AI Advanced Analytics – Negative News Curator
Intelligent Risk and Incident Scanning (IRIS)

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Overview

Background
Finance significantly shapes our society, influencing businesses, job markets, and overall well-being. The interconnected nature of the global financial system means that changes in one aspect can have ripple effects, impacting various sectors and society at large. Therefore, maintaining the stability of the financial system is crucial.

The HKMA and banking industry need to:
- Monitor the latest financial developments
- Evaluate the financial ecosystem and spot potential threats
- React and proactively initiate actions

One of the informative data sources – Online News
- News publications offer extensive informative coverage of the financial sector.
  - Content is created by skilled journalists and market specialists.
    - Massive amount of news data are available.

Challenges
- Infobesity (information overload) • Labor-intensive tasks
- Time-consuming processes • Repetitive activities • Low efficiency

Goals
1. Develop an **AI negative news monitoring system**
2. Identify the **risk signals** in news
3. Reduce the time spent on manual research and analysis
4. Enable user to focus more on downstream supervisory action
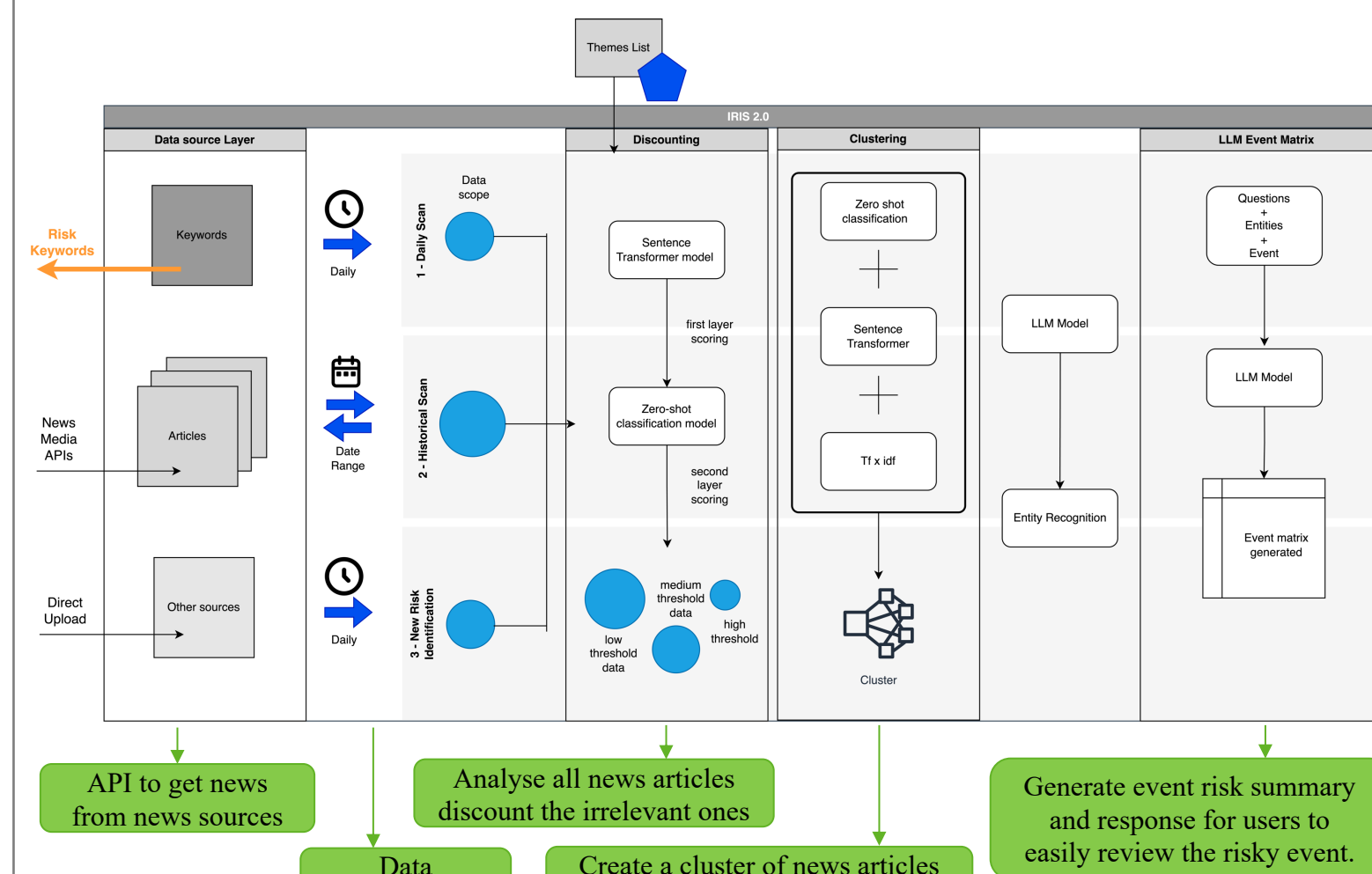
Objectives

1 **Create a Modular Architecture for Enhanced Adaptability and Scalability**
- Adapt to different domains

2 **Able to process huge amount of news articles in daily basis**
- Filter out irrelevant news
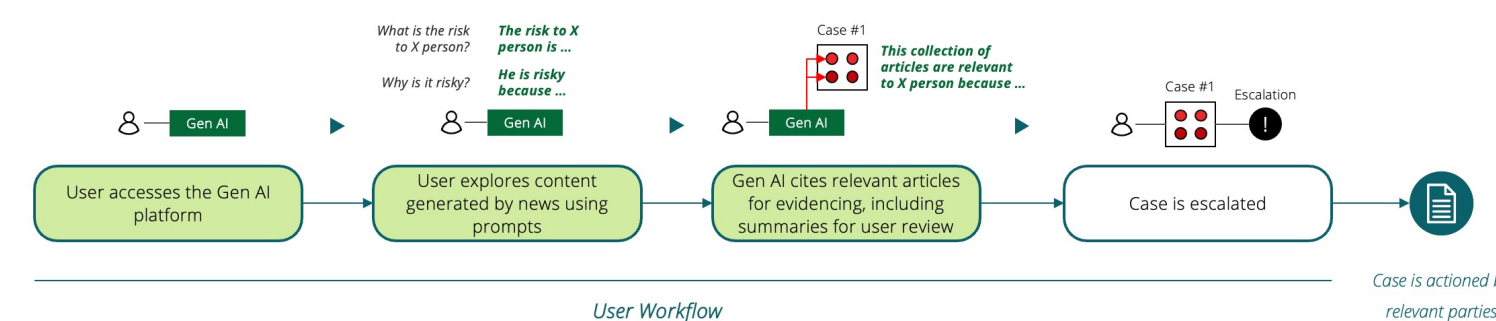- Analyze the news articles in balance with the time cost and accuracy

3 **Able to reduce the amount of content for users to review**
- Review in event-level instead of article-level
- Generate insightful information for users to easily review risky events

Design

Daily Curation Process

- API to get news from news sources
- Data pre-processing
- Analyse all news articles discount the irrelevant ones
- Create a cluster of news articles that are related to the same event
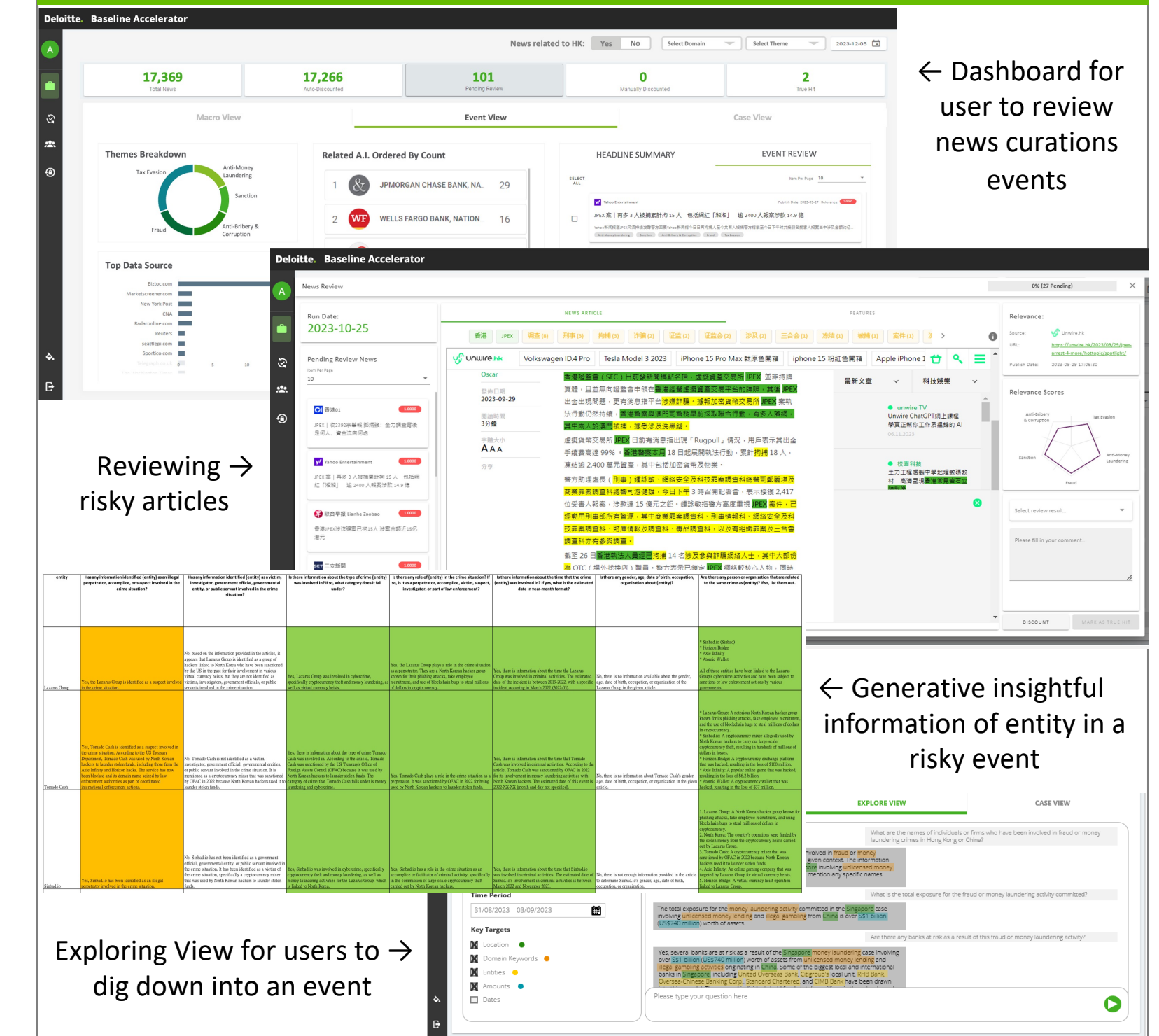- Generate event risk summary and response for users to easily review the risky event.

Generative AI User workflow

Technologies
Natural language processing(NLP) tool for Sentence Preprocessing: Spacy
Sentiment Model: distilbert-base-uncased-finetuned-sst-2-English
Sentence transformer model: sentence-transformers/all-mpnet-base-v2
zero-shot classification model: facebook/bart-large-mnli
Generative Large Language Model Framework: LangChain

Results

← Dashboard for user to review news curations events

Reviewing → risky articles

← Generative insightful information of entity in a risky event

Exploring View for users to → dig down into an event

Conclusion

In summary, our modular system ensures **adaptability and scalability** by allowing easy **customization for different themes and data sources**. It accommodates user-uploaded internal documents and supports independent improvements to components.

It efficiently processes **large volumes** of daily news articles using **state-of-the-art NLP and AI model**. The multi-layered discounting step **filters out irrelevant content**, and event clustering **reduces user reviews** by grouping related articles.

The event matrix facilitates users in directly **checking specific answers to questions**, thereby providing **easy access to insightful information** without reviewing much news.