Gen AI in sourcing

Syed Haroon

Agenda

Introduction

What is sourcing

Sap Ariba

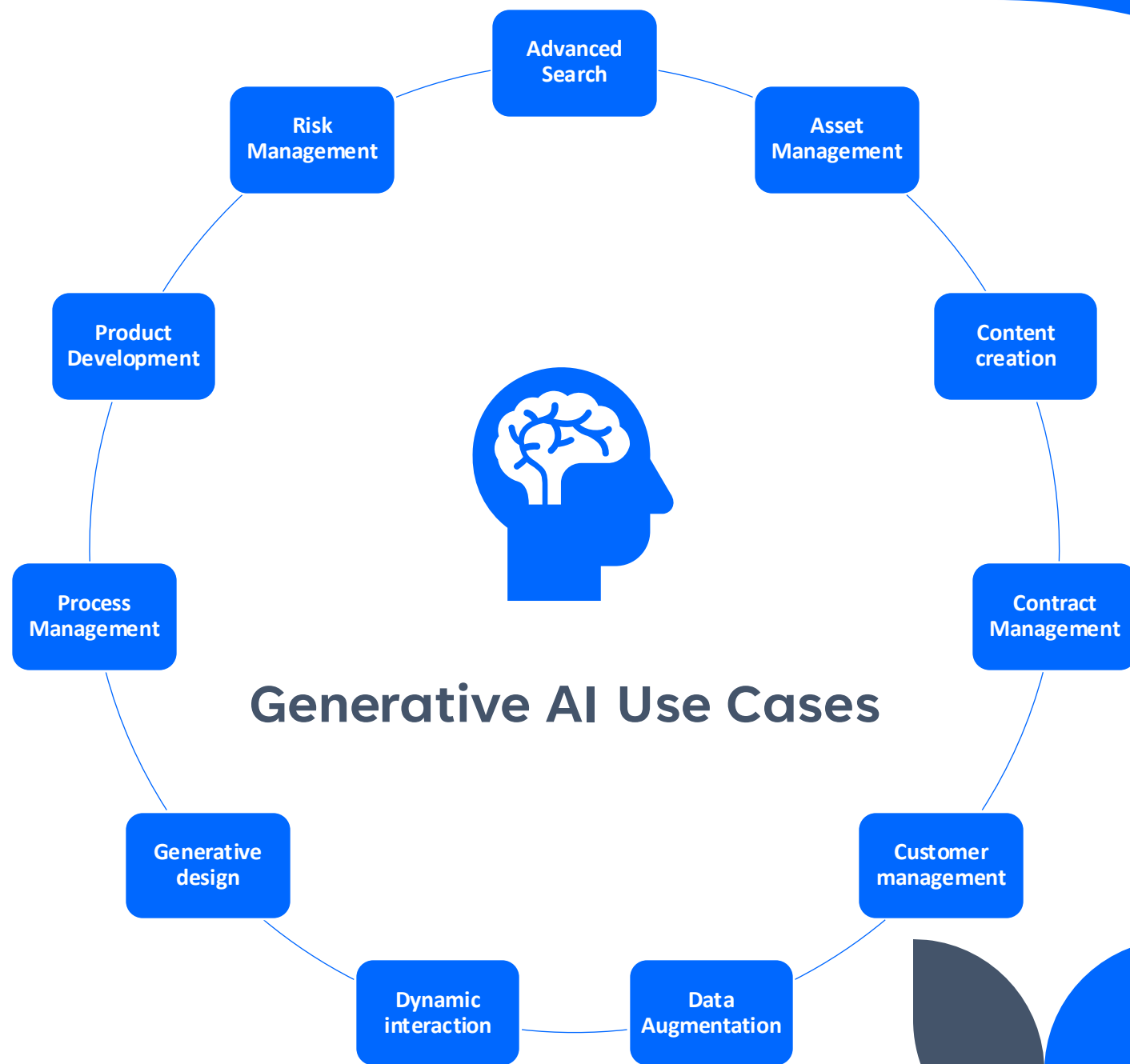Gen AI in sourcing

Implementation
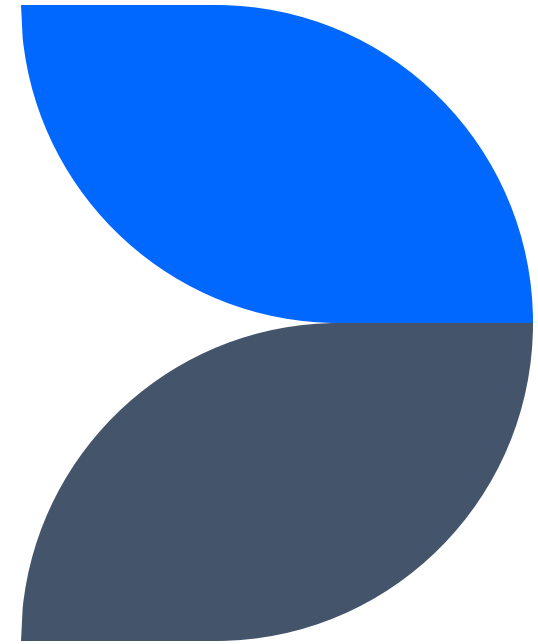
Limitations

Scoutbee

Conclusion

Introduction

Generative AI is proving to have a great impact in almost every field. Its capability to generate novel output and understand human language is something out of science fiction.

Advanced Search

Risk Management

Asset Management

Product Development

Content creation

Process Management

Contract Management

Generative AI Use Cases

Generative design

Customer management

Dynamic interaction

Data Augmentation

Sourcing

What is it

Sourcing

Sourcing is the process of identifying and assessing potential supplier that offers the best value. The process of understanding the procurement requirement of your company, searching for suppliers, negotiating prices, drafting contracts...etc fall into sourcing.

Procurement

Sourcing
Demand analysis market research, tendering, supplier evaluation, supplier selection, contract negotiation, supplier onboarding, supplier relationship management, supplier performance management
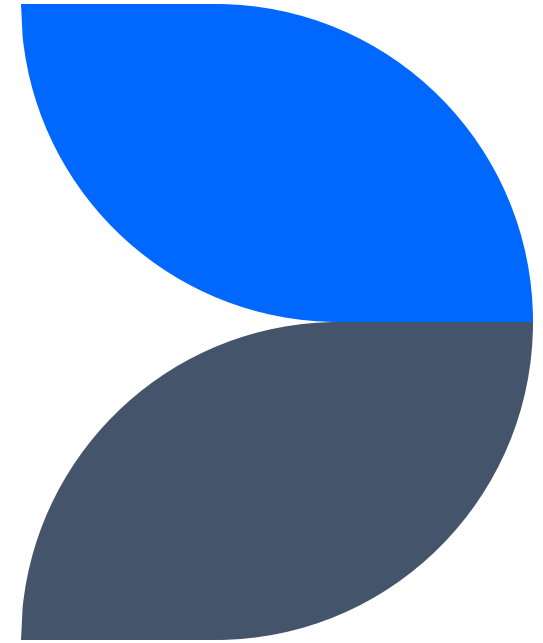
Purchasing
Placing purchase orders, handling operational tasks and supplier communication, audit order delivery and track GRNs, receive and authorize invoices, process payments.

Process of Sourcing

- Conduct Spend Analysis

- Identify potential suppliers

- Request more information from suppliers

- Gather details from suppliers

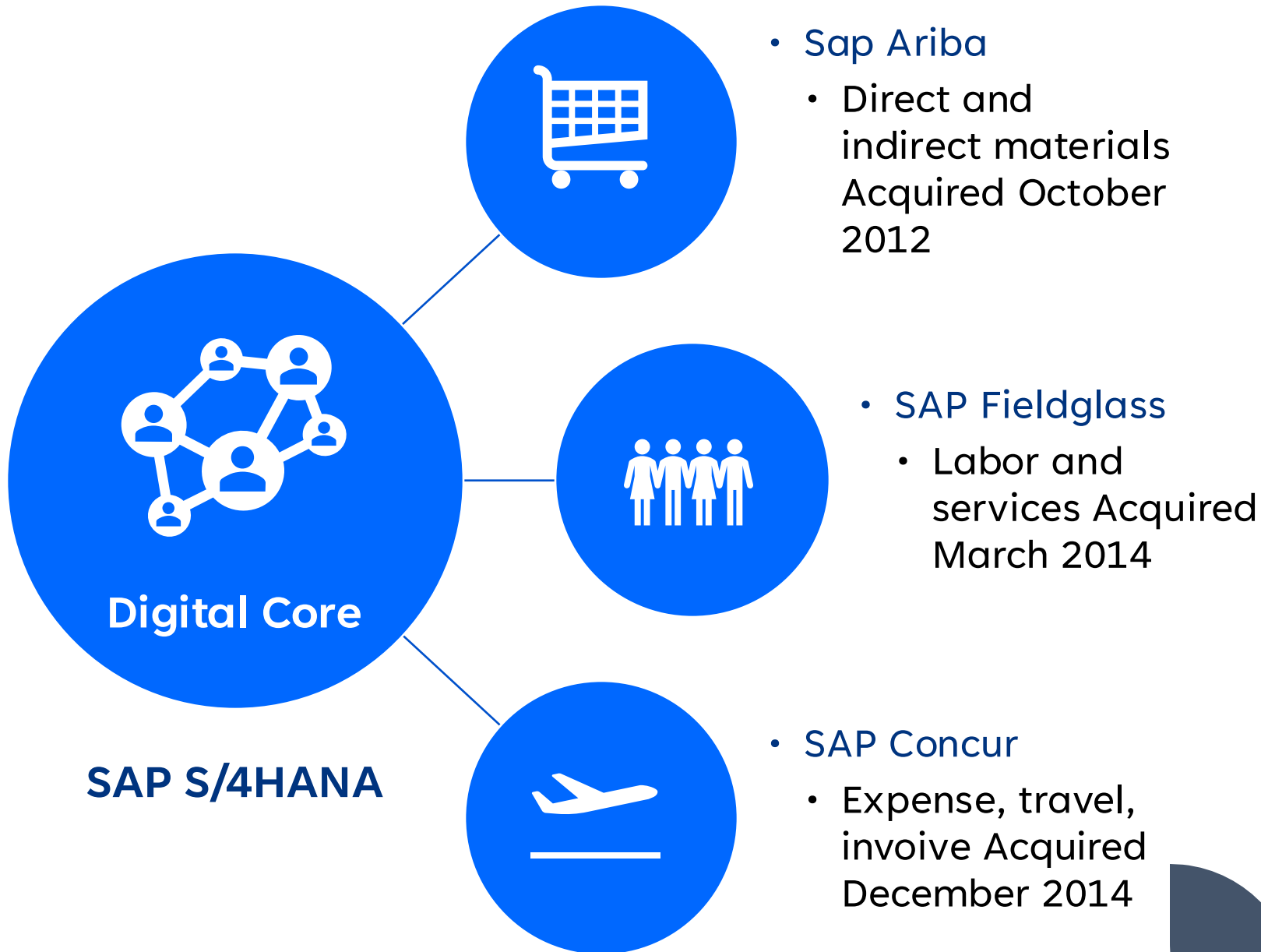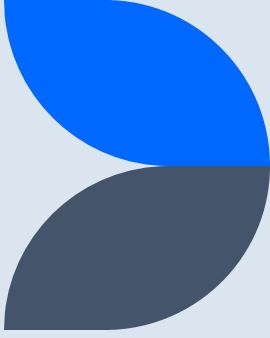- Supplier selection and signing contracts

8

SAP Ariba

SAP Ariba

- It was founded in 1966

- Uses internet in procurement process to enable businesses interact instantly

- B2B (Business to business)

- In 2012 it was acquired by SAP

- Only Cloud solution

Intelligence Spend Management

- Direct and Indirect Spend (SAP Ariba)

- Travel and Expenses (SAP Concur)

- Services and External labour (Sap fieldglass)

- Sap Ariba
  - Direct and indirect materials Acquired October 2012

- SAP Fieldglass
  - Labor and services Acquired March 2014

Digital Core

SAP S/4HANA

- SAP Concur
  - Expense, travel, invoive Acquired December 2014

Stages of Procurement process

```
┌──────────────┐      ┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│    Needs     │  →   │   Purchase   │  →   │  Review of   │  →   │    Budget    │
│ recognition  │      │ Requisition  │      │   request    │      │   Approval   │
└──────────────┘      └──────────────┘      └──────────────┘      └──────┬───────┘
                                                                         ↓
┌──────────────┐      ┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│   Three way  │  ←   │   Receive    │  ←   │ Negotiation  │  ←   │  Quotation   │
│   matching   │      │Goods/Services│      │ and Contract │      │  Requests    │
└──────┬───────┘      └──────────────┘      └──────────────┘      └──────────────┘
       ↓
┌──────────────┐      ┌──────────────┐
│   Invoice    │  →   │Record Keeping│
│   Approval   │      │              │
│   Payment    │      │              │
└──────────────┘      └──────────────┘
```

Procurement Process mapping

- Strategic sourcing (Upstream)
- Planning of spend
- Selection of vendor (Sourcing)
- Agreement/Legality (Contracts)
- Supplier Evaluation

- Procurement (Operational)
- Purchase requisition (PR)
- Purchase order (PO)
- Acknowledgement
- Invoice
- Receipt
- 2/3 way match
- Payment

Terms

1	**2**	**3**	**4**	**5**	**6**	**7**
Project	Templates	Events	RFI/ RFQ/ RFP	Contract	Catalog	PO/PR

SAP
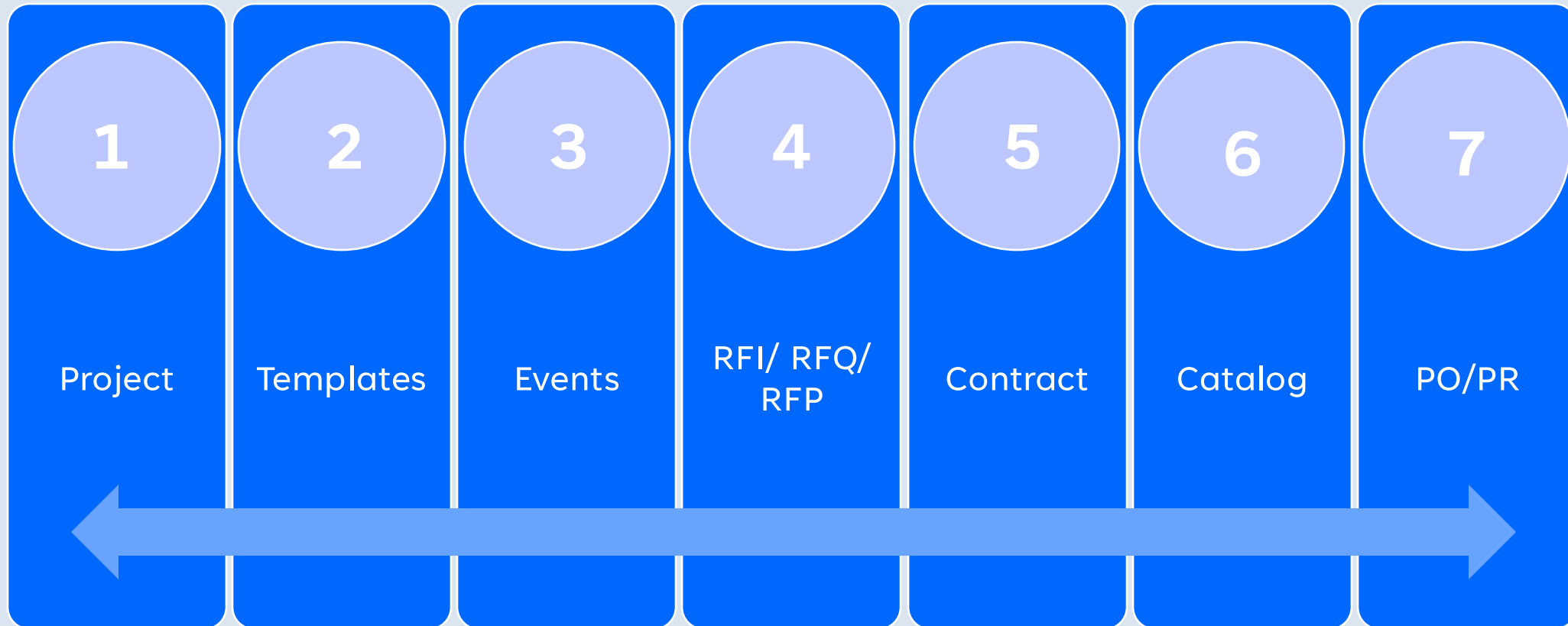
VISIBILITY   PROCUREMENT   INVOICING   CATALOG   MORE... ∨

| Requisition ∨ | Title | ID | ∨ | 🔍 |

Common Actions ∨

Create

test form_march 4

SM

test_7

test

More ∨

Manage

Forms and Extensions

Upload History

Approval Processes

More ∨

Recently Viewed ∨

IRPO124INV-0...O124INV-01-56

INVPO124INV-...O124INV-01-56

PO124 Test 04282012-03

PR595 Test 04282012-03

RC103 Test 04282012-03

Event Status ∨

6

☐ Draft

Commodity Analysis ∨

📄   Annual Inflation Cost Per Part By Commodity

📄   Annual Inflation Costs Per Supplier By Commodity

📄   Commodity Analysis

📄   Commodity Analysis on Enriched Supplier Parent

📄   Commodity Trend Analysis

📄   Off-Contract Spend By Commodity

Spend Overview Reports

📊   Commodity Overview Report

📁   MWOB Supplier Detail Reports

📊   Organization Overview Report

📊   Supplier Overview Report

Supplier Analysis

📄   Annual Inflation Cost By Supplier Per Part

📄   Annual Inflation Costs Per Supplier

VISIBILITY **PROCUREMENT** INVOICING CATALOG MORE... ⌄

| Purchase Order ⌄ | Title | Order ID ⌄ | 🔍 |

Common Actions ⌄

Create

Requisition

Sourcing Project

Contract Workspace (Procurement)

Analytical Report

More ⌄

Manage

Purchasing Workbench

Forms and Extensions

Upload History

More ⌄

Recently Viewed ⌄

IRPO124INV-0...O124INV-01-56

INVPO124INV-...O124INV-01-56

PO124 Test 04282012-03

PR595 Test 04282012-03

RC103 Test 04282012-03

My Requisitions ⌄

0 Denied

3

Total Submitted

My Receipts ⌄

0 Denied

2

Total Receipts

Pinned Items ⌄

📌 **1 New Pin**

1

Total Pins

To

News

Guided Buying

Procurement Desk

To Do

ID	Date ↓	From	Status	Title
PR580	4/17/2021	Puser1	📝 Submitted	test123
PO117	3/12/2021	Puser1	📇 Confirmed	Shipping and taxes
PO96	1/7/2020	Puser1	📇 Confirmed	ms windows pro

VISIBILITY   PROCUREMENT   **INVOICING**   CATALOG   MORE... ⌄

| Contract Workspace (Procurement) ⌄ | Search using Title, ID, or any other term | ⌄ | 🔍 |

Common Actions ⌄

Create

Credit Memo

Invoice

Requisition

Contract Request (Procurement)

More ⌄

Manage

Forms and Extensions

Upload History

Approval Processes

More ⌄

Recently Viewed ⌄

IRPO124INV-0...O124INV-01-56

INVPO124INV-...O124INV-01-56

PO124 Test 04282012-03

PR595 Test 04282012-03

To Do

Date ↓	Status	Title
3/12/2021	Paying	100 ($32.50 USD) (Direc
3/12/2021	Confirmed	Shipping and taxes (Pus
12/1/2020	Paying	xyz ($2,697.00 USD) (D
11/10/2020	Reconciling	PRCXML11100902-2 ($1
11/10/2020	Reconciling	PRCXML11100902-1 ($1
11/10/2020	Reconciling	PRCXML11100902 ($10
2/26/2020	Paying	INV_Fax_Manual ($69.0
1/7/2020	Confirmed	ms windows pro (Puser1
1/7/2020	Confirmed	MS windows (Puser1)
1/7/2020	Confirmed	Item (Puser1)

My Documents

SAP **Ariba Network** ▾ Enterprise Account **TEST MODE** ← **Back to classic view** ? DS

Home | Workbench | Orders ▾ | Fulfillment ▾ | Invoices ▾ | Payments ▾ | Catalogs | Reports ▾ | Messages **Create** ▾ ⋯

Contracts

Purchase Orders | ▾ | All customers ▾ | Exact match ▾ | Order number | 🔍

Order Inquiries

Overview | Getting started

5	0	6	0	6	⋯ ①
New orders	Changed orders	Orders to invoice	Rejected invoices	Orders	More
Last 31 days	Last 31 days	Last 31 days	Last 31 days	Last 31 days	

My widgets | All customers ▾ | ⚙ Customize

Purchase orders	Last 3 months ▾	Invoice aging	Company profile	My leads

$820 USD | **$82.5** USD | 35%

$800 | $50
$700 | $40
$600

Apps

Delivery Date:

Add to Header ▾

Line Items

1 Line Items, 1 Included, 0 Previously Fully Invoiced

Insert Line Item Options

☐ Tax Category: [▾]   ☐ Shipping Documents   ☐ Special Handling   ☐ Discount   [Add to Included Lines]

	No.	Include	Type	Part #	Description	Customer Part #	Quantity	Unit	Unit Price	Subtotal
☐	1	☑	MATERIAL	Not Available	Testing prices		5	EA	$10.00 USD	$150.00 USD

↳ [Line Item Actions ▾] [Delete]

Turn on Error Dump ⓘ
Hide/Show XML

[Update]   [Save]   [Exit]   [**Next**]

Gen AI in sourcing

What is Gen AI and how can it help in sourcing

What is Gen AI

- Generate new content, often mimicking existing data

- Based on deep learning models like Variational Autoencoders (VAE), Generative Adversarial network (GANs), Transformer based models.

- Used for:
  - Image synthesis
  - Audio generation
  - Text generation

Artificial Intelligence

Machine learning

Neural Network

Deep neural network

Generative AI
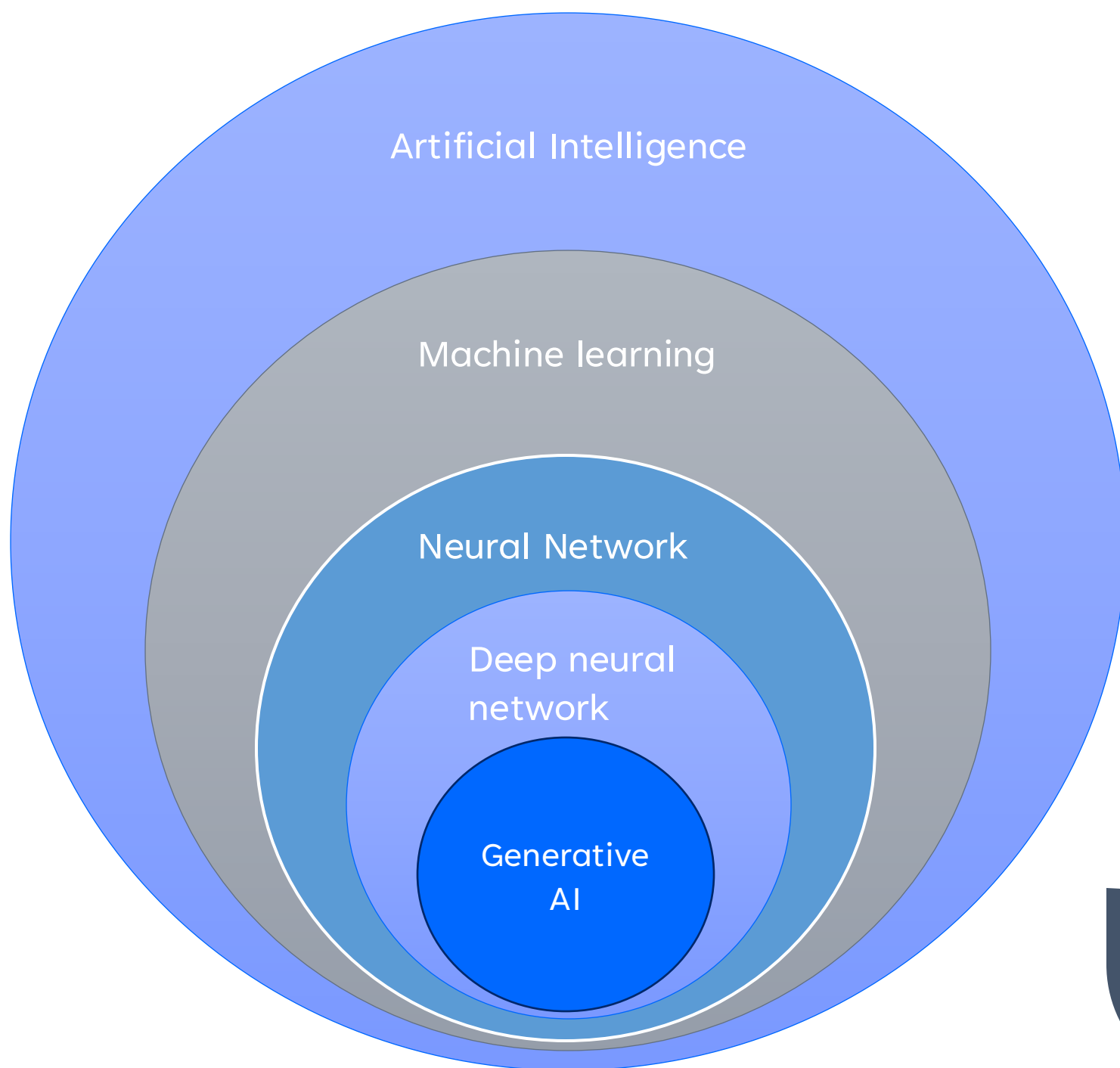
Sap and Gen AI
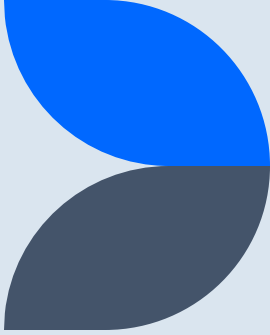
Transportation Management

SAP SuccessFactors

SAP Business Process Transformation

Joule Copilot

SAP Analytics Cloud

SAP Ariba Sourcing

Gen AI and sourcing

- Crunching large sets of data to process scenario-based results—reducing complex manual processes and interventions.

- Leveraging complex automation to increase efficiencies.

- Generating actionable insights based on historic trends, demand profiles, and supplier performance.

- Combining internal data with external data to craft better negotiation strategies.

Gen AI use case: RFP Response Evaluation

Create an rfp event

Summarization

Develop scoring framework

Provide input for evaluation criteria

Query to identify context

Assign scores to the vendor response

Lauch event

Detect significance lines and paragraph

Evaluate vendor scores

Select relevant information

Upload response/ fetch using integration

Generate automated reports
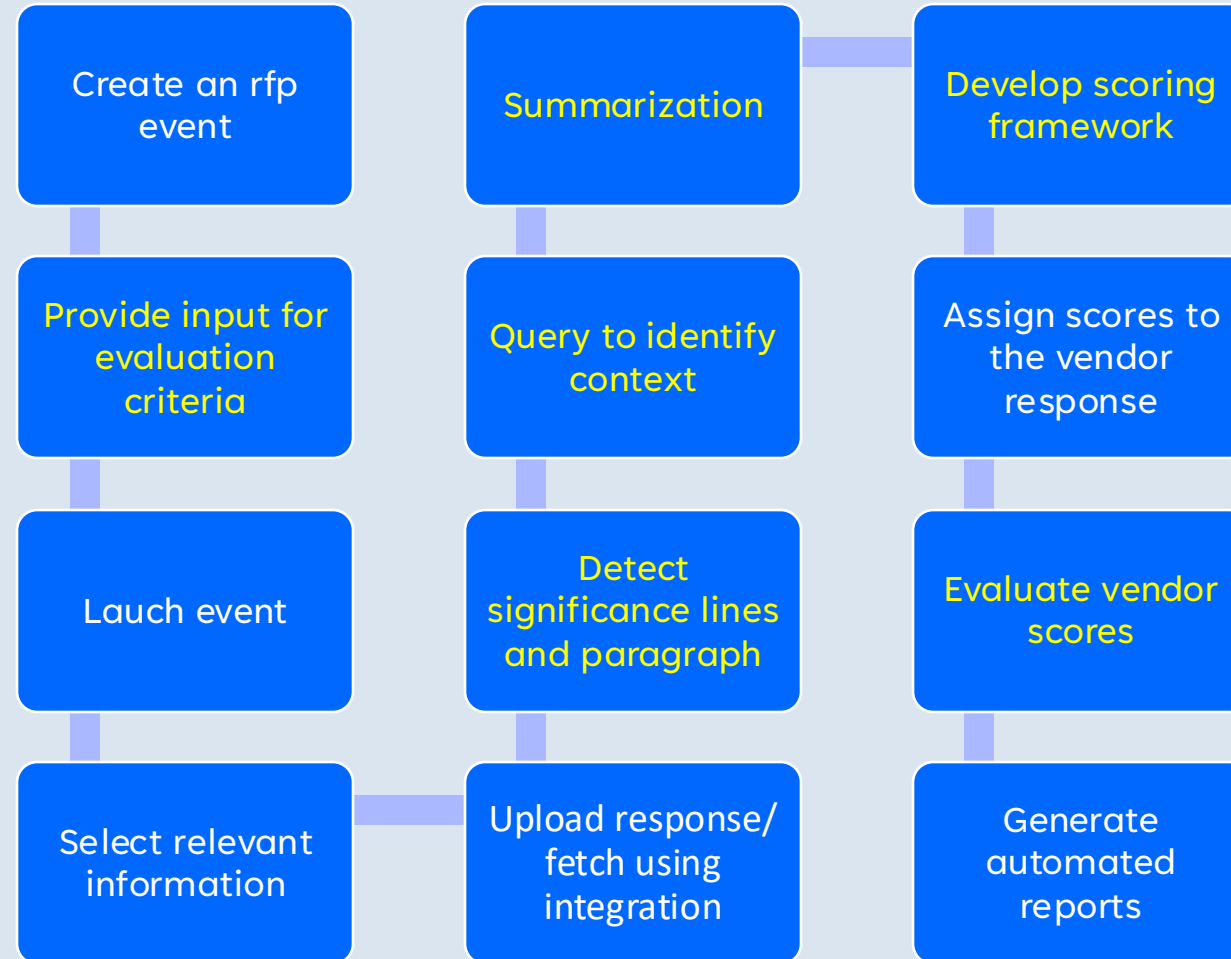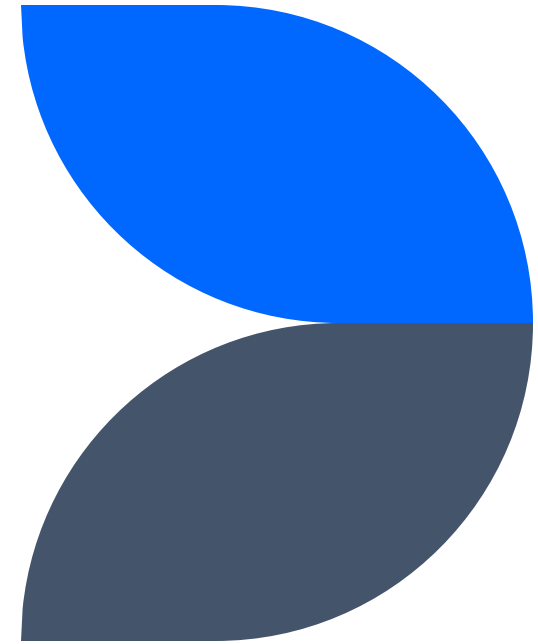
Implementation

Implementation

In order to implement LLM into SAP workflow we can make use of two techniques

- Fine tuning

- Retrieval augmented generation

Implementation

Fine Tuning

- Need to train the LLM to perform different task

- Expensive to collect training data and train model

- Pro data science skills to optimize objective function

RAG

- Adapt the model to a new domain

- Constrain the model to existing knowledge base

- Cost efficient as compared to fine tuning

- Low code skills compared to Fine tuning
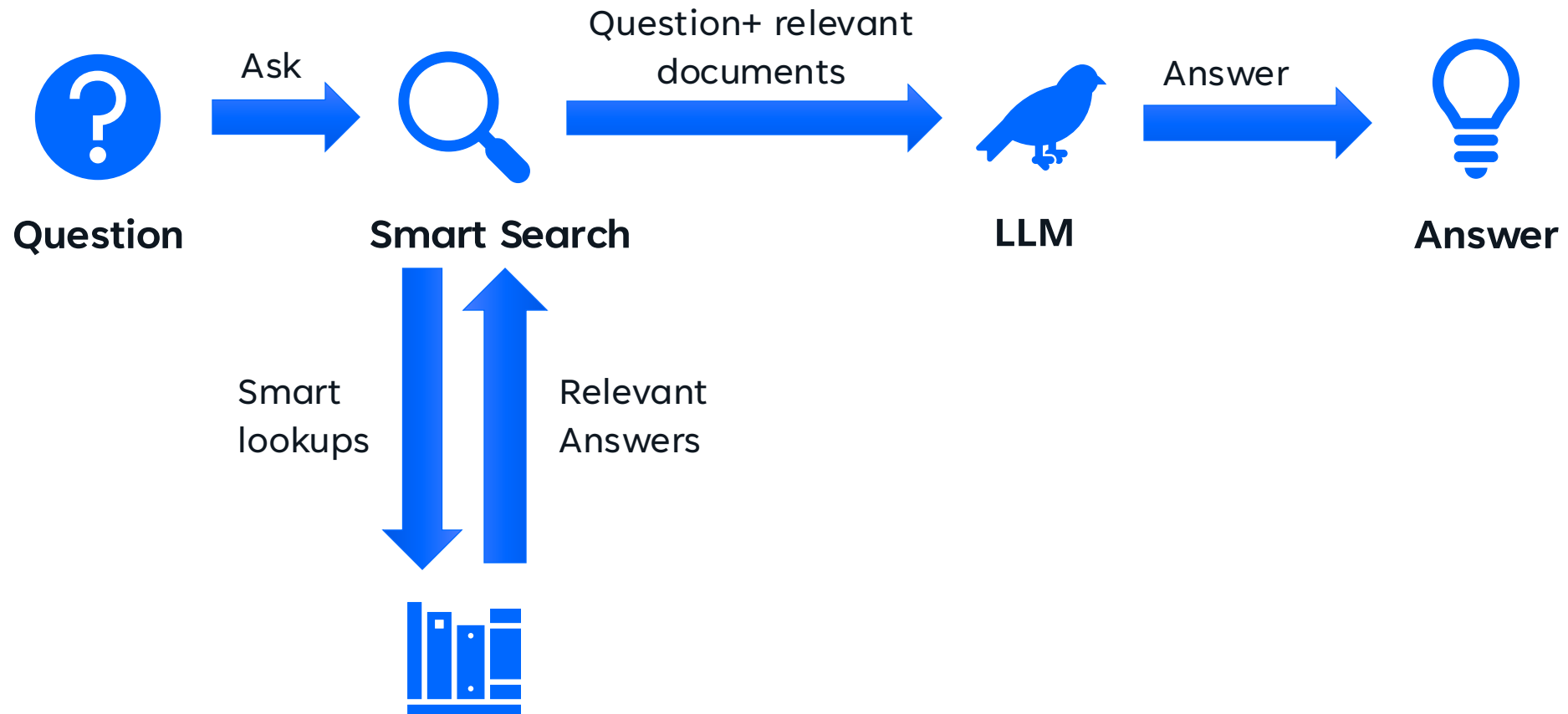
Retrieval Augmented Generation (RAG)

Vector Database

- Store data in vector format

- Uses deep learning models

- Each item embedded as a vector in a high dimensional space

- Identify items similar to a given query

- Recommendation system

Limitations
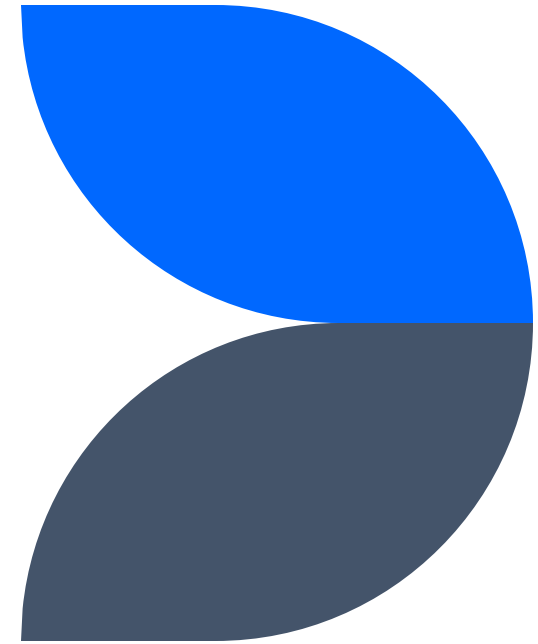
Limitations

- Requires large amount of data for effective training

- Demands resources

- Often operates as a "black box" with a limited transparency

- Representing diverse relationships and intricate interconnections between documents is difficult

Scoutbee
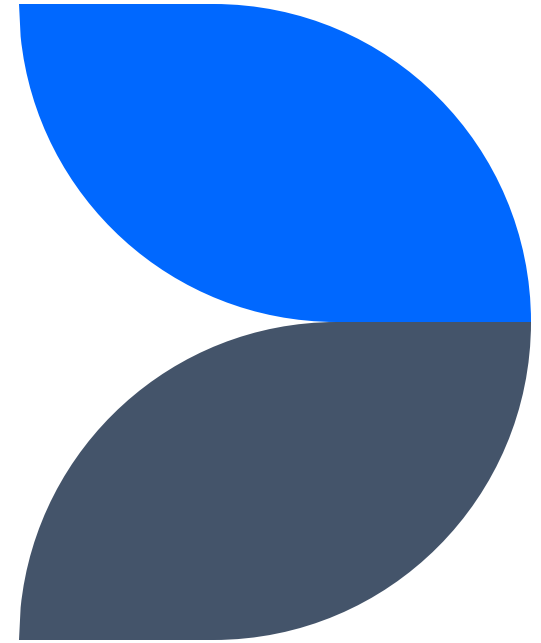
Search
AI identifies upto 180 times more supplier, 75% faster

Discover
Gain deep holistic supplier insights from millions of verified data points

Analyze
360 view of your supply base to diversify and strengthen supply networks

Automate
Valuable strategic supplier management - automated, centralized, optimized.

Scoutbee

- Scoutbee extends partnership with SAP, plans to integrate AI powered supplier discovery with SAP Ariba sourcing solutions

- During sourcing events companies can import supplier from scoutbee

- Supplier can be directly integrated into the sourcing event without navigating away from the event screen

- For graph technologies scoutbee uses Neo4j

The Scoutbee Intelligence Platform

An AI-powered Supplier Intelligence and Discovery Solution

Set the foundation for your own supply AI

Know you are working with the right suppliers

Build your supplier data foundation to deal with uncertainties, rapidly adjust to business changes, and respond to disruption via one intuitive platform that enables you to leverage your supplier data as a competitive advantage while easily identifying new suppliers as required.

Visibility

On existing suppliers in your supply base, their capabilities and charac-teristics (e.g., spend, risk, ESG), as well as on new suppliers from global supplier markets to fill the gaps in your supply base.

Confidence

In the information you base your decisions on by contextualizing your fragmented, internal supplier data and enriching it via external sources (market intelligence data, 3rd-party data).

Speed

By applying AI-powered automation to eliminate the manual effort of collecting and visualizing data from multiple dis-parate technology solutions, freeing up time for strategic tasks.

Use the **Scoutbee Intelligence Platform** to view supplier information in supplier profiles, add new suppliers to your supply base, compare them on relevant data points, and assess your supply base using cutting-edge AI technology.

How it works

• We aggregate your fragmented internal data from different technology platforms, ERPs, and data sources into one data foundation.

• Using graph technology, relationships between data sets are established, taking the tedious work of matching data with supplier records off your plate.

• This data foundation is then enriched with supplier data from the internet and 3rd-party data providers.

• When you want to add new suppliers to your data foundation, our AI-powered algorithm crawls the internet for relevant suppliers based on your needs.

"Unilever has around 20 legacy systems that don't speak to each other. Scoutbee then becomes the center point of storing all that supplier data and visualizing it all in one place, in a visually appealing central format, and then adding their data to it."

Maggie Brommer, Unilever

"Siemens is now successfully using Scout-bee, from the short-term identification of a second source to the strategic screening of specific procurement markets, or the selection of R&D partners and start-ups for innovation projects."

Michael Klinger, Supply Chain Management, Siemens

Learn how to utilize the
Scoutbee Intelligence Platform

Schedule a call today!

The Scoutbee Intelligence Platform

An AI-powered Supplier Intelligence and Discovery Solution

Set the foundation for your own supply AI

Know you are working with the right suppliers

Build your supplier data foundation to deal with uncertainties, rapidly adjust to business changes, and respond to disruption via one intuitive platform that enables you to leverage your supplier data as a competitive advantage while easily identifying new suppliers as required.

Visibility

On existing suppliers in your supply base, their capabilities and characteristics (e.g., spend, risk, ESG), as well as on new suppliers from global supplier markets to fill the gaps in your supply base.

Confidence

In the information you base your decisions on by contextualizing your fragmented, internal supplier data and enriching it via external sources (market intelligence data, 3rd-party data).
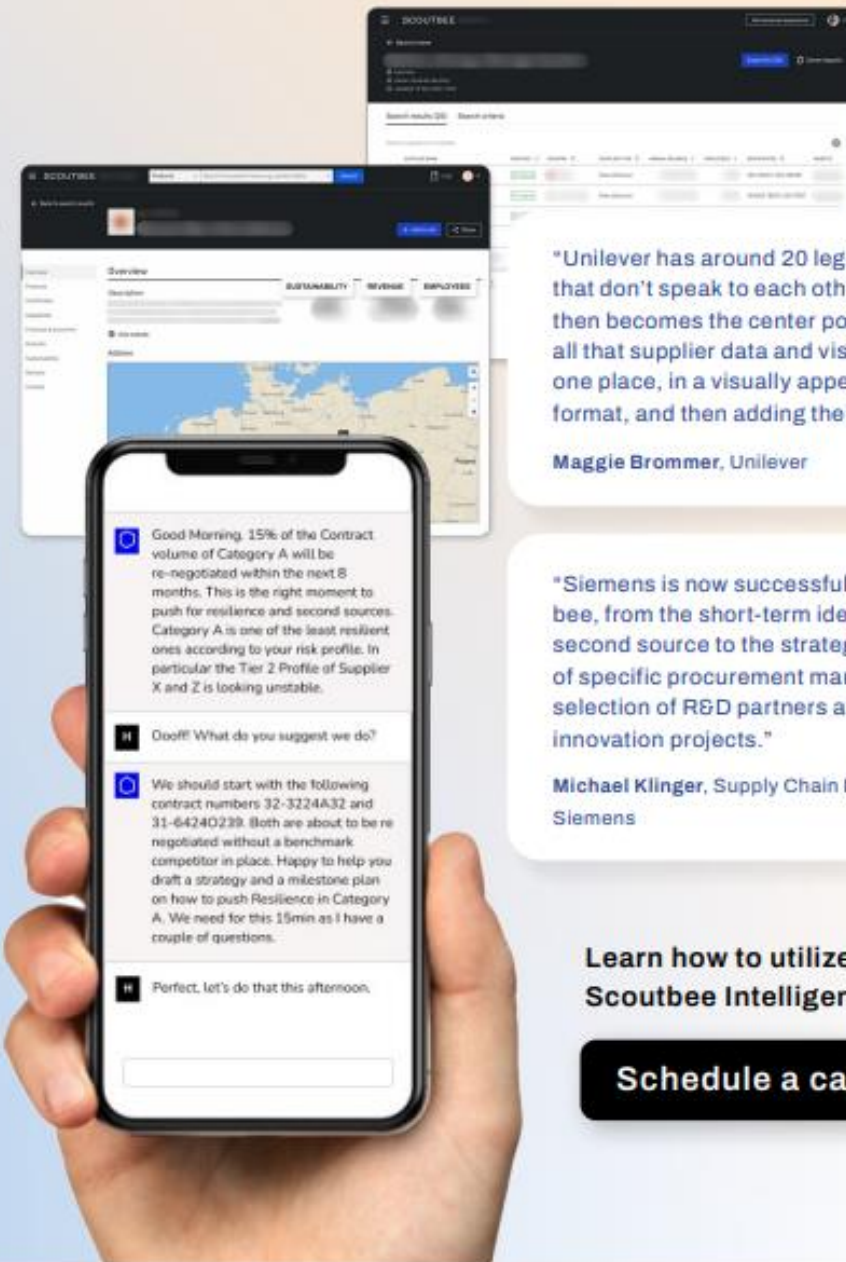
Speed

By applying AI-powered automation to eliminate the manual effort of collecting and visualizing data from multiple disparate technology solutions, freeing up time for strategic tasks.

Use the **Scoutbee Intelligence Platform** to view supplier information in supplier profiles, add new suppliers to your supply base, compare them on relevant data points, and assess your supply base using cutting-edge AI technology.

How it works

• We aggregate your fragmented internal data from different technology platforms, ERPs, and data sources into one data foundation.

• Using graph technology, relationships between data sets are established, taking the tedious work of matching data with supplier records off your plate.

• This data foundation is then enriched with supplier data from the internet and 3rd-party data providers.

• When you want to add new suppliers to your data foundation, our AI-powered algorithm crawls the internet for relevant suppliers based on your needs.

"Unilever has around 20 legacy systems that don't speak to each other. Scoutbee then becomes the center point of storing all that supplier data and visualizing it all in one place, in a visually appealing central format, and then adding their data to it."

Maggie Brommer, Unilever

"Siemens is now successfully using Scoutbee, from the short-term identification of a second source to the strategic screening of specific procurement markets, or the selection of R&D partners and start-ups for innovation projects."

**Michael Klinger**, Supply Chain Management, Siemens

Learn how to utilize the Scoutbee Intelligence Platform

Schedule a call today!

Knowledge Graph

- Identifying distinct entities and map their relationships within a dataset

- Have a semantic understanding, can understand meaning and context of entities and relationships often leveraging ml and nlp

- Organizing and storing data in a structured manner

- Used in search engines, recommendation systems etc.
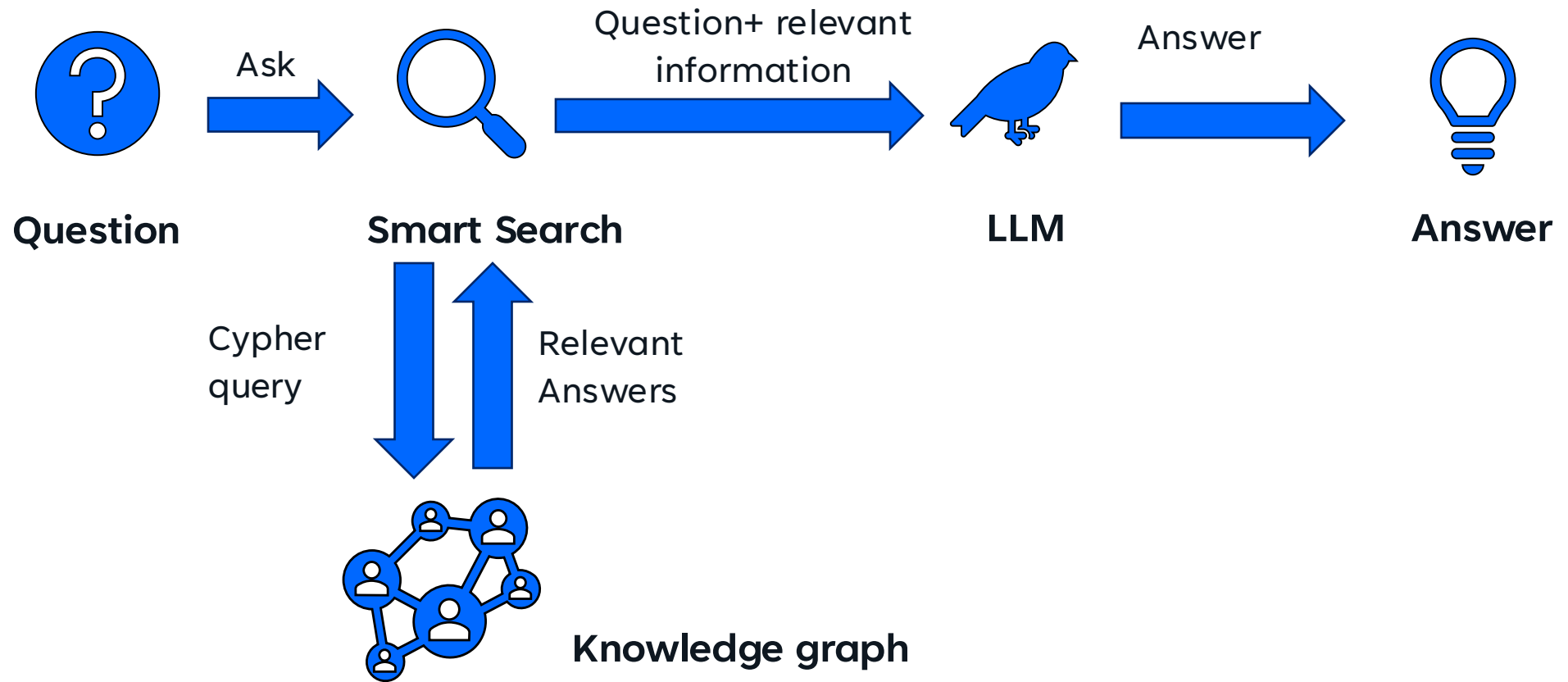
RAG using KG

LLMs vs KGs

Cons:

- Implicit Knowledge
- Hallucinations
- Indecisiveness
- Black Box
- Lacking domain specific knowledge

Pros:

- General Knowledge
- Language processing
- Generalizability

Pros:

- Structural knowledge
- Accuracy
- Decisiveness
- Interpretability
- Domain specific knowledge
- Evolving knowledge

Cons:

- Incompleteness
- Lacking language
- Understanding
- Unseen facts

Question: Where is a business restaurant likely to be located?
A. Town
B. At hotel
C. Mall
D. Business sector
E. Yellow pages

Input → LLMs → Reasoning Process → B. at hotel

I don't have enough information and knowledge to answer your question accurately

Question: Where is a business restaurant likely to be located?
A. Town
B. At hotel
C. Mall
D. Business sector
E. Yellow pages

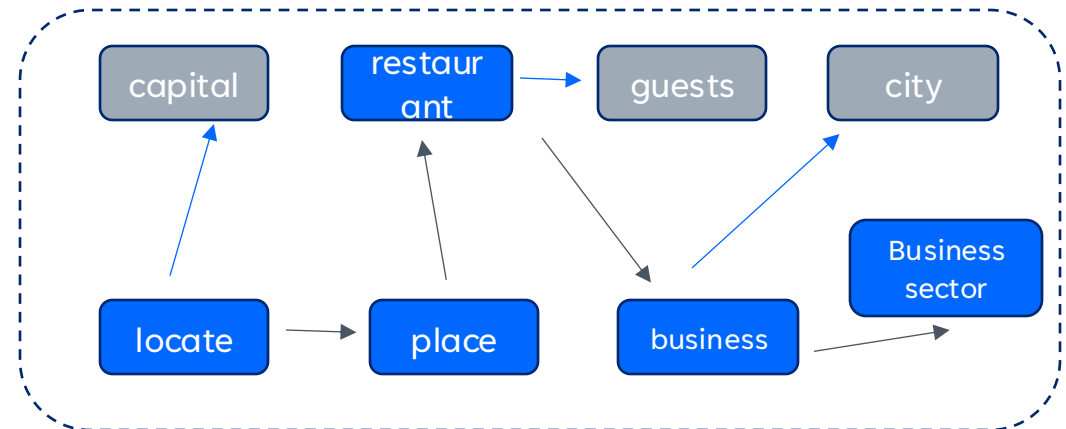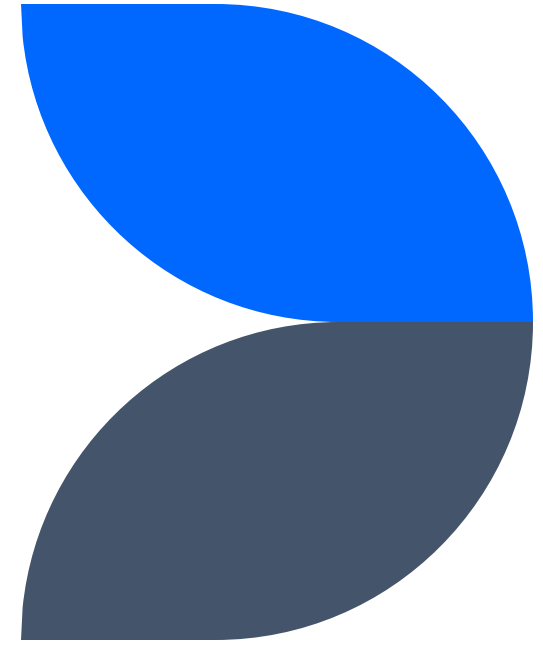Input → LLMs / KGs → Reasoning Process → D. business sector

Interactive knowledge search

capital restaurant → guests city

locate → place business → Business sector

44

Conclusion

Conclusion

- Gen Ai is a promising field

- What is Ariba and sourcing in procurement process

- Potential use of Gen AI in sourcing

- RAG implementation

- Limitation

- Scoutbee integration with SAP Ariba

- Leveraging knowledge graph