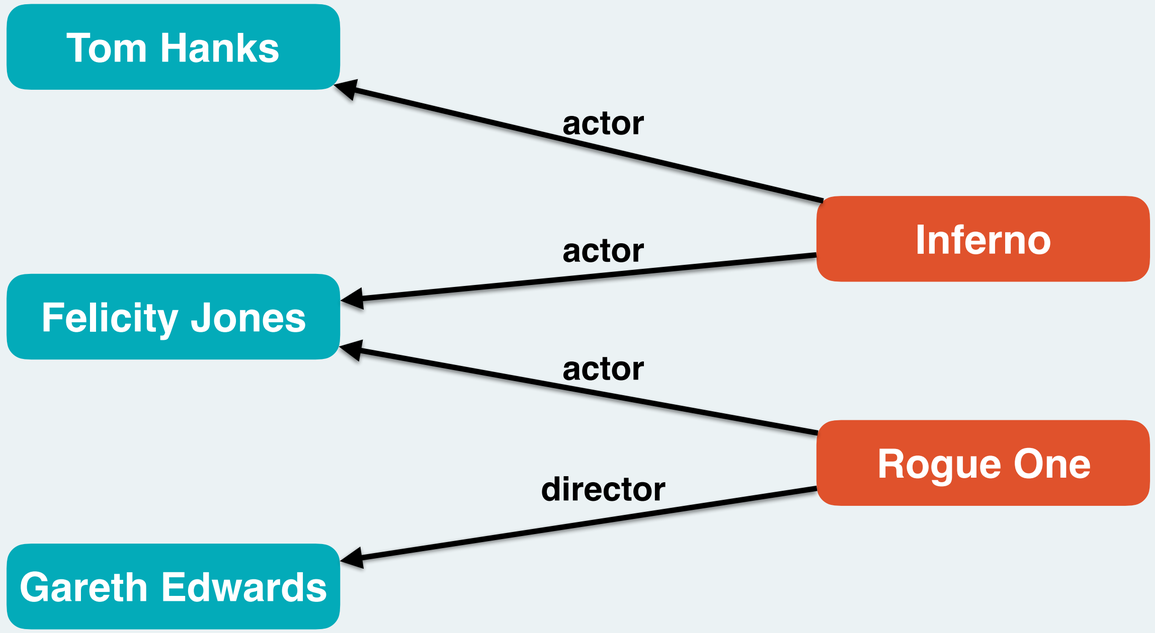
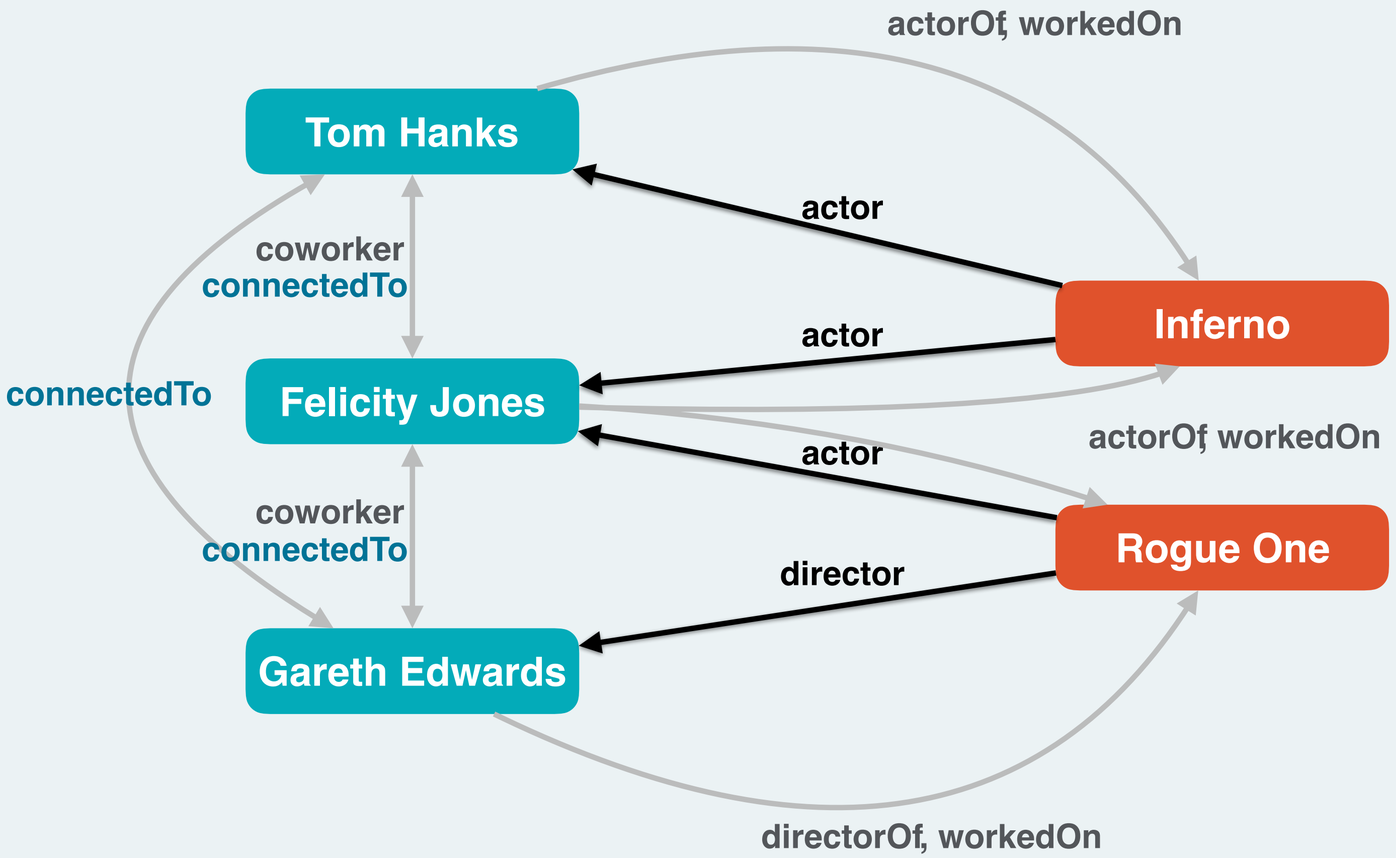
REASONING EXAMPLE



REASONING EXAMPLE



actorOf inverseOf actor
directorOf inverseOf director

actorOf subPropertyOf workedOn
directorOf subPropertyOf workedOn

coworker propertyChain
(workedOn [inverseOf workedOn])

coworker subPropertyOf connectedTo
connectedTo a TransitiveProperty

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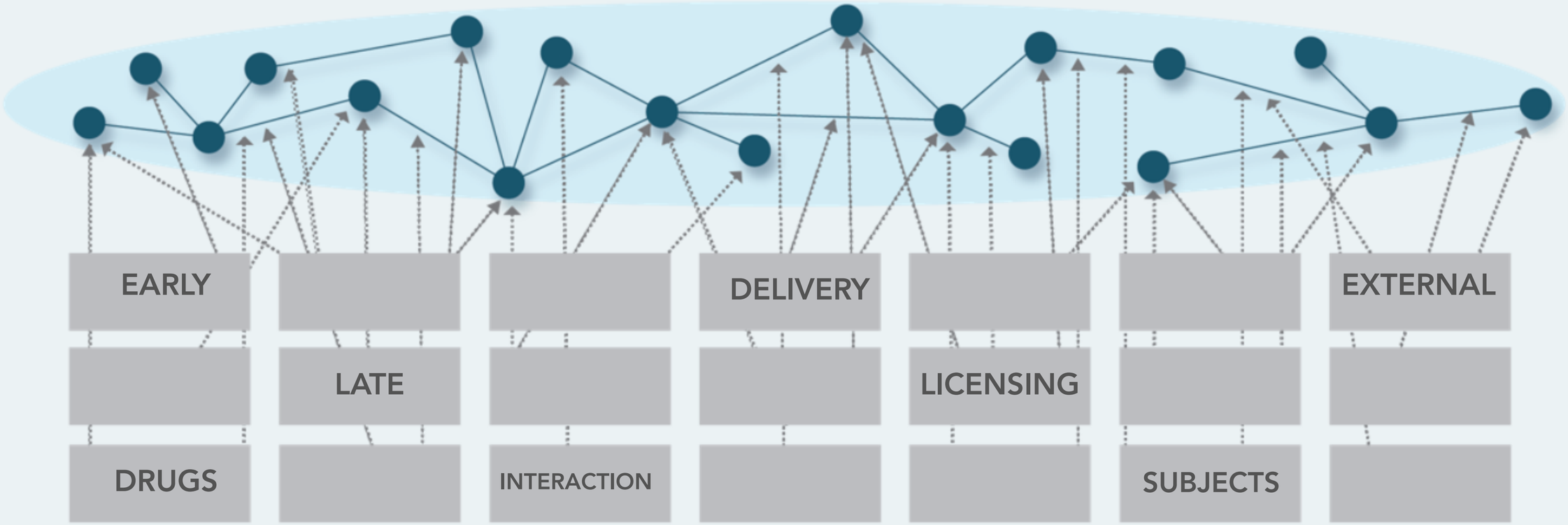
PETE NORVIG WAS RIGHT
“More data beats better algorithms"

BUT WHY CHOOSE?

Machine learning in the Knowledge Graph means:

- **MORE DATA.** Virtual graphs mean easily available, large training models.
- **FASTER LEARNING.** Online libraries learn faster than a database can write.
- **CONSTANT IMPROVEMENT.** Knowledge Graph learning uses fresh, timely data.

ENTERPRISE KNOWLEDGE GRAPH



THANK YOU!

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