

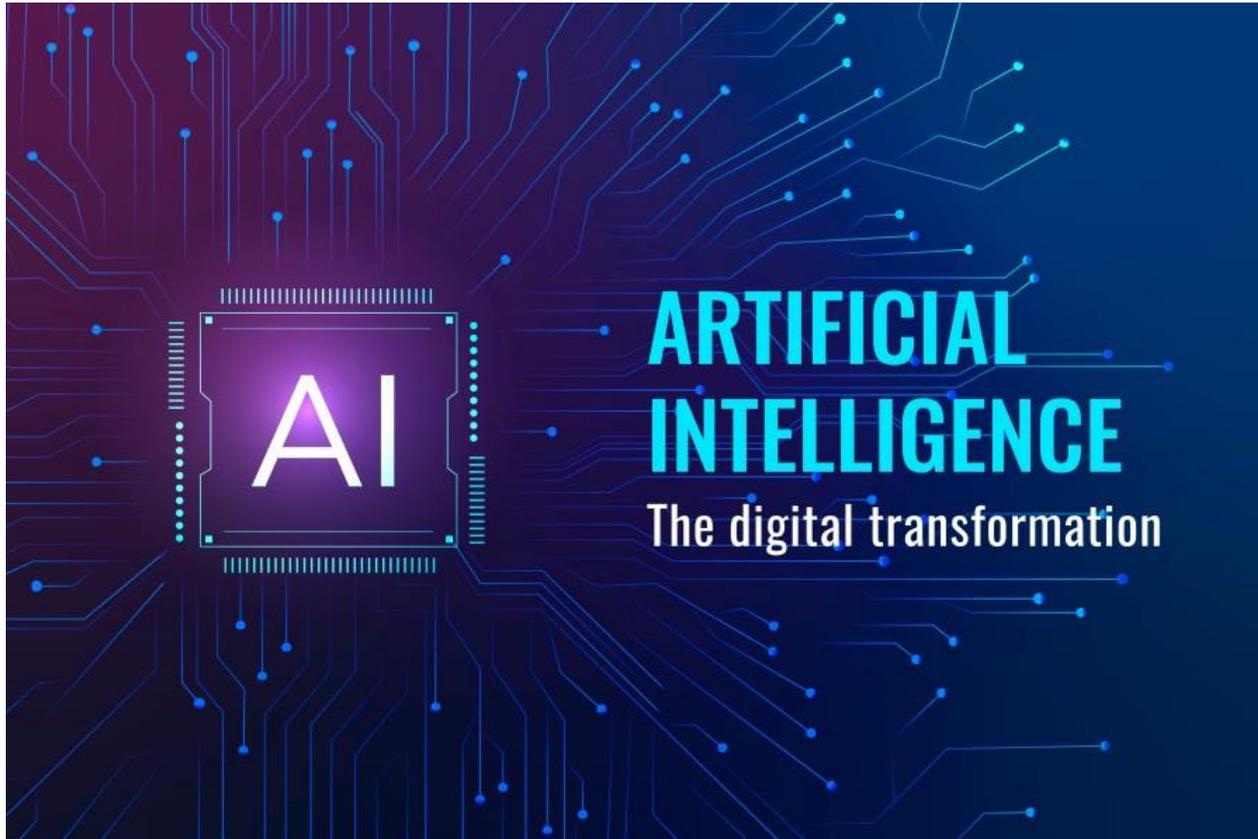


**9<sup>th</sup> SDMX GLOBAL CONFERENCE**  
**EMPOWERING DATA COMMUNITIES**

# Leveraging AI techniques in SDMX visualization

**Presented by: Muneera Albuainain**  
**Ph.D. Researcher in business analytics at UOB**

# AI – Artificial intelligence



- **(AI)** refers to the development of computer systems and algorithms that can perform tasks that typically require **human intelligence**
- Techniques & approaches aimed at enabling machines to:  
**Understand, Reason, Learn, and Make Decisions**



# Initiative made up of 7 international organizations

The world bank, European central bank, United Nations, Organization for Economic Corporation and Development, Euro Stat, International Monetary Fund and Bank for international settlements



**THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP



EUROPEAN CENTRAL BANK



**United Nations** | DESA  
Statistics



BETTER POLICIES FOR BETTER LIVES



**eurostat**



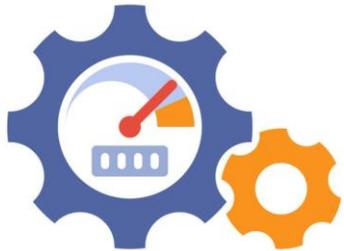
BANK FOR  
INTERNATIONAL  
SETTLEMENTS

# The benefits of SDMX

Improve **data quality**



Improve **data accuracy**



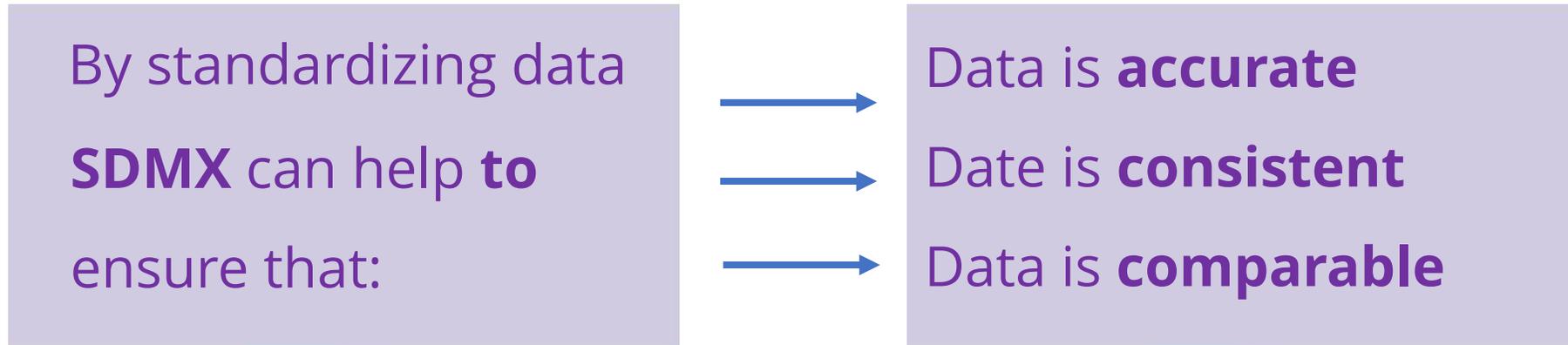
**Reduce duplication and increase efficiency**

Facilitate **international comparisons**

**Reduce the cost**



# Importance of SDMX



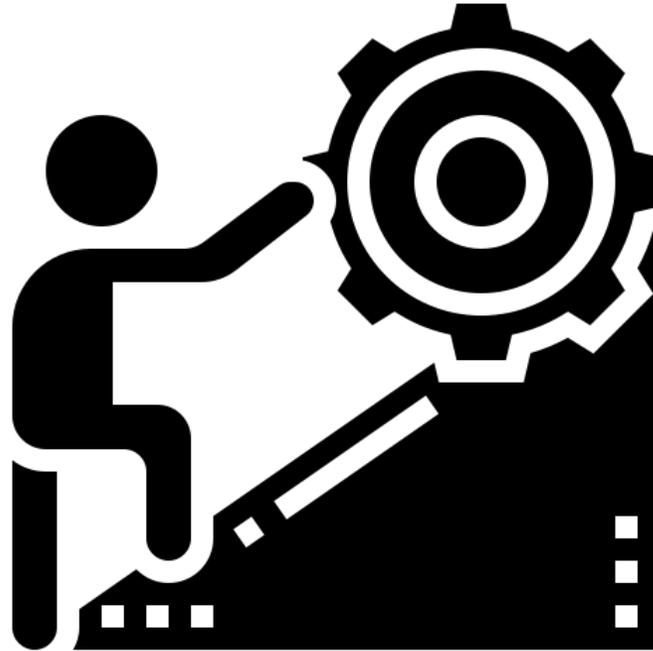
**Reliable data is crucial for making informed decisions**

**SDMX can help organizations to avoid duplicating efforts and free up resources for more important tasks**

# Challenges of SDMX

Accessibility

Complexity



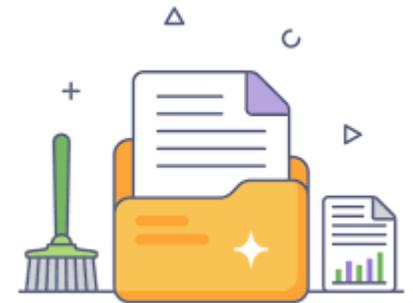
Collecting and processing data

Ensuring accuracy & completeness of data

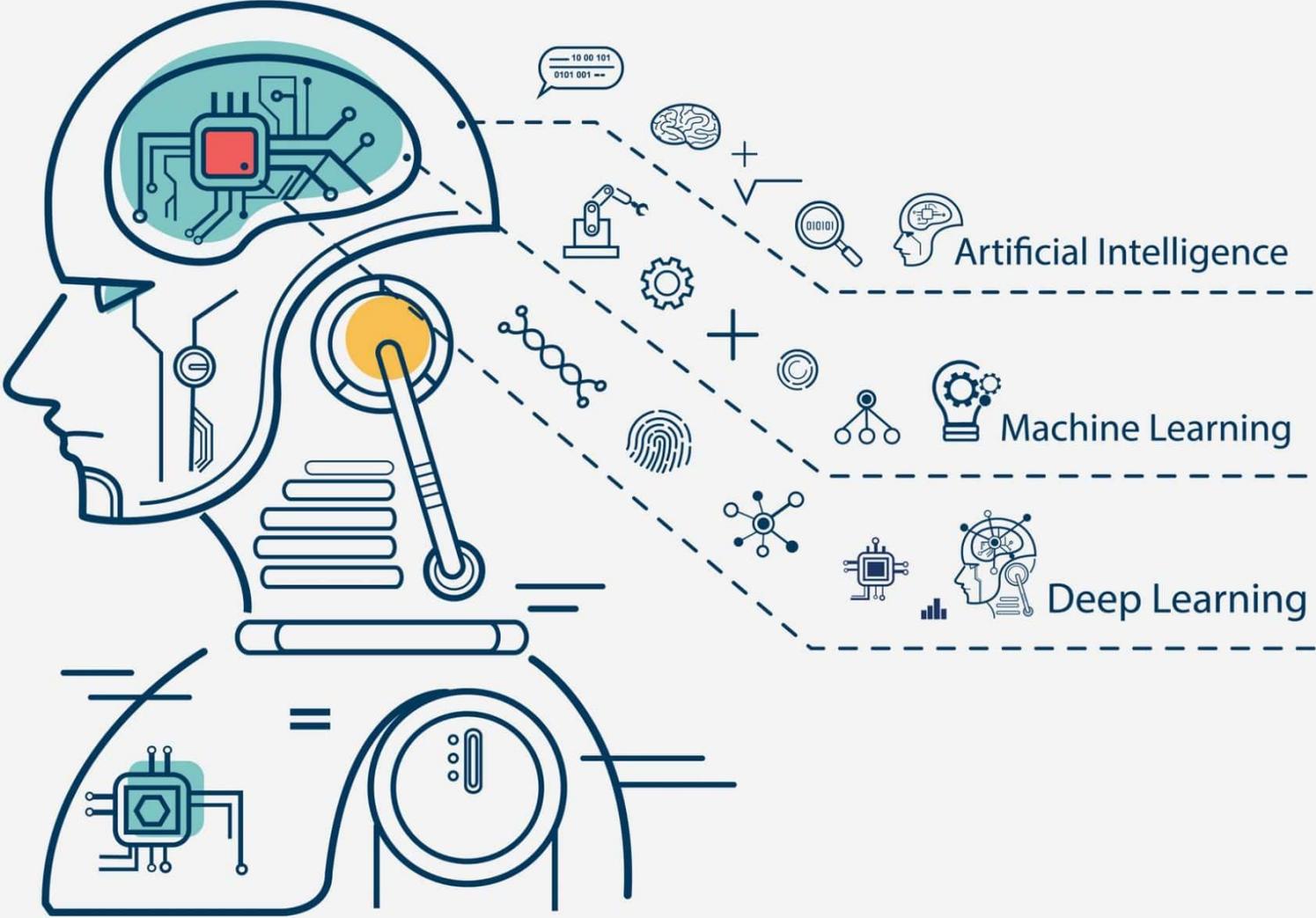
# SDMX & AI

Using **AI** in **SDMX** can help in:

- Transform the way of **data collection, processing, and analysis**
- Improve the **accuracy** and **efficiency** of data processing
- **Data cleaning** and **visualization**
- **Free up resources** for other important tasks
- Improve **forecasting accuracy**
- Making data **more engaging and understandable**



# Advanced Techniques used in SDMX

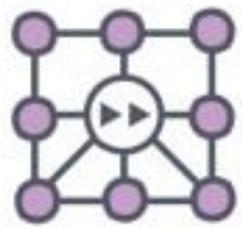
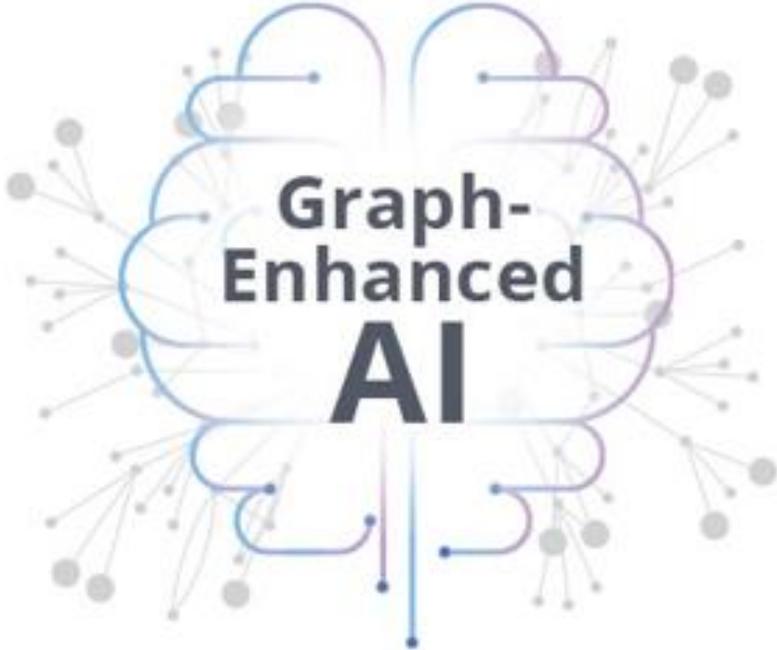
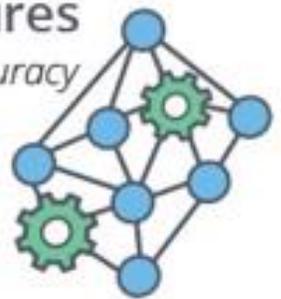


# AI graph enhancement for SDMX

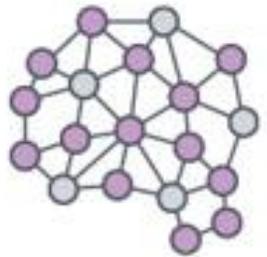


**Knowledge Graphs**  
*Context for Decisions*

**Connected Features**  
*Context for Accuracy*



**Graph Accelerated ML**  
*Context for Efficiency*



**Graph Native Learning**  
*Context for Explainability and Power*

# Knowledge Graph Benefits

Improved **data discovery** and **understanding**



Enhanced **data analysis** and **visualization**

Increased **data interoperability**



Improved **data quality**

# Examples of Successful Knowledge Graph Applications

The image shows a Google search result for the query "google". The search bar at the top contains the word "google" and a search button. Below the search bar, there are navigation tabs for "All", "Maps", "Images", "Videos", "News", "More", and "Search tools". The search results show "About 12,270,000,000 results (0.66 seconds)".

The main result is for "Google", with the URL <https://www.google.com.au/>. The description states: "Offers the choice of searching the whole web or web pages from Australia. Also advanced search, image and groups search, news and directory from the Open ...".

Below the main result, there are four related services:

- Google Maps**: Find local businesses, view maps and get driving directions in ...
- Google Images**: Google Images. The most comprehensive image search ...
- Google News**: Aggregated headlines and search engine for many news services ...
- Google AdWords**: Google AdWords lets you manage your campaign by yourself, or ...

More results from google.com.au »

**In the news**

- A new look for Google Play family of apps**  
Official Android Blog - 2 days ago  
Whether you like watching Despicable Me on Google Play Movies & TV, streaming "Sorry" ...
- Here's How Google Makes Sure It (Almost) Never Goes Down**  
WIRED - 8 hours ago
- Google To Donate IBM-Based Server Designs To Open Compute Foundation**  
Fortune - 2 hours ago

More news for google

The Knowledge Graph card for Google is highlighted with a red border. It contains the following information:

- Google** (Technology company)
- 
- Google is an American multinational technology company specializing in Internet-related services and products. These include online advertising technologies, search, cloud computing, and software. Wikipedia**
- CEO:** Sundar Pichai
- Founded:** September 4, 1998, Menlo Park, California, United States
- Headquarters:** Mountain View, California, United States
- Subsidiaries:** YouTube, ITA Software, AdMob, Google Japan, more
- Founders:** Larry Page, Sergey Brin
- Parent organization:** Alphabet Inc.
- Profiles:** Facebook, YouTube, Twitter, LinkedIn, Google+
- [Feedback](#)

# Examples of Successful Knowledge Graph Applications



- Main page
- Community portal
- Project chat
- Create a new Item
- Recent changes
- Random Item
- Query Service
- Nearby
- Help
- Donate

- Lexicographical data
- Create a new Lexeme
- Recent changes
- Random Lexeme

- Tools
- What links here
- Related changes
- Special pages

English Not logged in Talk Contributions Create account Log in

Item [Discussion](#)

Read [View history](#)

## University of Bahrain (Q1707779)

public university in the Kingdom of Bahrain  
Bahrain University | UoB | Ġāma'at al-Baḥrayn

edit

▼ In more languages

[Configure](#)

Language	Label	Description	Also known as
English	University of Bahrain	public university in the Kingdom of Bahrain	Bahrain University UoB Ġāma'at al-Baḥrayn
Arabic		جامعة البحرين	جامعه البحرين
Malayalam	No label defined	No description defined	

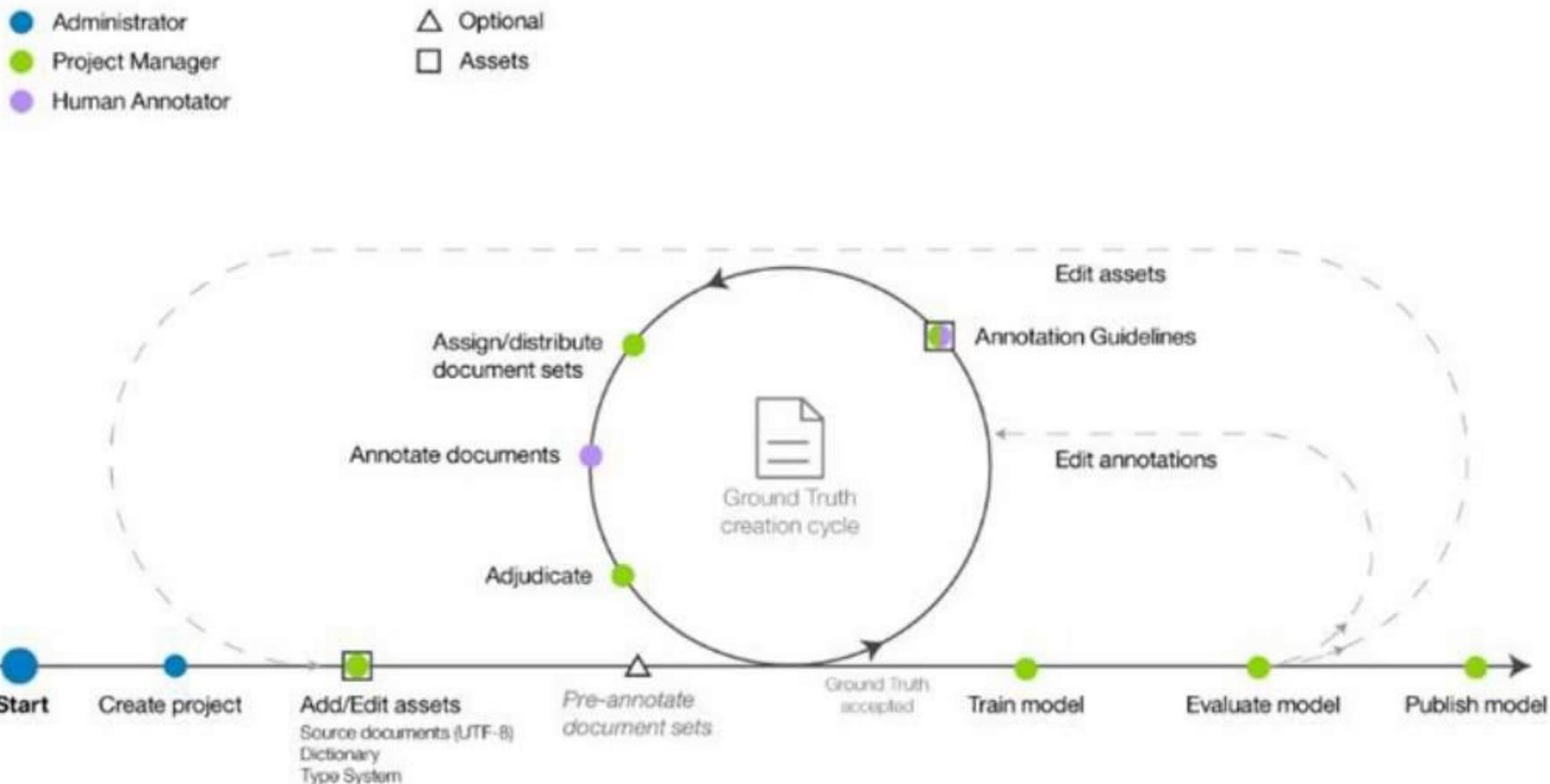
All entered languages

### Statements

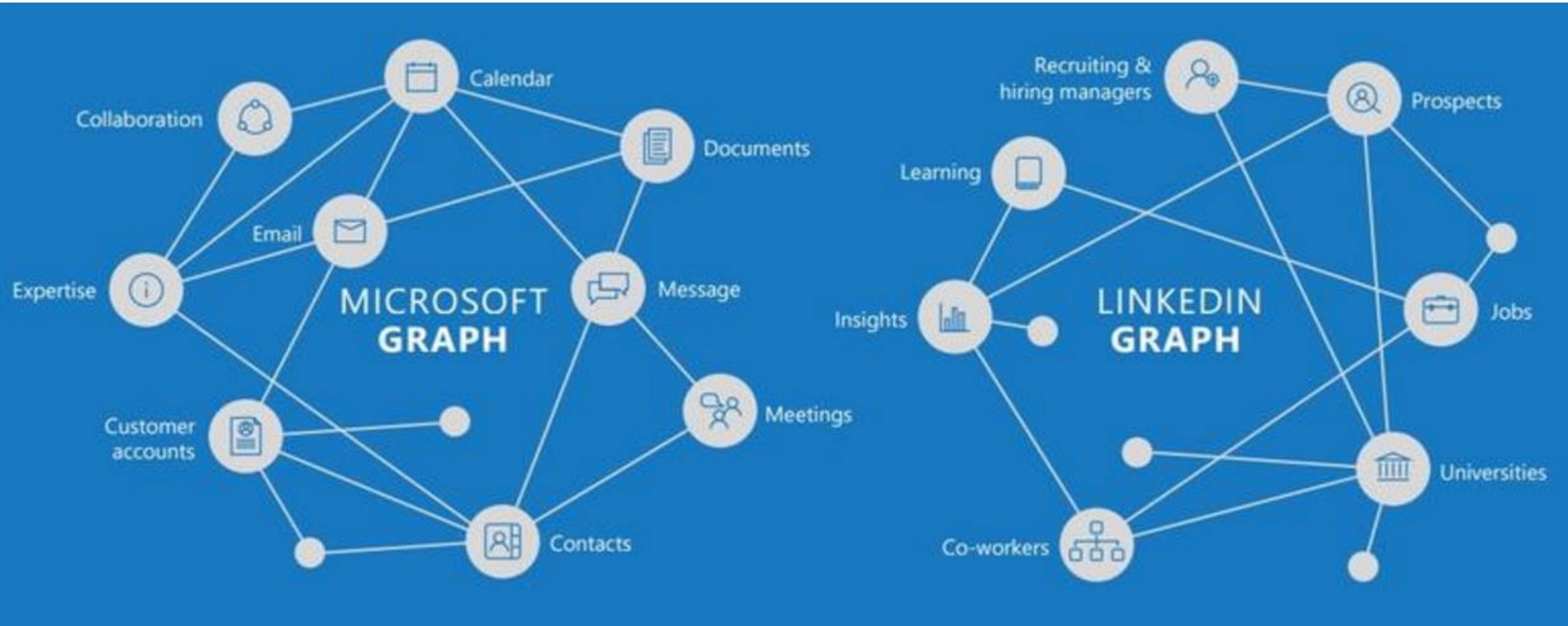
instance of	public university	edit
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# Examples of Successful Knowledge Graph Applications

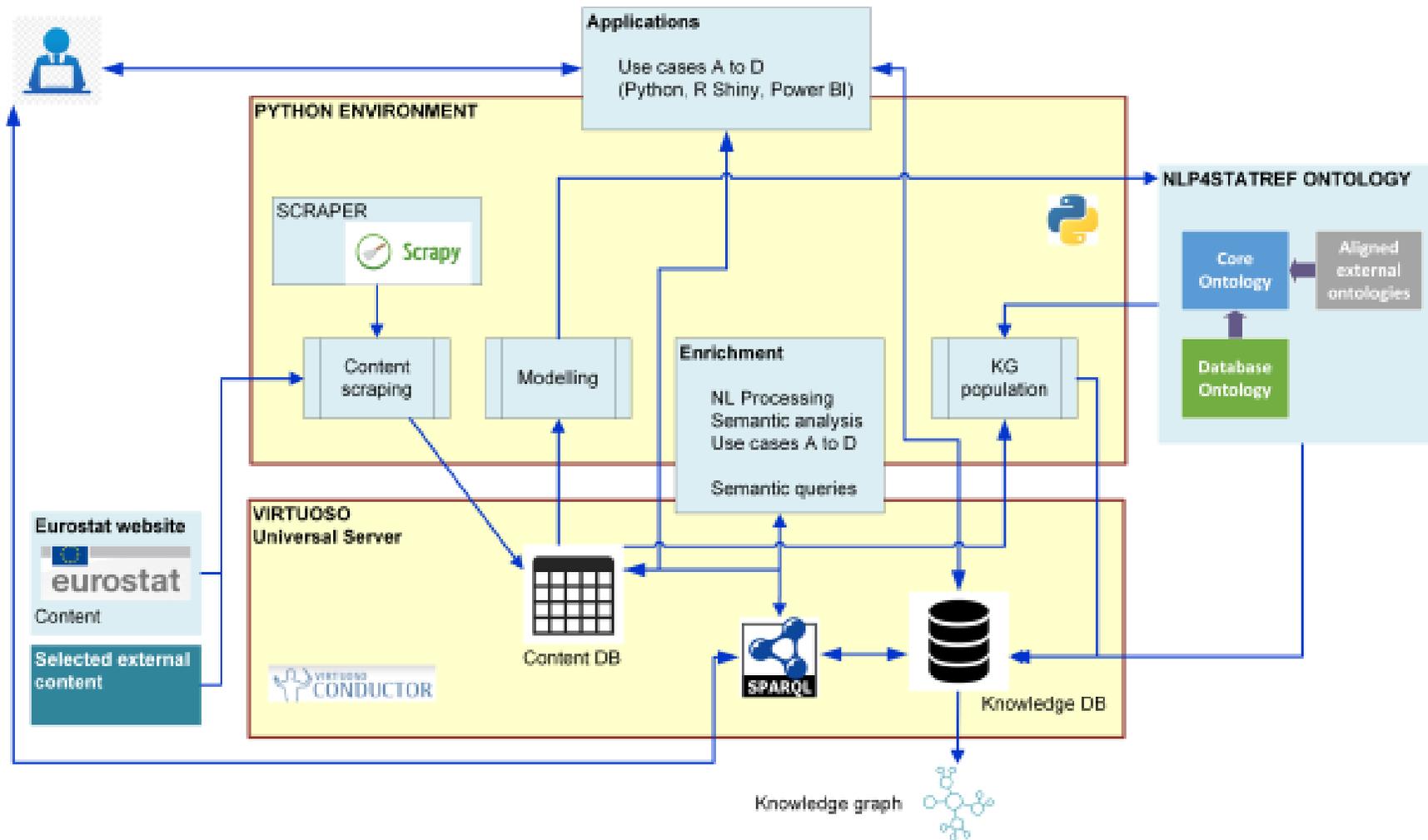
## Creating an Annotator – An Iterative & Multi-stage Process



# Examples of Successful Knowledge Graph Applications



# Building AI Eurostat Knowledge Graph





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**Thank you**

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