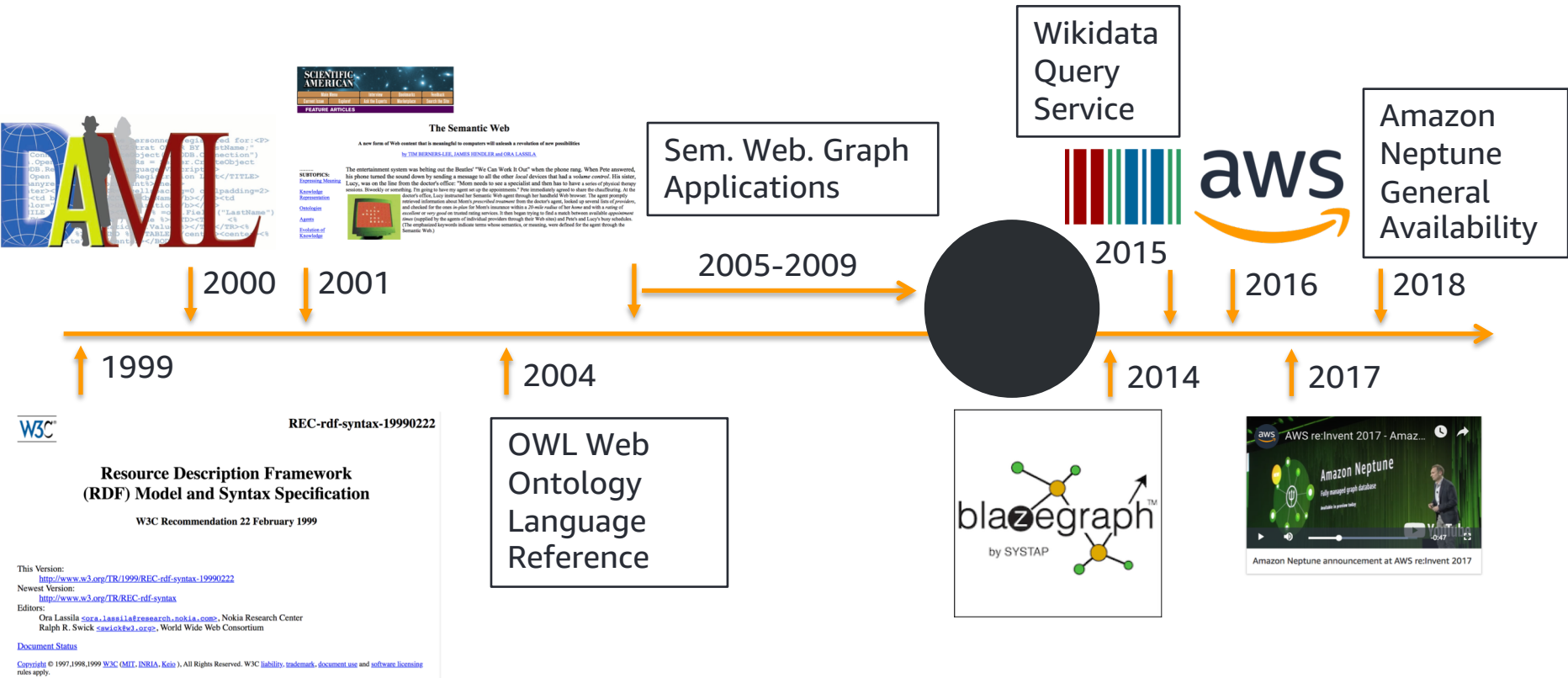


# It's just graph.

Brad Bebee – Amazon Web Services (AWS)  
Sr. Mgr., Product Mgmt., Amazon Neptune

# My journey through graph...



REC-rdf-syntax-19990222

Resource Description Framework (RDF) Model and Syntax Specification

W3C Recommendation 22 February 1999

This Version: <http://www.w3.org/TR/1999/REC-rdf-syntax-19990222>  
 Newest Version: <http://www.w3.org/TR/REC-rdf-syntax>

Editors: Ora Lassila [ora.lassila@research.nokia.com](mailto:ora.lassila@research.nokia.com), Nokia Research Center  
 Ralph R. Swick [swick@w3.org](mailto:swick@w3.org), World Wide Web Consortium

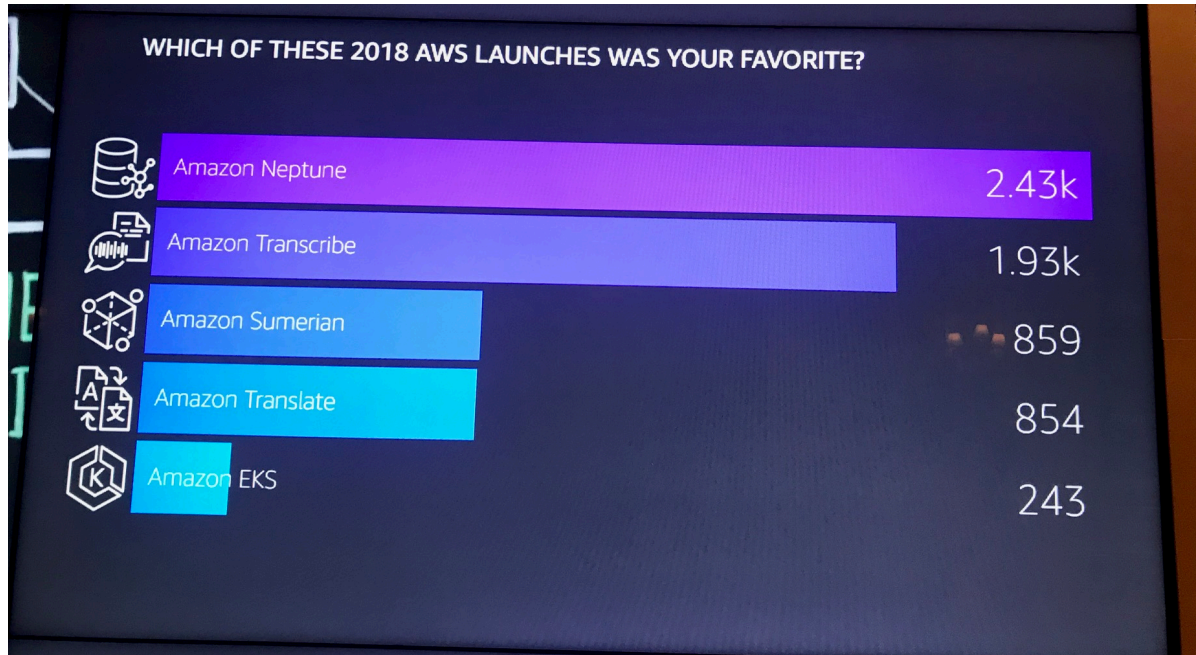
Document Status

Copyright © 1997,1998,1999 W3C (MIT, INRIA, Keio). All Rights Reserved. W3C liability, trademark, document use and software licensing rules apply.

OWL Web Ontology Language Reference

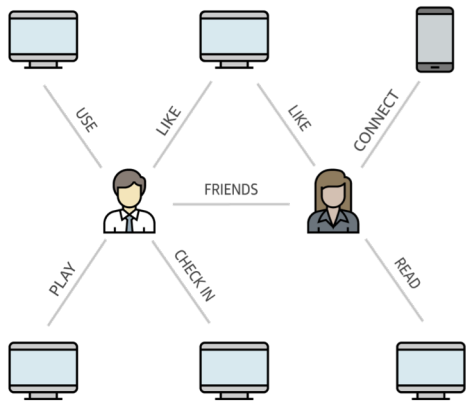


# Customers are excited about graph.

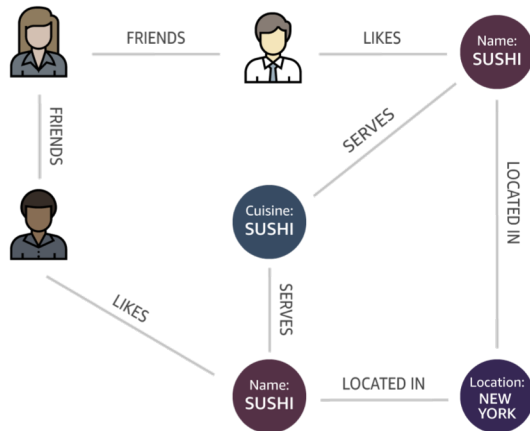


AWS re:Invent November 2018

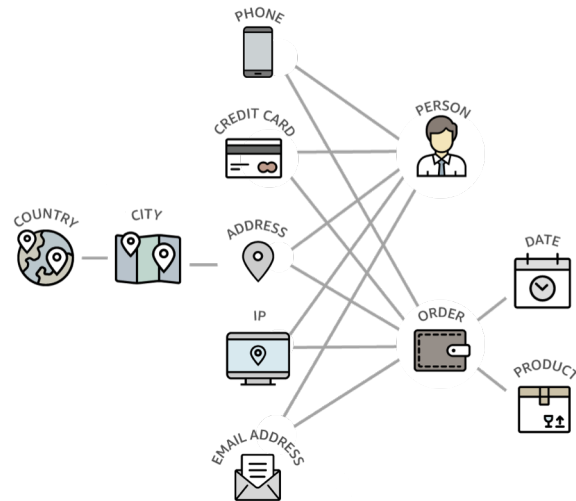
# When to use a graph? Highly connected data



Social Networks



Restaurant Recommendations



Retail Fraud Detection

# Customers Uses for Highly Connected Data



Social Networking



Recommendations



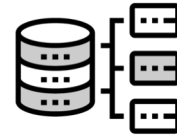
Fraud Detection



Knowledge Graphs



Life Sciences

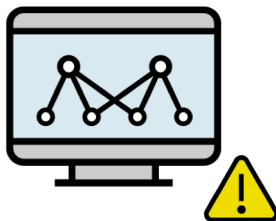


Network & IT Operations

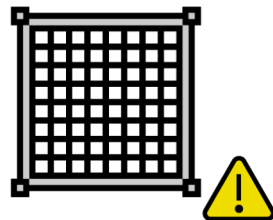
# The challenges of building apps with highly connected data using a relational database (or key-value store)



Unnatural for  
querying graph

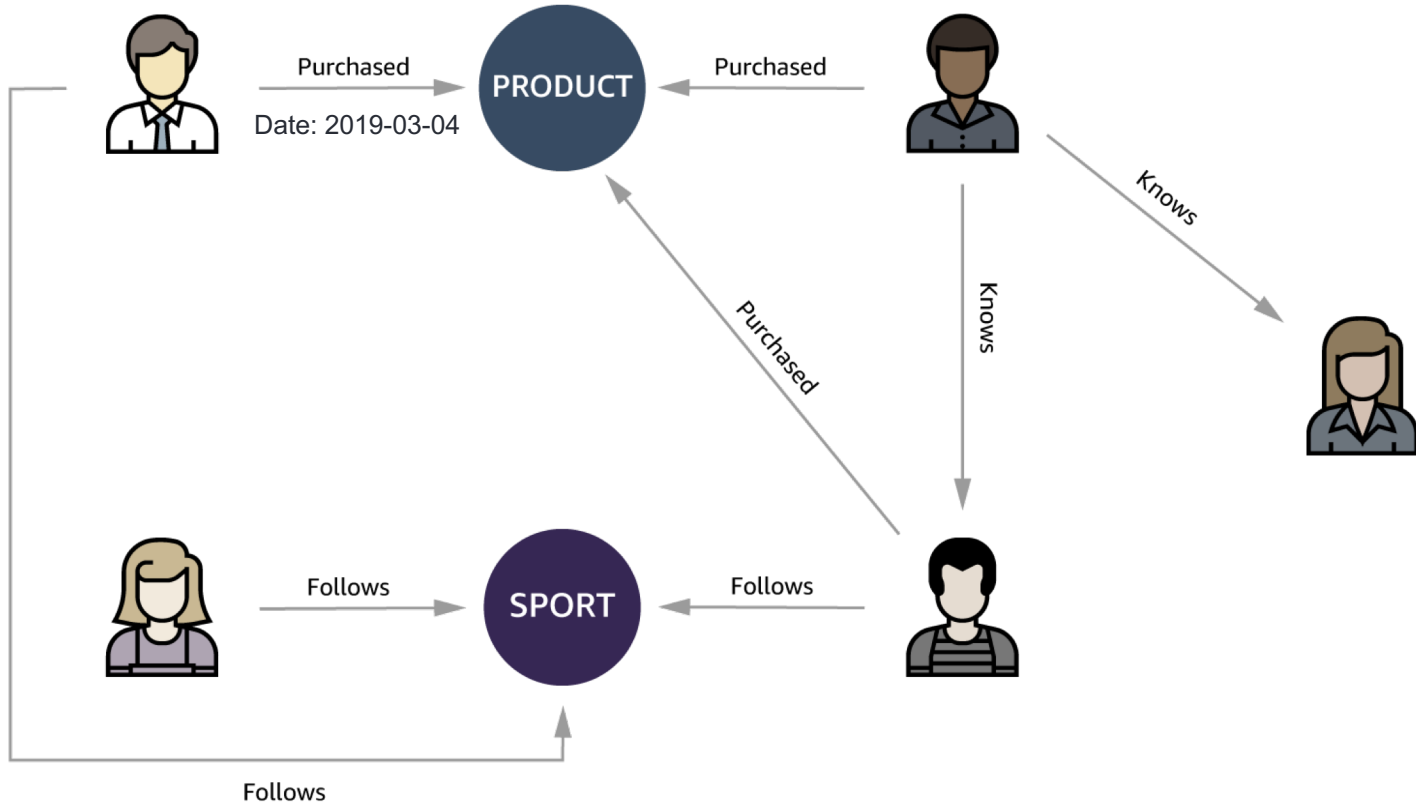


Inefficient  
graph processing

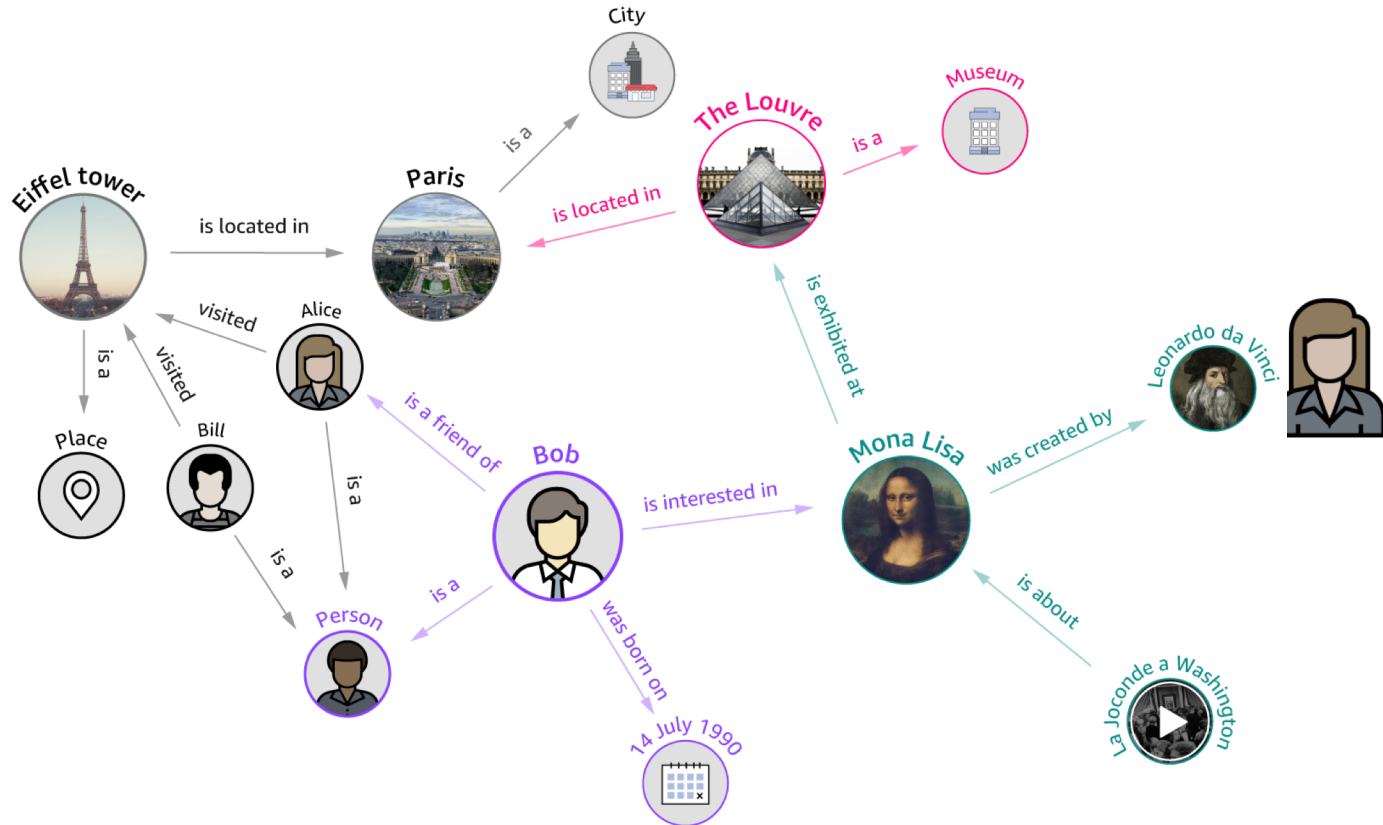


Rigid schema inflexible  
for changing data

# When a customer thinks of a graph



# When a customer thinks of a graph





# When a customer thinks of a graph

But they're typically not  
thinking about...

# Graph models and frameworks

## PROPERTY GRAPH (PG)

Apache TinkerPop Gremlin

openCypher

Property Graph Query Language (PGQL)

Others...

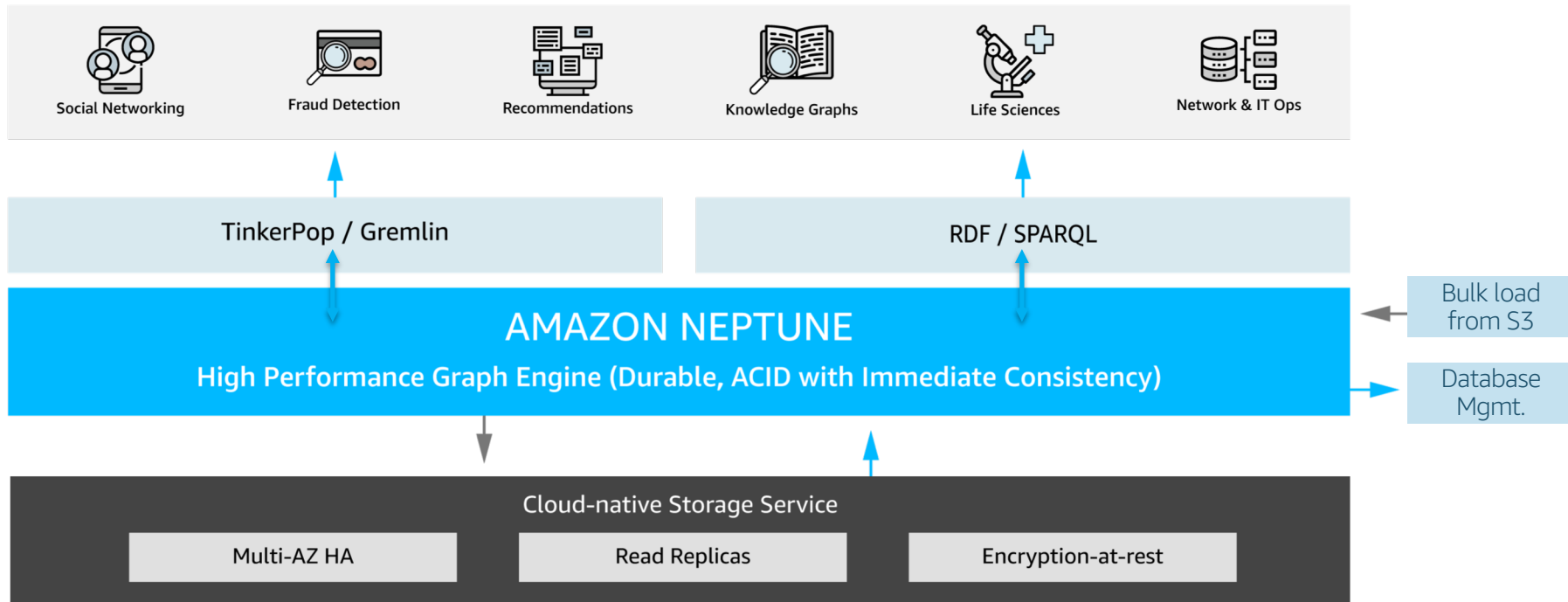
## RESOURCE DESCRIPTION FRAMEWORK (RDF)

W3C Standard

SPARQL Query Language



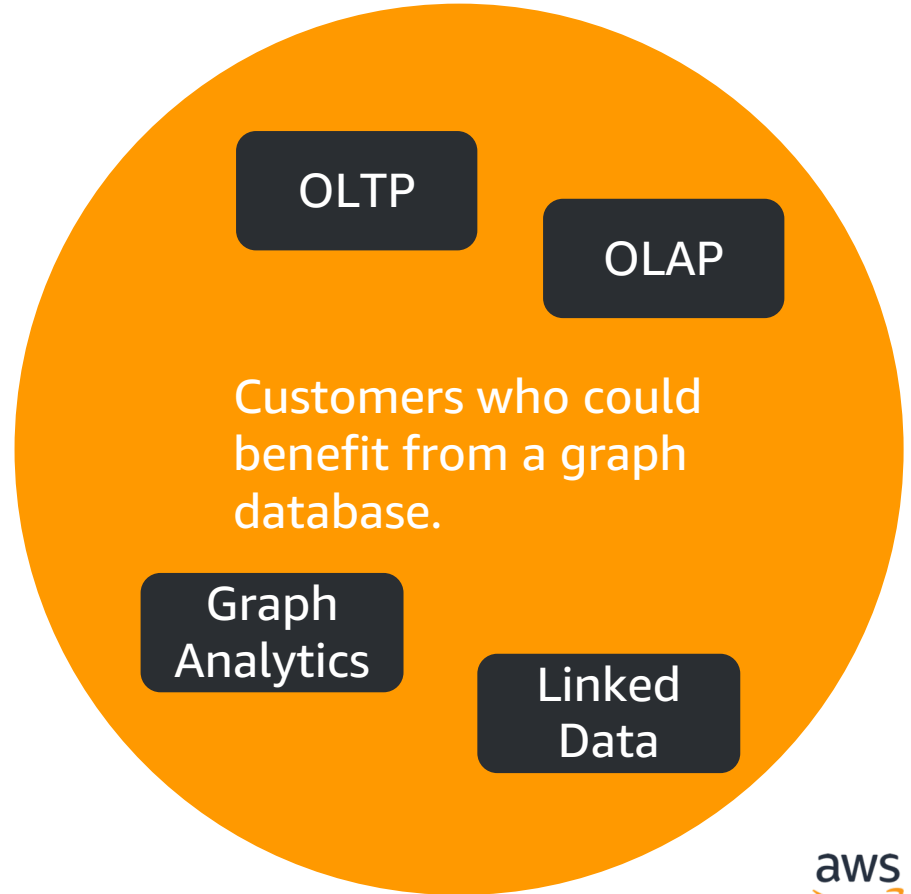
# Supporting both models is important to Amazon Neptune.



# How big is the graph market segment? What is it?



Customers who know they want a graph database.



# Customers want graph and have use cases across graph data models.

- Many customers want both PG and RDF.
  - Developer team preference
  - Existing applications
- Semantic alignment / data canonicalization at an organization level (RDF – typically)
  - Business Applications (PG – often)
  - Graph Analytics

# Customers want to...

- Exchange data
  - Between property graph applications
  - RDF->PG and PG->RDF
- Query graph data
  - *Which PG query language should I use?*
  - *I can't query my PG data with SPARQL.*
  - *I have RDF Linked Data I want to use in my PG application.*
- Understand how RDF can be used for graphs
  - Reification gap
  - Help to conceptualize graphs in RDF

# Building approaches that enable commonality enables a larger set of graph users.

- A rising graph floats all nodes, edges, and properties (or resources).
  - Let's give customers a (standard) way to interchange data between PG and RDF.
  - Let's make it easier for customers to use RDF to model their graphs.
  - Let's make graph query that works across models more accessible to a broader set developers.

It's just graph; let's make it that way  
for graph application builders.



# Thank you!

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