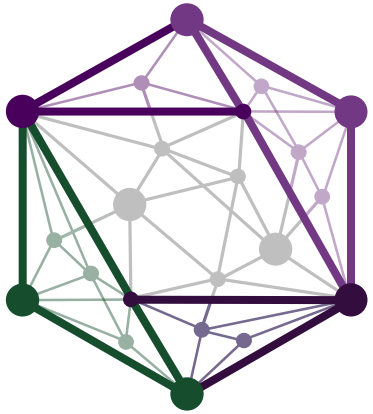


ENTERPRISE KNOWLEDGE

DEVELOPING A SEMANTIC HUB FOR AN INTERNATIONAL DEVELOPMENT ORGANIZATION

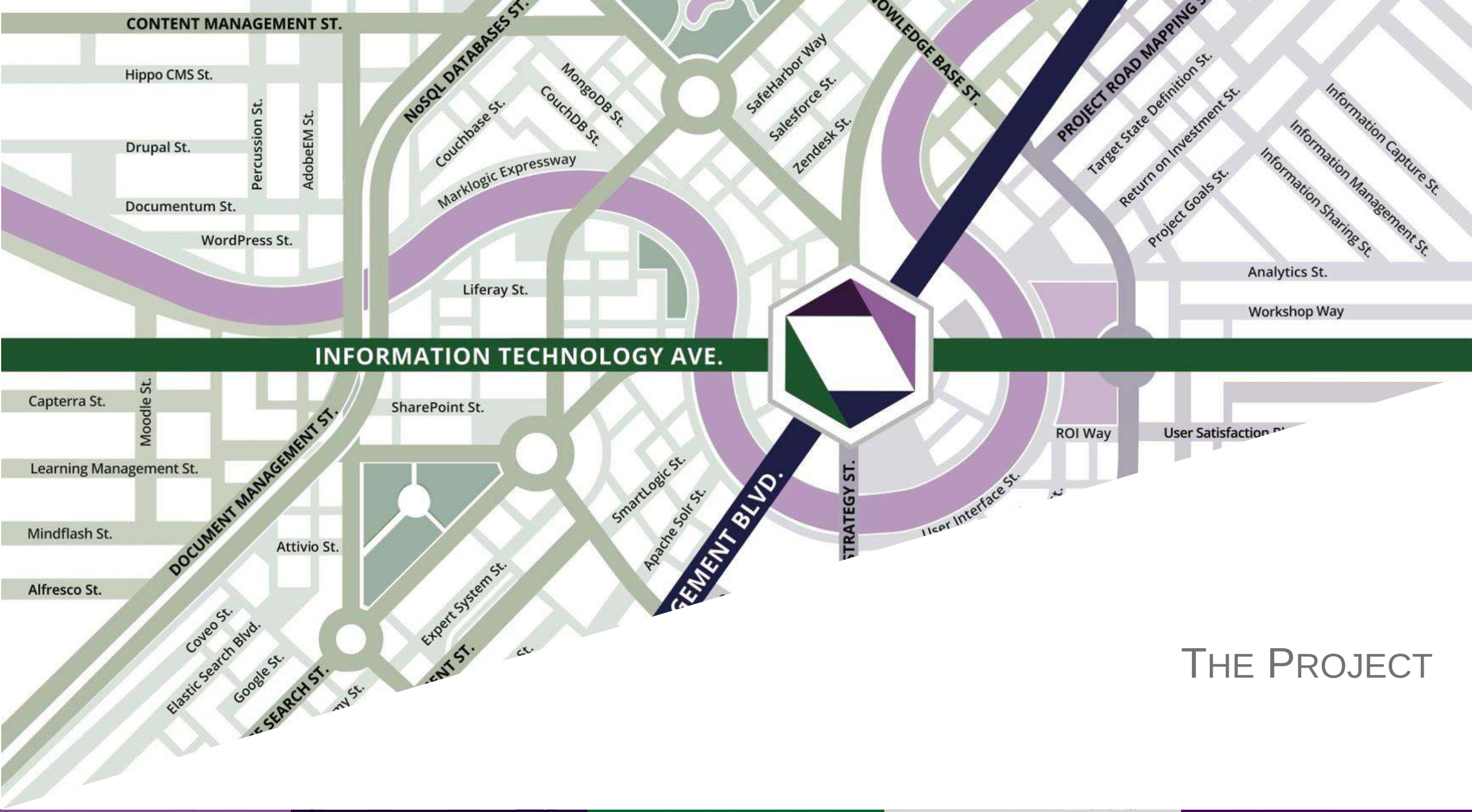
Wednesday, 12 September, 2018

HEY LOOK, THAT'S US!

ZACH WAHL

JOE HILGER

@ZACHARYWAHL, @JHILGERBC
@EKCONSULTING


CONTENT MANAGEMENT ST.
Hippo CMS St.
Drupal St.
Documentum St.
WordPress St.
Percussion St.
AdobeEM St.
NoSQL DATABASES ST.
Couchbase St.
CouchDB St.
MongoDB St.
Marklogic Expressway
SafeHarbor Way
Salesforce St.
Zendesk St.
KNOWLEDGE BASE ST.
PROJECT ROAD MAPPING ST.
Target State Definition St.
Return on Investment St.
Project Goals St.
Information Capture St.
Information Management St.
Information Sharing St.
Analytics St.
Workshop Way
Liferay St.
INFORMATION TECHNOLOGY AVE.
Capterra St.
Moodle St.
Learning Management St.
Mindflash St.
Alfresco St.
DOCUMENT MANAGEMENT ST.
SharePoint St.
Attivio St.
Coveo St.
Elastic Search Blvd.
Google St.
SEARCH ST.
Expert System St.
SmartLogic St.
Apache Solr St.
GEMENT BLVD.
STRATEGY ST.
ROI Way
User Satisfaction
User Interface St.

THE PROJECT

The Semantic Hub

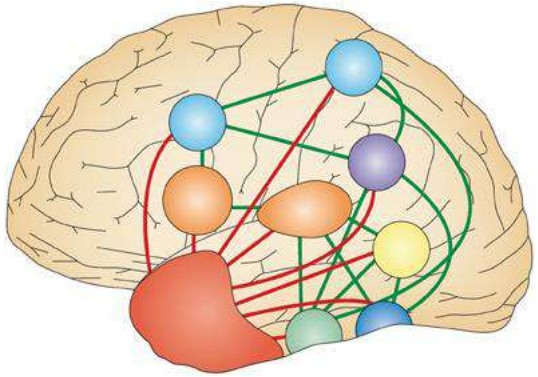
SharePoint

Intranet

Publications

Social Media

Corp. Library



The Semantic Hub

People

Project

Country

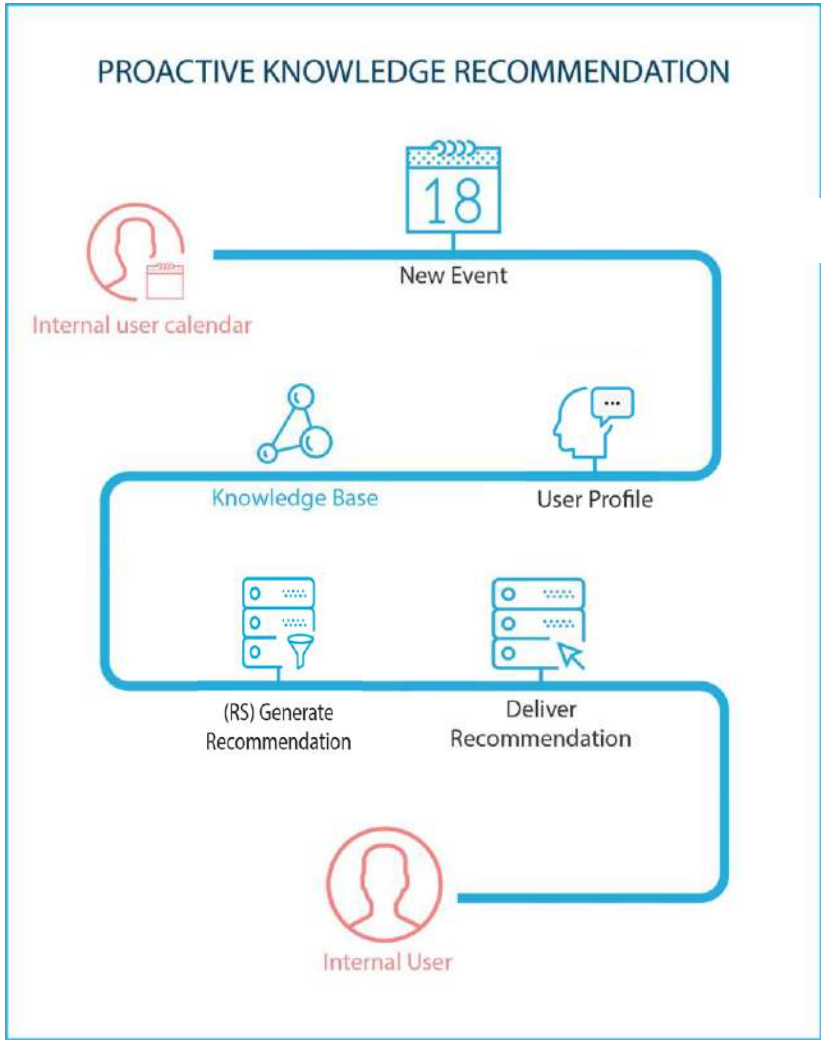
Sector

Knowledge Worker

A system based on semantic technologies that will facilitate this flow of information to the bank's staff ensuring they are more productive.

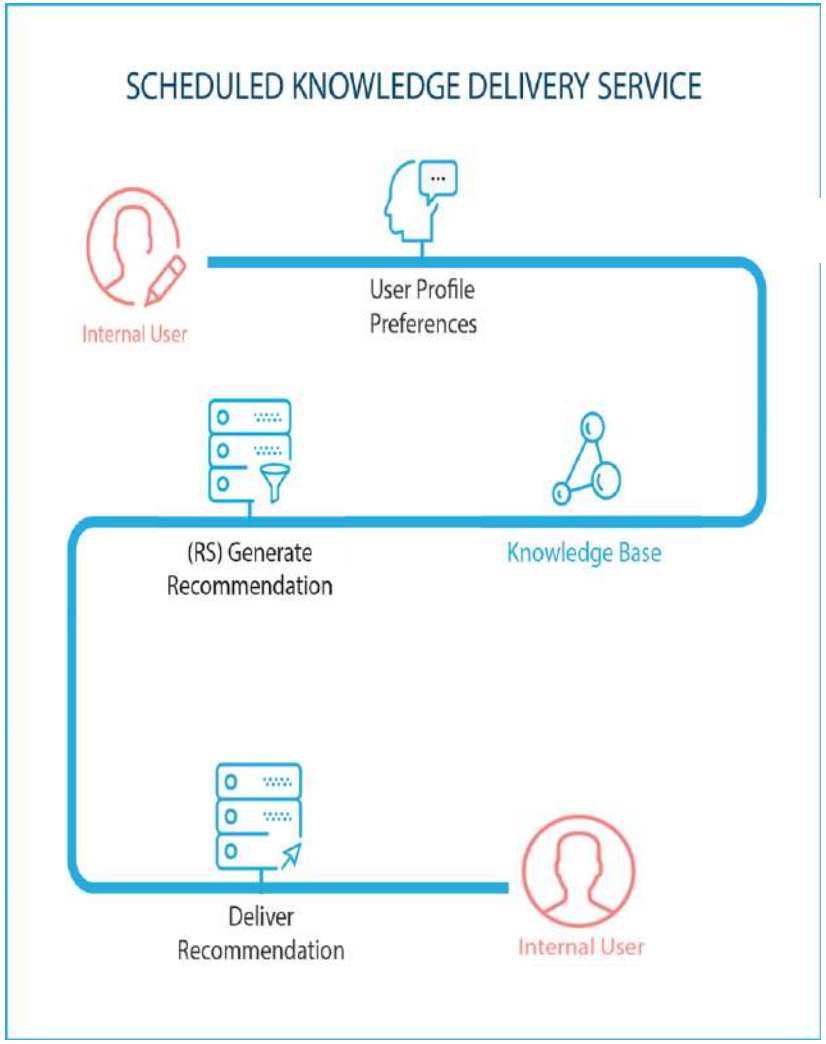
Proactive Recommendations

- The Semantic Hub automatically identifies relevant content from a meeting invitation based on the people invited and the topics described in the meeting.
- Meeting organizers are aware of the most important and relevant information for more productive meetings and better informed discussions.



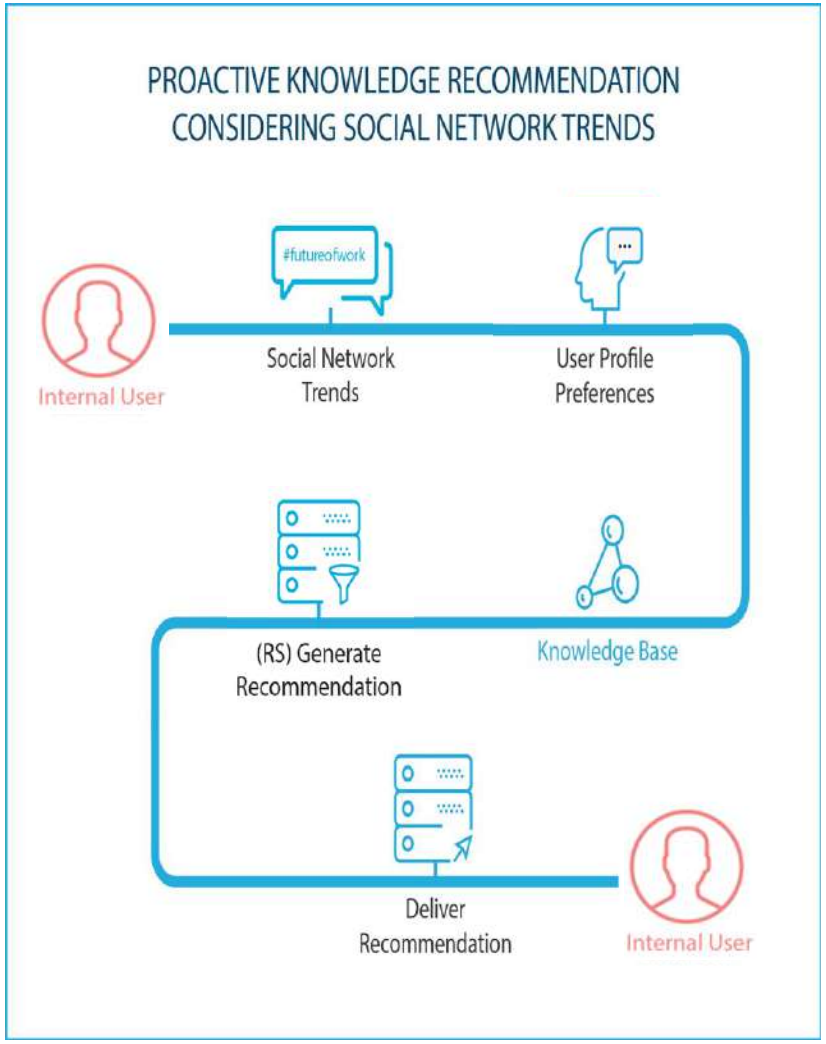
Scheduled Delivery Service

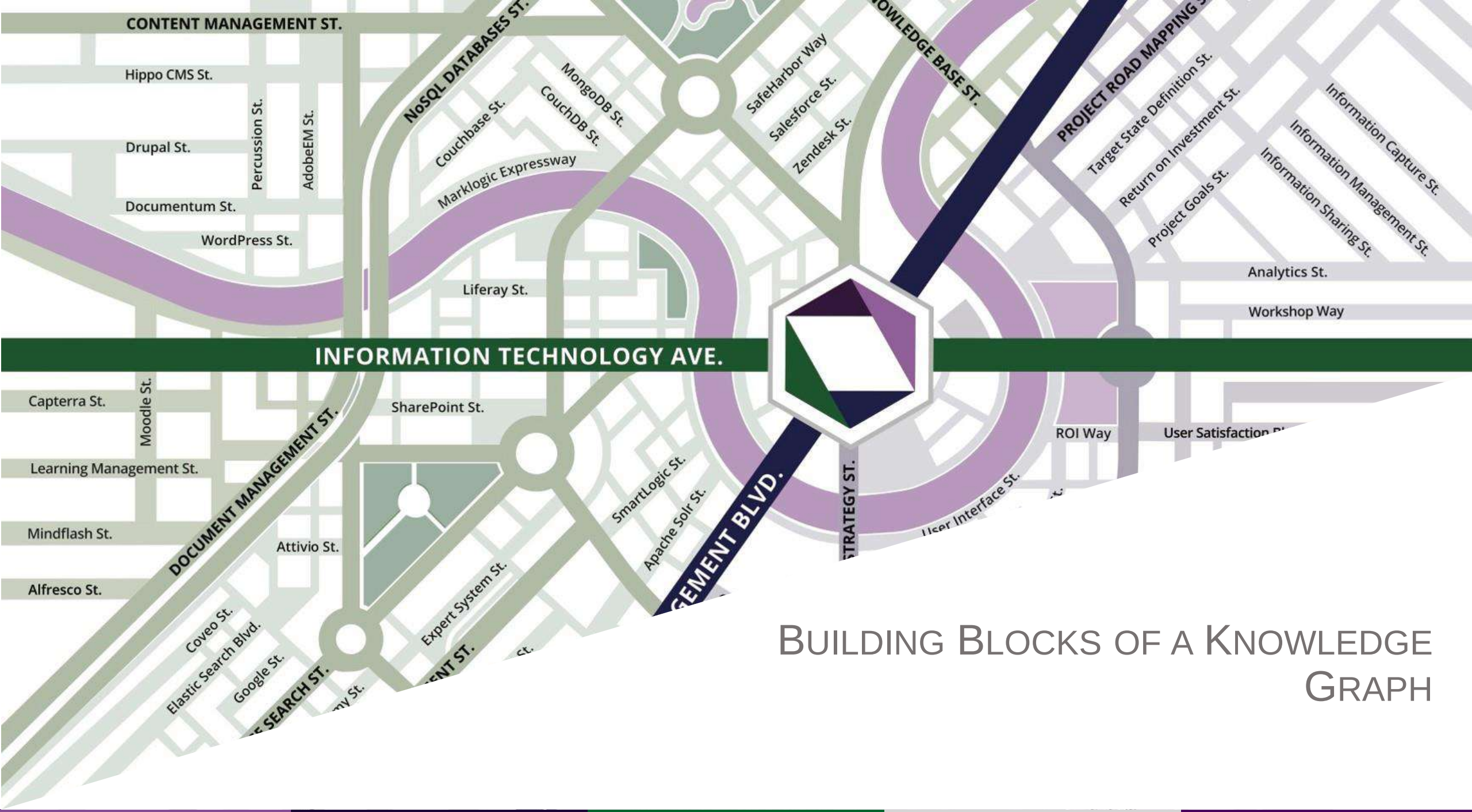
- Push meaningful content recommendations about relevant countries or sectors so that bank personnel are up to date on the latest information in their market or area of expertise.
- Continuously enhance the recommendations based on the material users read, the projects they work on, and the content they produce.



Social Network Trends

- Gather social network trends using a product called brandwatch.
- Automatically share relevant information with country and sector leaders so that they are aware of the latest information in their markets or area of expertise.



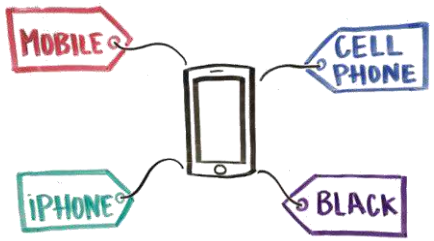


BUILDING BLOCKS OF A KNOWLEDGE GRAPH

KNOWLEDGE ORGANIZATION CONTINUUM

Free-text tags.

FOLKSONOMY

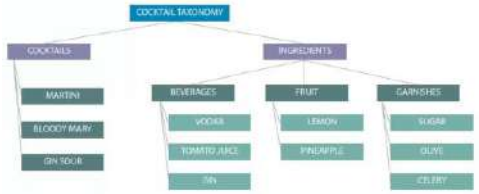


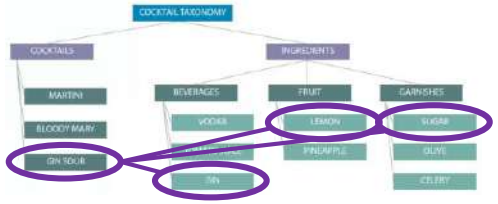
CONTROLLED LIST

List of pre-defined terms.
Improves consistency.

Pre-defined terms & synonyms.
Hierarchical relationships.
Improves consistency.
Allows for parent/child content relationships.

TAXONOMY



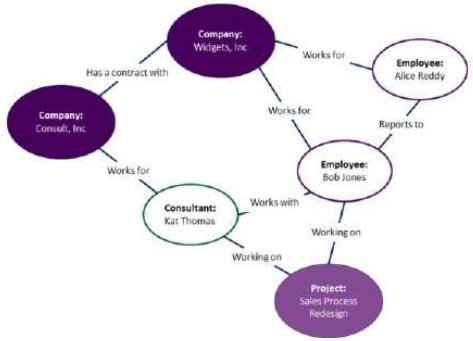


THESAURUS

Pre-defined terms & synonyms.
Hierarchical relationships.
Associative (“related to”) relationships.
Scope notes.
Increased expressiveness.

Scope notes.
Pre-defined classes & properties.
Expanded relationship types.
Increased expressiveness.
Semantics. Inference.

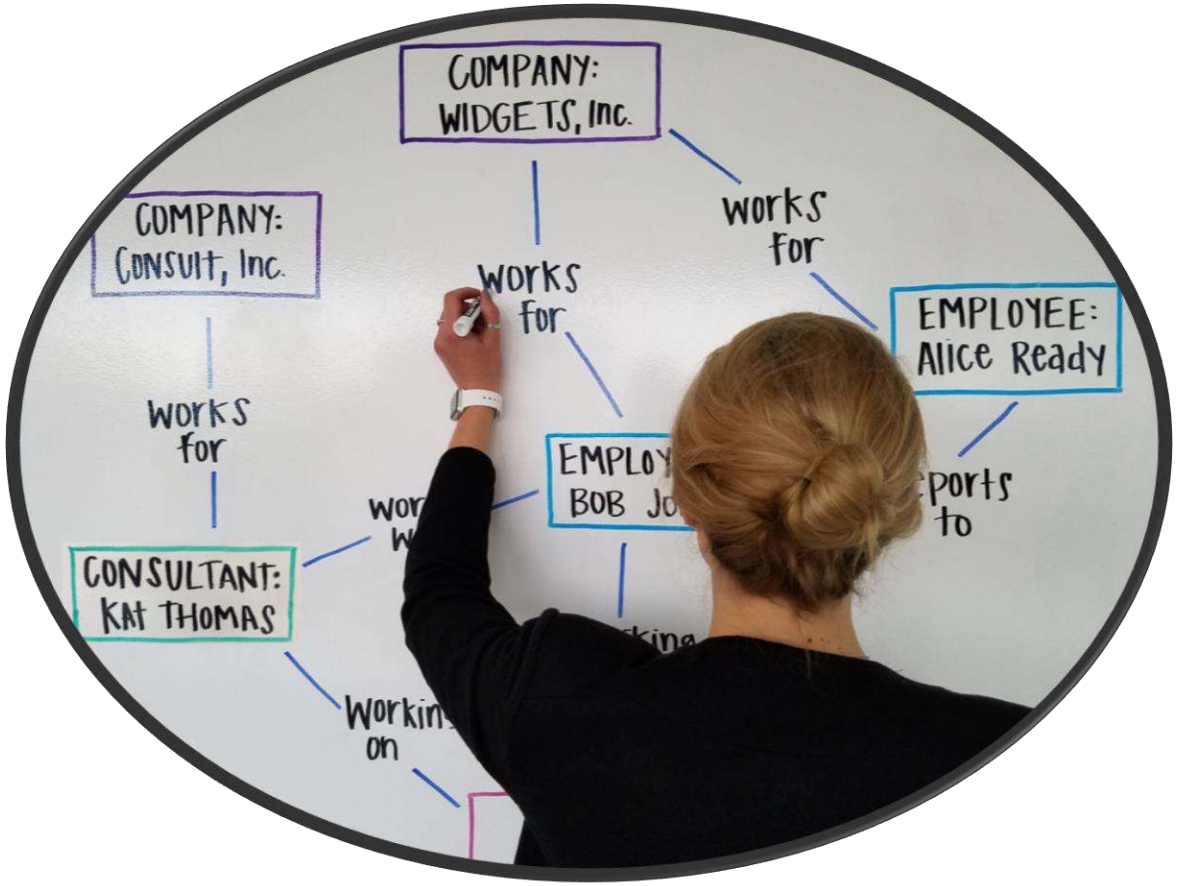
ONTOLOGY



Business Ontology

A defined data model that describes **structured and unstructured** information through:

- **entities,**
- their **properties,**
- and the way they **relate** to one another.



- Ontology is about **things**, not **strings**.
- Ontologies model your domain in a **machine and human understandable format**.
- Ontologies provide **context**.
- Effective ontologies require **a deep understanding** of the knowledge domain.

Graph Database

- A linked data store that organizes structured and unstructured information through:
  - **entities**,
  - their **properties**,
  - and **relationships**.

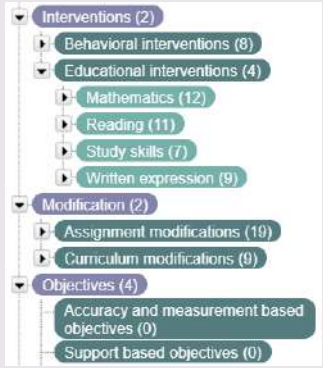
- Also known as:
  - Linked Data Store (LD Store)
  - Triple Store
  - “Knowledge Graph”

- Consists of triples

Subject	Predicate	Object
Project A	hasTitle	Title A
Person B	isPMOn	Project A
Document C	isAbout	Topic D
Document C	isAbout	Topic F
Person B	IsExpertIn	Topic D
…	…	…

KNOWLEDGE GRAPH

Business Taxonomy



Content Sources

salesforce

SharePoint

Drupal

Excel

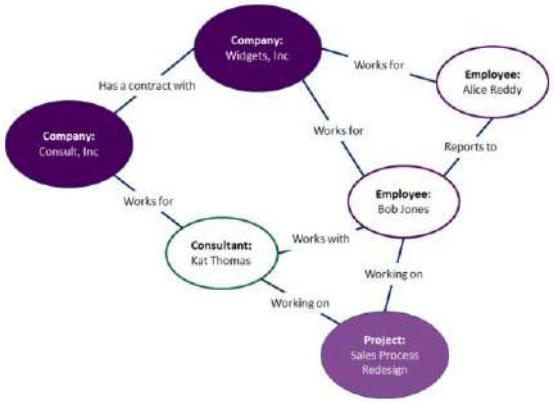
MediaBeacon® An ESKO Company

twitter

Microsoft Dynamics

WebDAM® web-based digital asset management

Business Ontology



Graph Database

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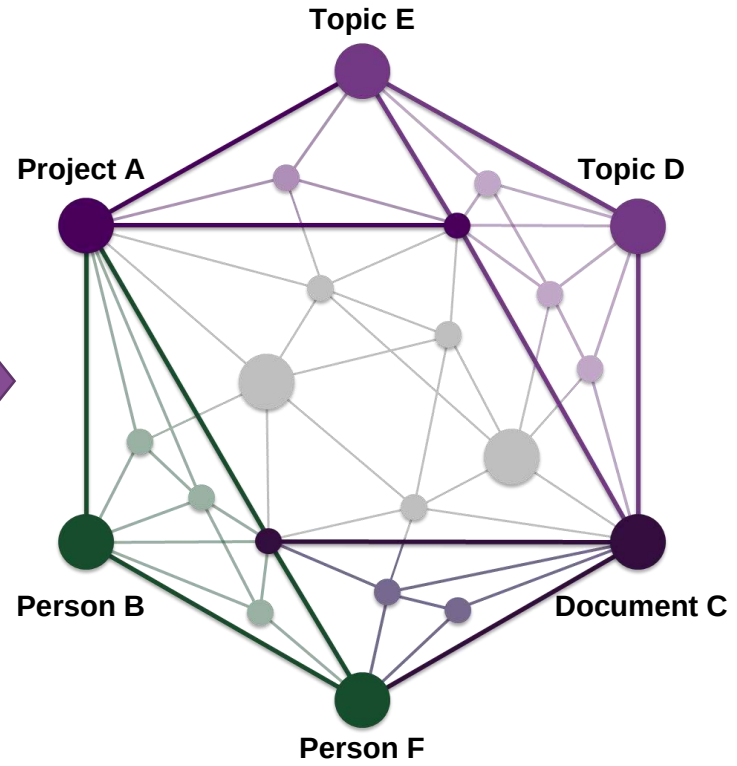
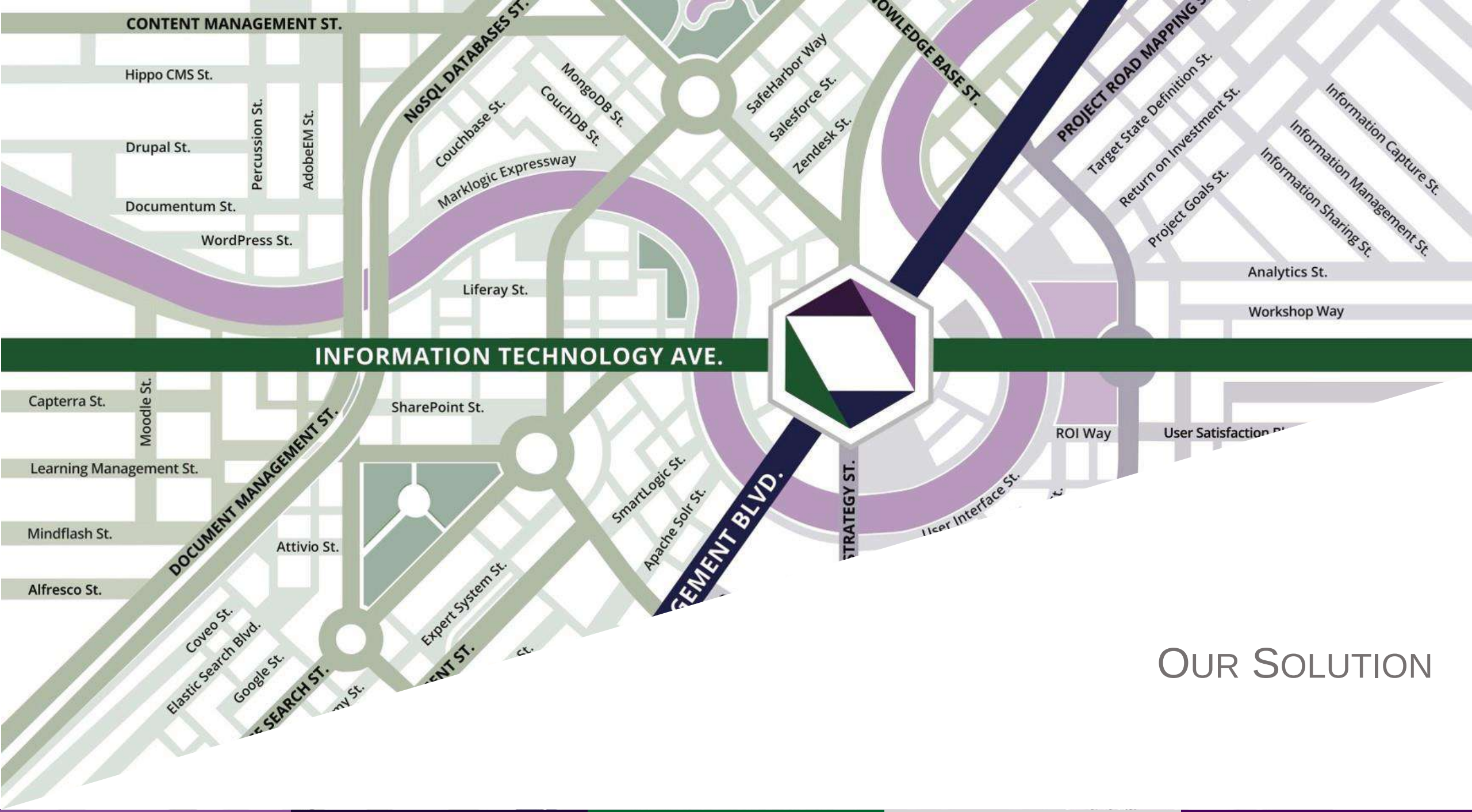
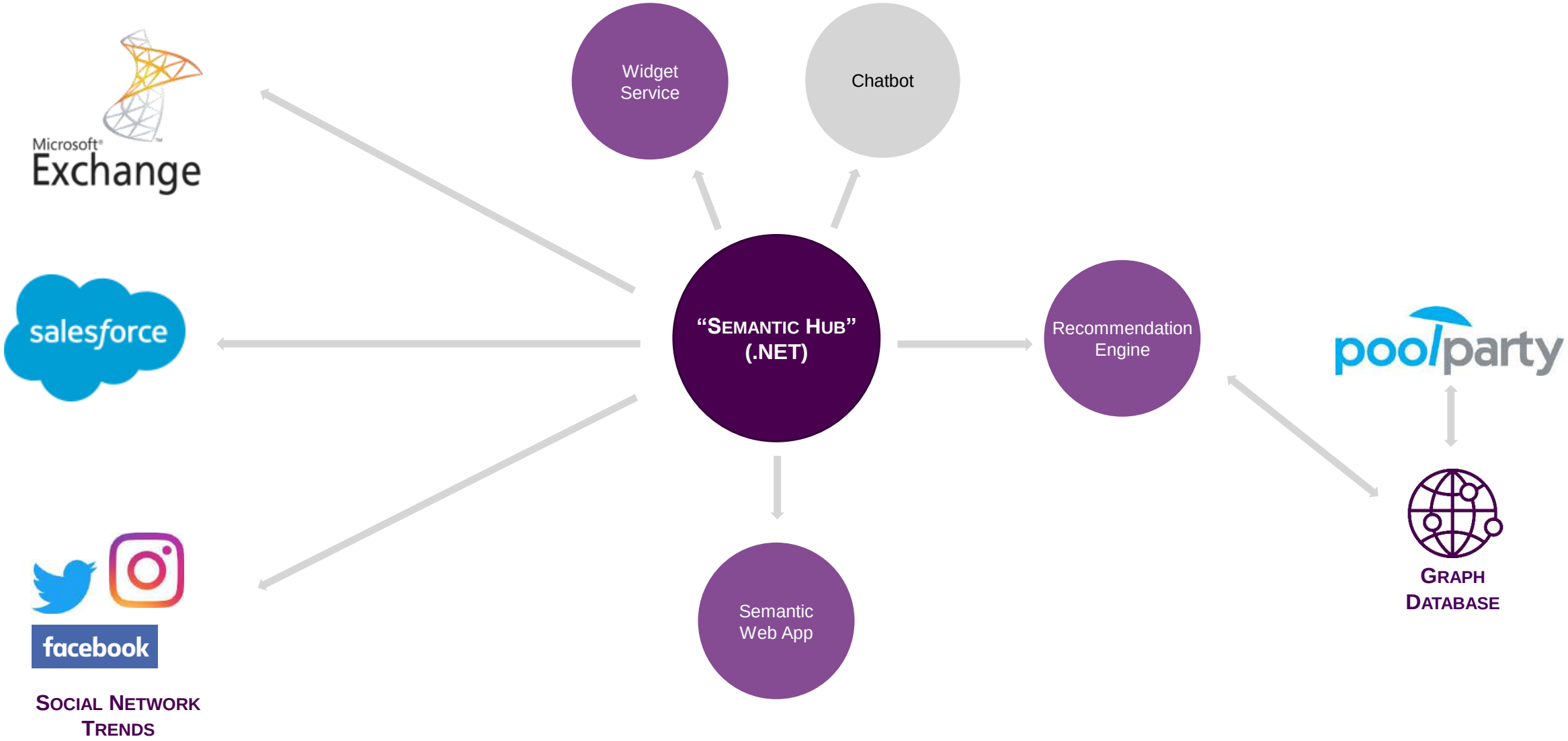
Enterprise Knowledge Graph





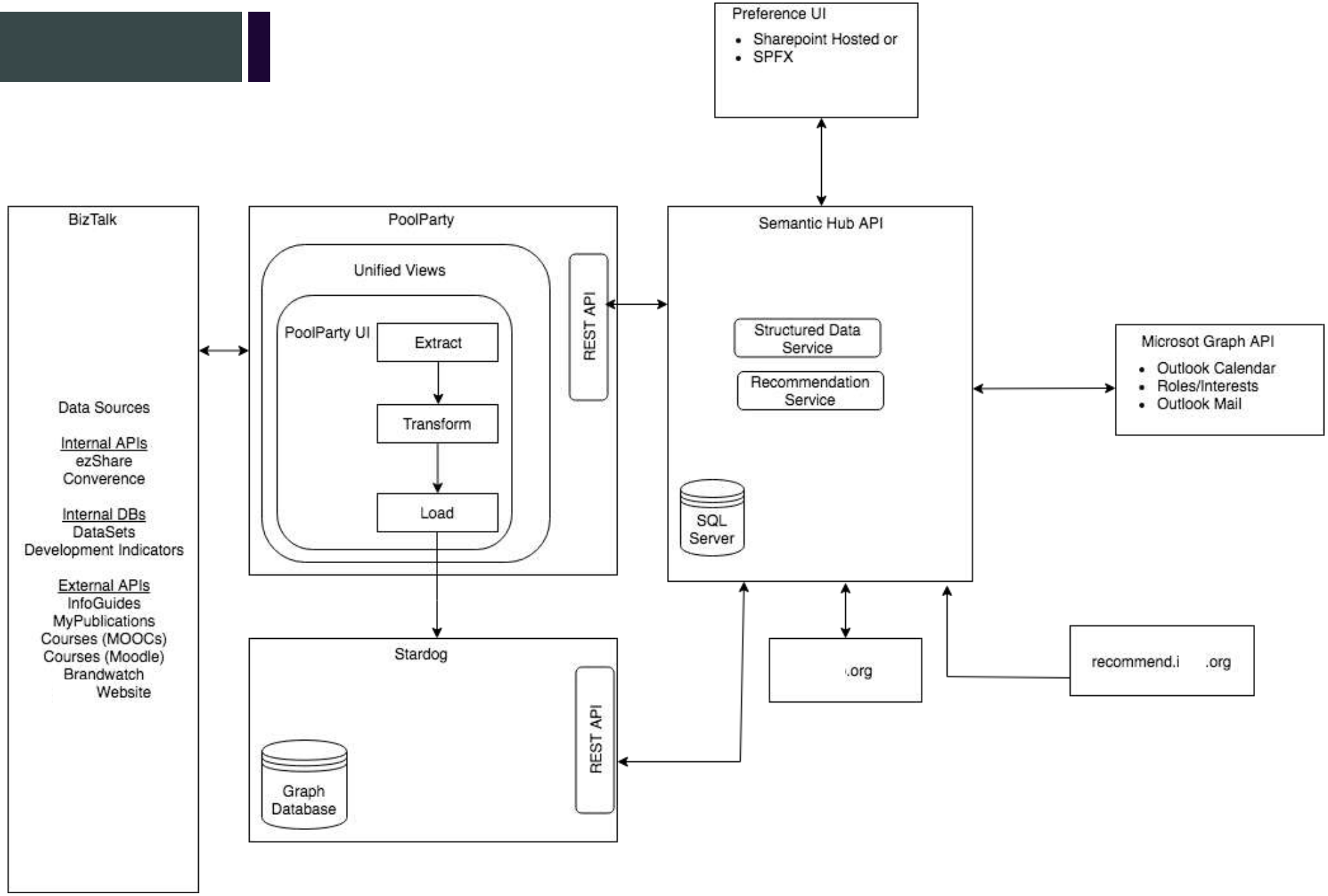
Our Solution

HIGH LEVEL ARCHITECTURE



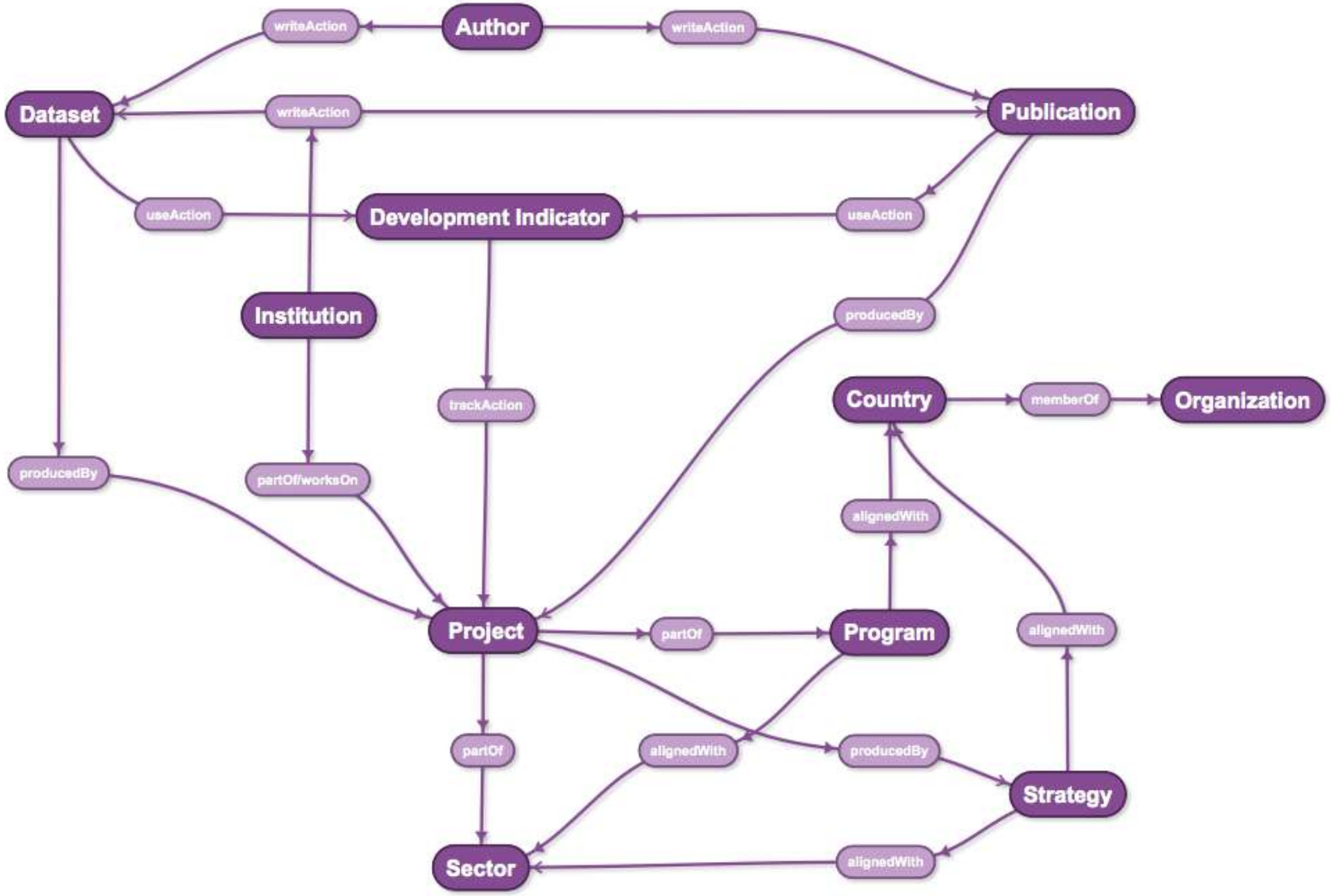
TECHNICAL DESIGN

Technologies:
- PoolParty
- Stardog
- BizTalk
- Office 365

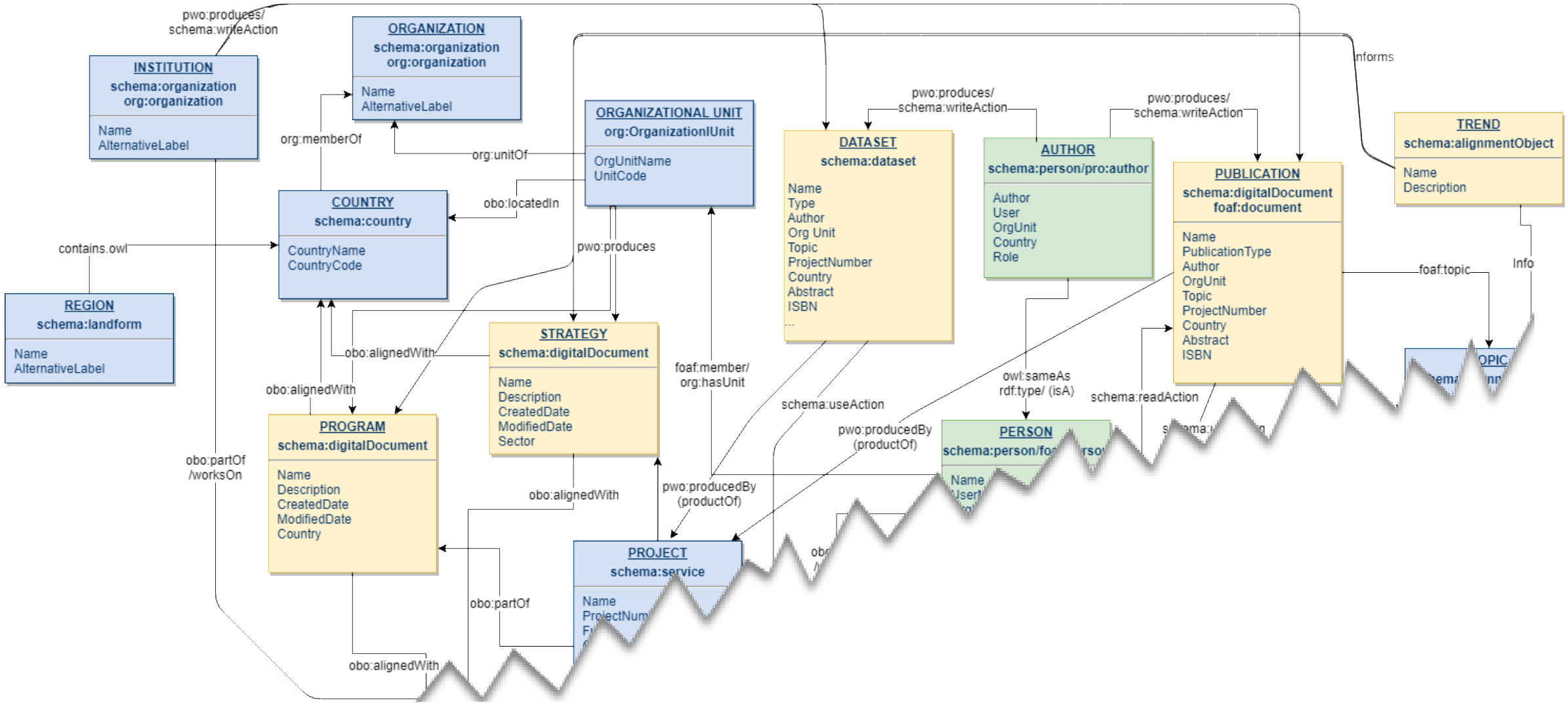


Our Ontology

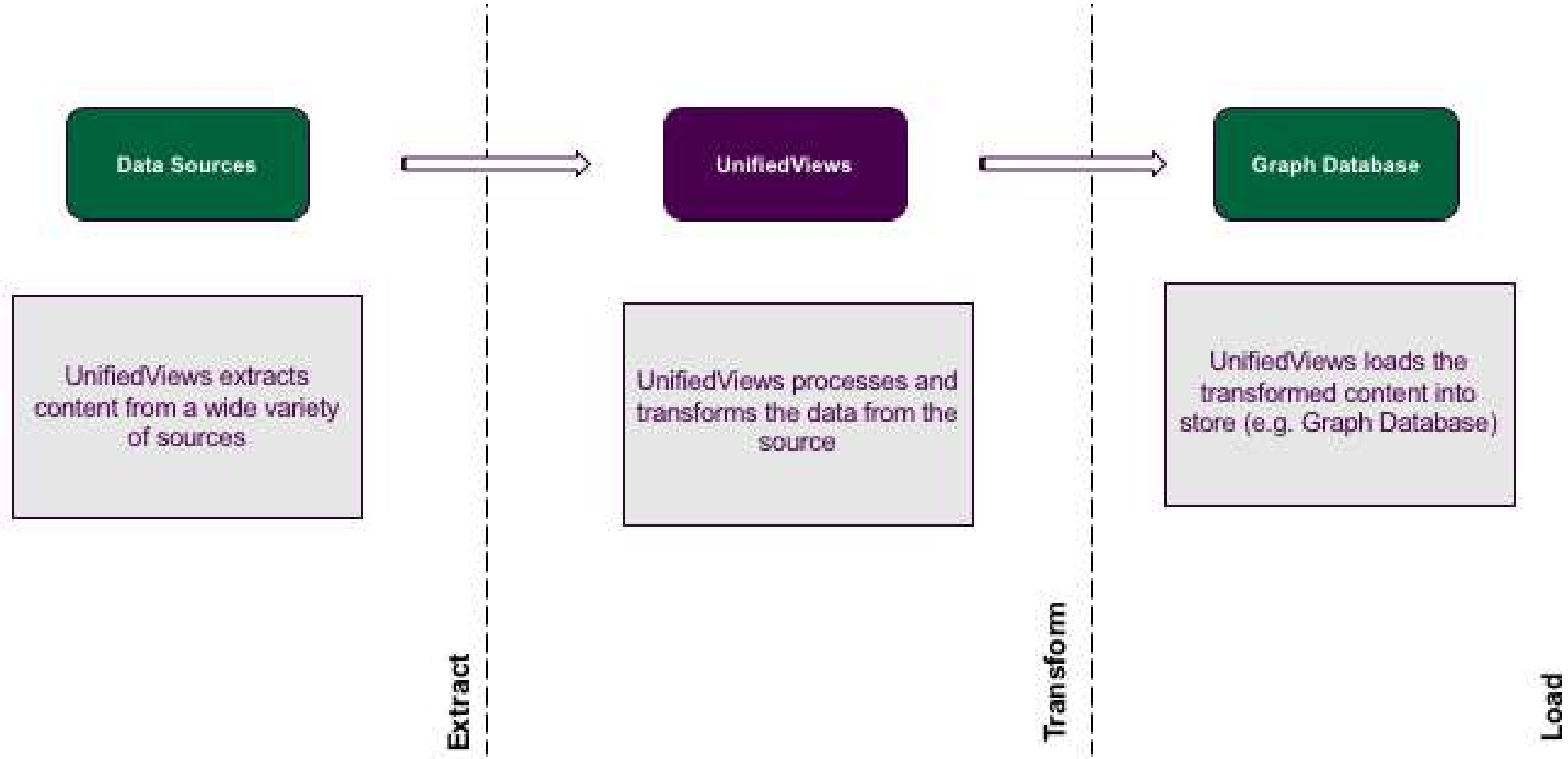
- Stores Knowledge Objects of the Bank
- Establishes **relationships** among objects
- Provides ability to make **inferences** between objects



DETAILED ONTOLOGY



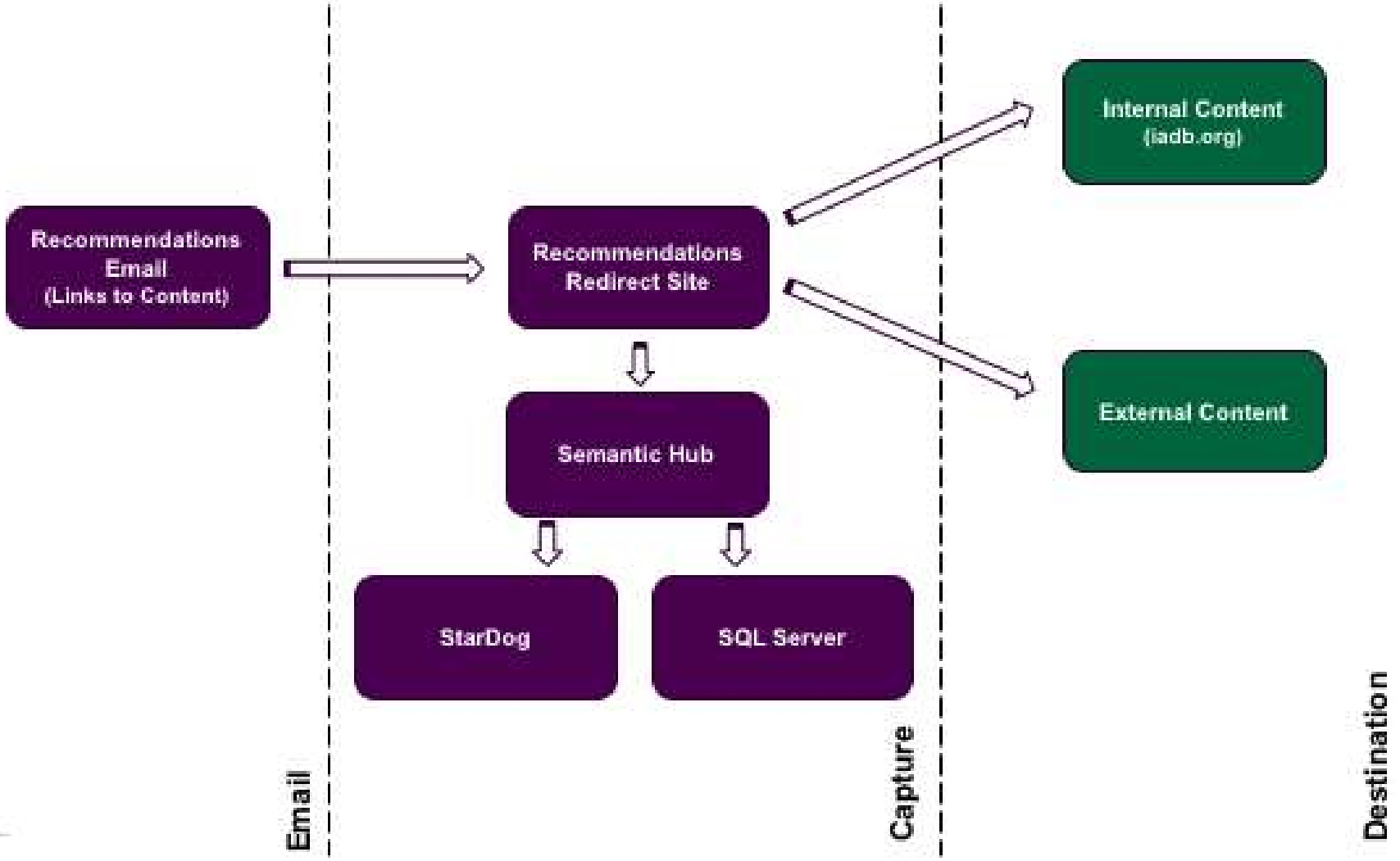
LOADING CONTENT AND DATA



EMAIL TRACKING

Activity

- User clicks email link to Recommendations Redirect site
- Site captures activity in SQL Server and Stardog
- Site redirects user to destination – internal or external



Project Retrospective

What went Well

- Our ontology worked well and used Schema.org to help with SEO.
- We were able to ingest and tag all of our content using the ETL engine (Unified Views).
- The new Graph API made it easy to collect information and activities from Office 365.
- Stardog and PoolParty APIs were easy to work with and allowed us to query the information using Sparql.

What did we learn

- Measuring the success of recommendations is very difficult when working with a system that has no user interface.
- Privacy concerns may limit your ability to derive user information from user activity.
- Deep analysis of the content and user activity is critical.
- Keep the ontology simple and then grow it.
- The process is very iterative. TRY… LEARN … TRY AGAIN!

What would we do Differently

- Implement the solution through search or another interactive tool to gain a better understanding of what people want first.
- Address privacy concerns up front to make sure there are no unanticipated constraints.

CLOSING

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