



Power of Future of Your Business with Generative AI

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SAPinsider

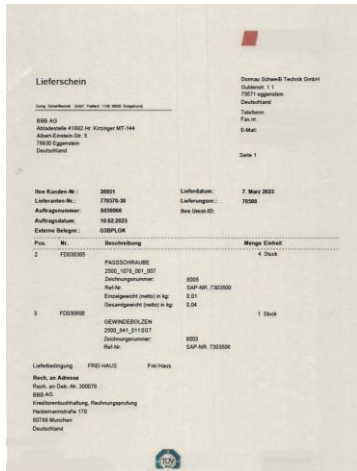
Generative AI consumption and tuning patterns over time



Prompt existing models

Prompt engineering of existing large language models (LLMs)

Original input image



Text with preserved 2D structure

Lieferschein		Donnan-Schweiß Technik GmbH	
Düring Schweißtechnik GmbH Postfach 1188 86329 Königsbrunn		Guldenstr. 11 75671 Eggenstein Deutschland Telefon: Fax: E-Mail:	
888 AG Abt. 41892 Hr. Kirzinger MT-144 Albert-Einstein-Str. 5 76838 Eggenstein Deutschland		Seite 1	
Ihre Kunden-Nr.:	38951	Lieferdatum:	7. März 2023
Lieferanten-Nr.:	770570-30	Lieferungs-Nr.:	70586
Auftragsnummer:	5030066	Ihre Ust-ID:	
Auftragsdatum:	10.02.2023		
Externe Beleg-Nr.:	G5BPLGK		
Pos. Nr.	Beschreibung		
2	FD03035		Menge Einheit
	PASSSCHRAUBE 2500 1078 001 007 Zeichnungsnummer: Ref-Nr. Einzelgewicht (netto) in kg: Gesamtgewicht (netto) in kg:	8885 SAP-Nr. 7303500 0,01 0,04	4 Stück
3	FD03050		1 Stück
	GEWINDEBOLZEN 2500 041 011007 Zeichnungsnummer: Ref-Nr.	8883 SAP-Nr. 7303506	
Lieferbedingung: FREI HAUS Frei Haus			
Rech. an Adresse Rech. an Deb.-Nr. 388070 888 AG Kreditorenbuchhaltung, Rechnungsprüfung Helmuthstraße 170 80788 München Deutschland			
TUV SÜD			

Structured result

```
{
  "DeliveryNoteNo": "70500",
  "DocumentDate": "2023-03-07",
  "PurchaseDoc": "G5BPLGK",
  "SupplierID": "770570-30",
  "Items": [
    {
      "ItemNo": "2",
      "ProductId": "7303500",
      "Quantity": "4",
      "UnitOfMeasure": "Stück"
    },
    {
      "ItemNo": "3",
      "ProductId": "7303506",
      "Quantity": "1",
      "UnitOfMeasure": "Stück"
    }
  ]
}
```

Extract as JSON:

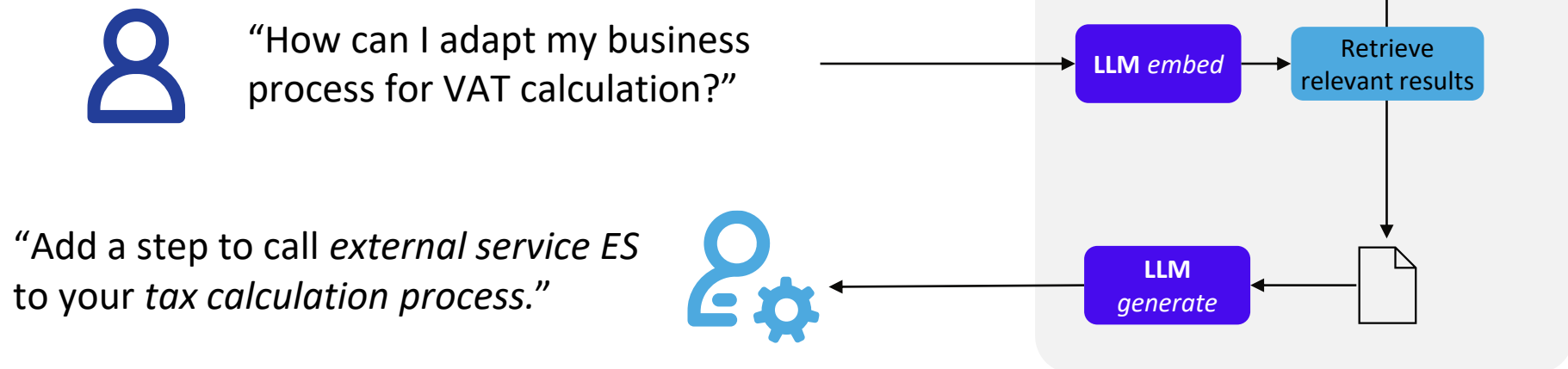
- **DeliveryNoteNo**: ID for the delivery note
- **DocumentDate**: Date of the document
- **PurchaseDoc**: Reference to purchase doc
- **SupplierID**: Supplier's unique ID
- **Items**: List of products
 - **ItemNo**: Number for the item in the list.
 - **ProductID**: ID for the product
 - **Quantity**: Amount of product
 - **UnitOfMeasure**: Measurement for quantity.

Retrieval-augmented generation

Integrate external knowledge

Answering business-specific questions requires two steps:

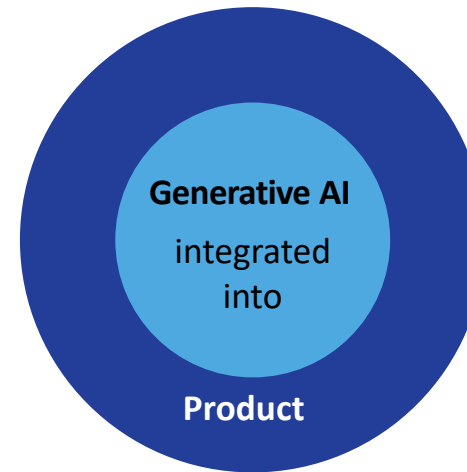
- Retrieve relevant business knowledge items given a question, using LLMs and other foundation models to *embed*.
- Use LLMs to *generate* the answer from the best results.



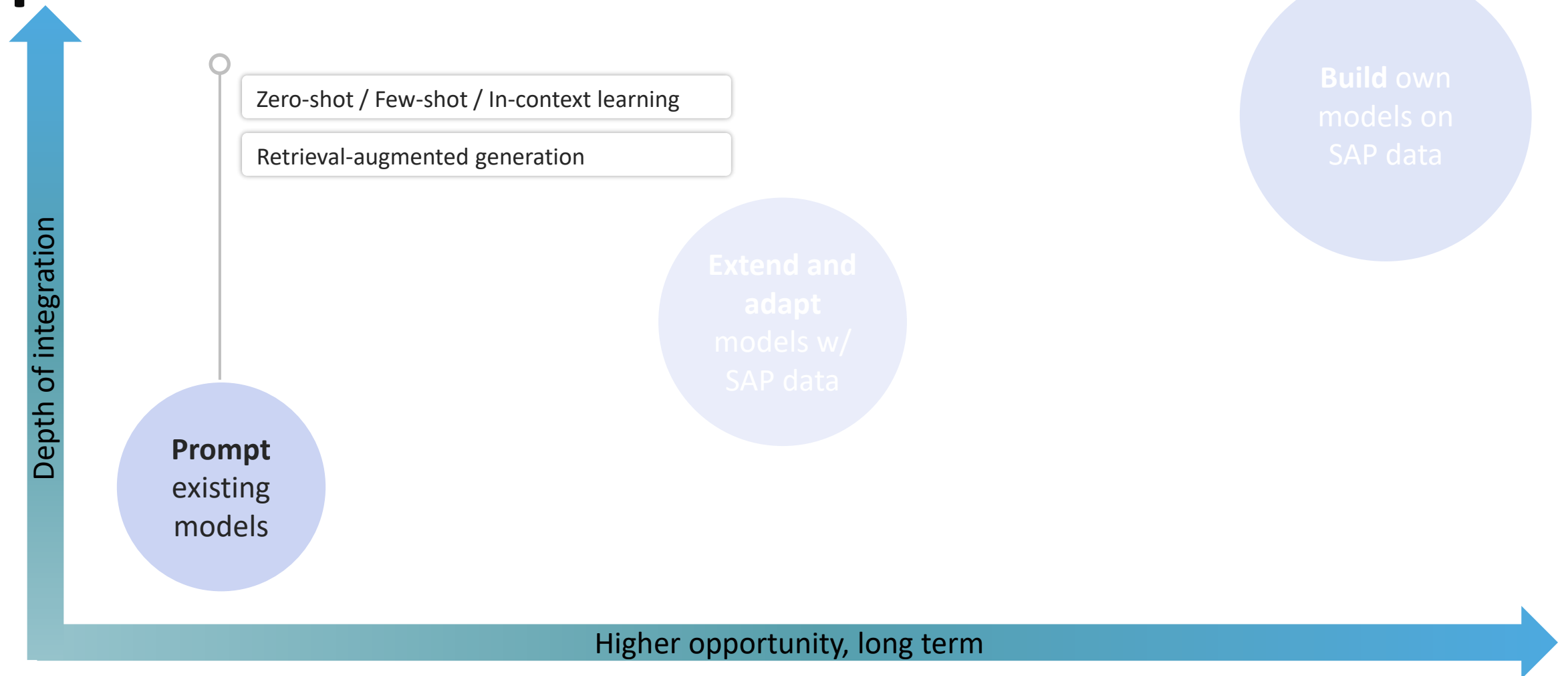
Generative AI + product interaction

Generative AI
in the product

Models can be used to provide
intelligent functions in a product.



Generative AI consumption and tuning patterns over time

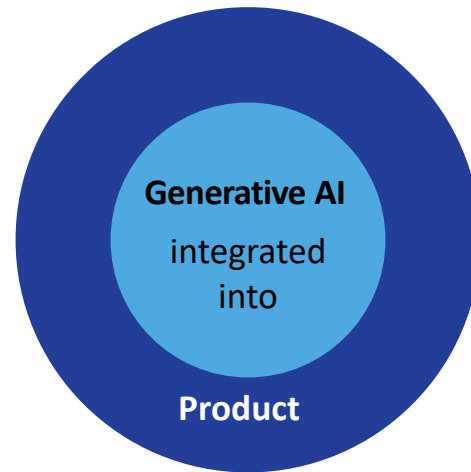


Extend models with SAP data

Generative AI + product interaction

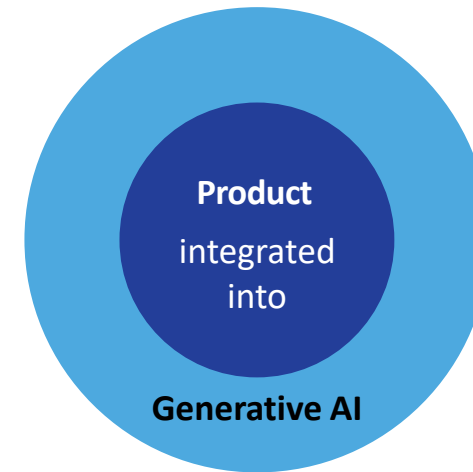
Generative AI in the product

Models can be used to provide intelligent functions in a product.



Generative AI utilizing products as tools

Models are given access to existing systems or products so that they can be instructed by the user to answer complex questions or solve tasks using the systems or products.

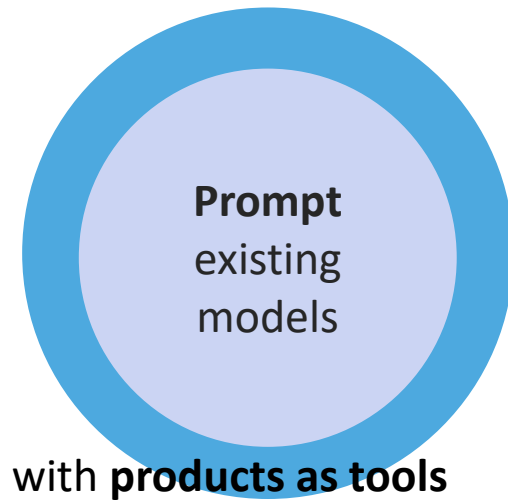


LLM-based AI agents

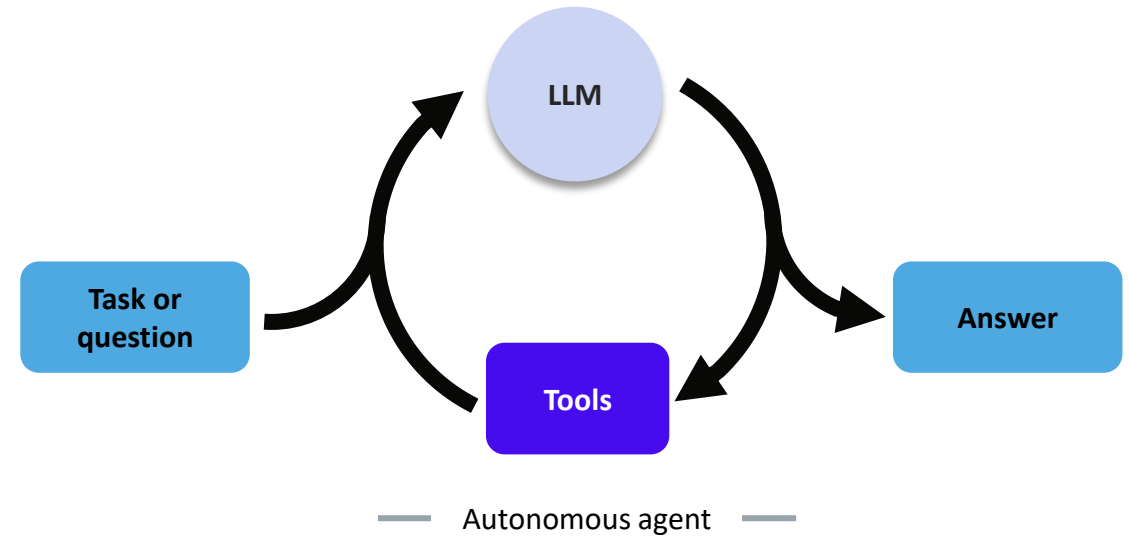
LLM-based AI agents

Experimental: Use prebuilt LLMs to build (semi)-autonomous systems

WHAT



HOW



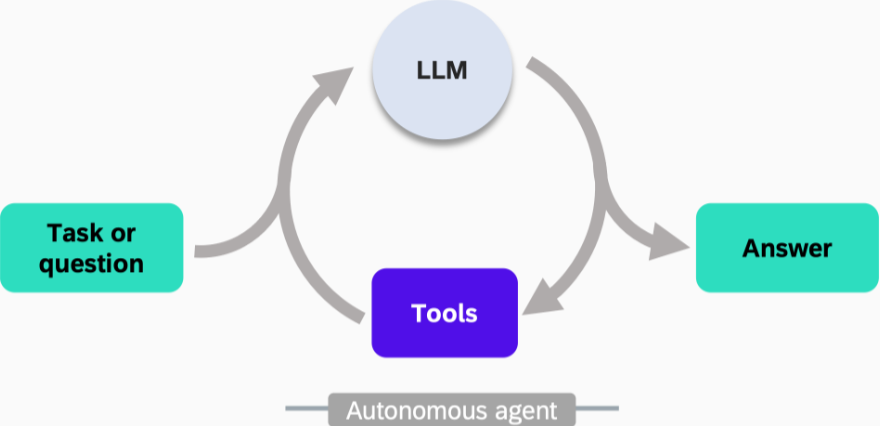
Demo

LLM-based AI agent

LLM-based AI agent: Demo

API Agents 🤖 - Extend LLMs with SAP Systems! 🚀

This is a technology demo to show case what is already possible with out-of-the-box LLMs.



Existing LLMs are **prompted** with knowledge from our API documentations (api.sap.com) to **extend** them with access to our systems.

Task/Question: User Inputs a Task

1. Retrieve

SAP Systems and their API specifications are retrieved based on the input (powered by **knowledge graphs**)

⤴ + |Type your message here...



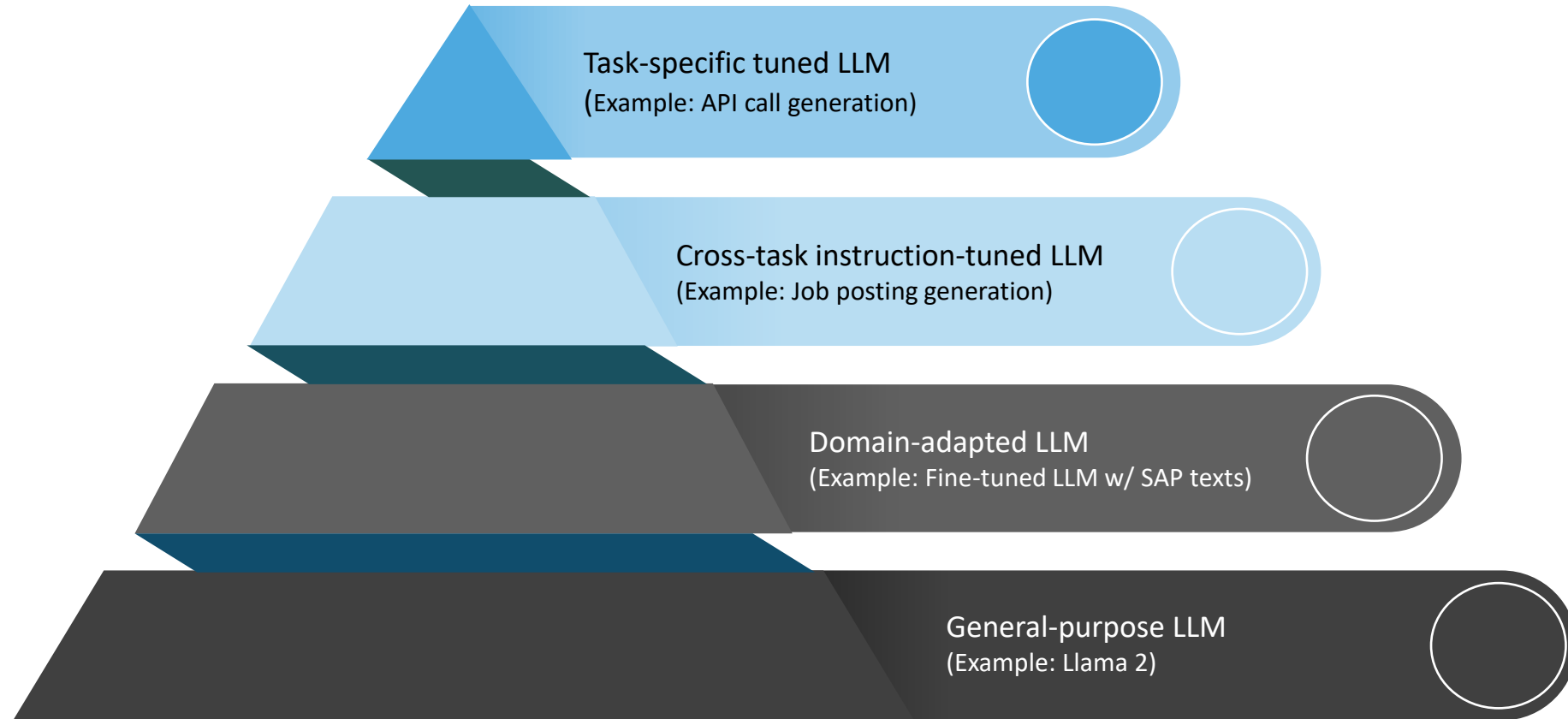
Demo

LLM-based AI agent

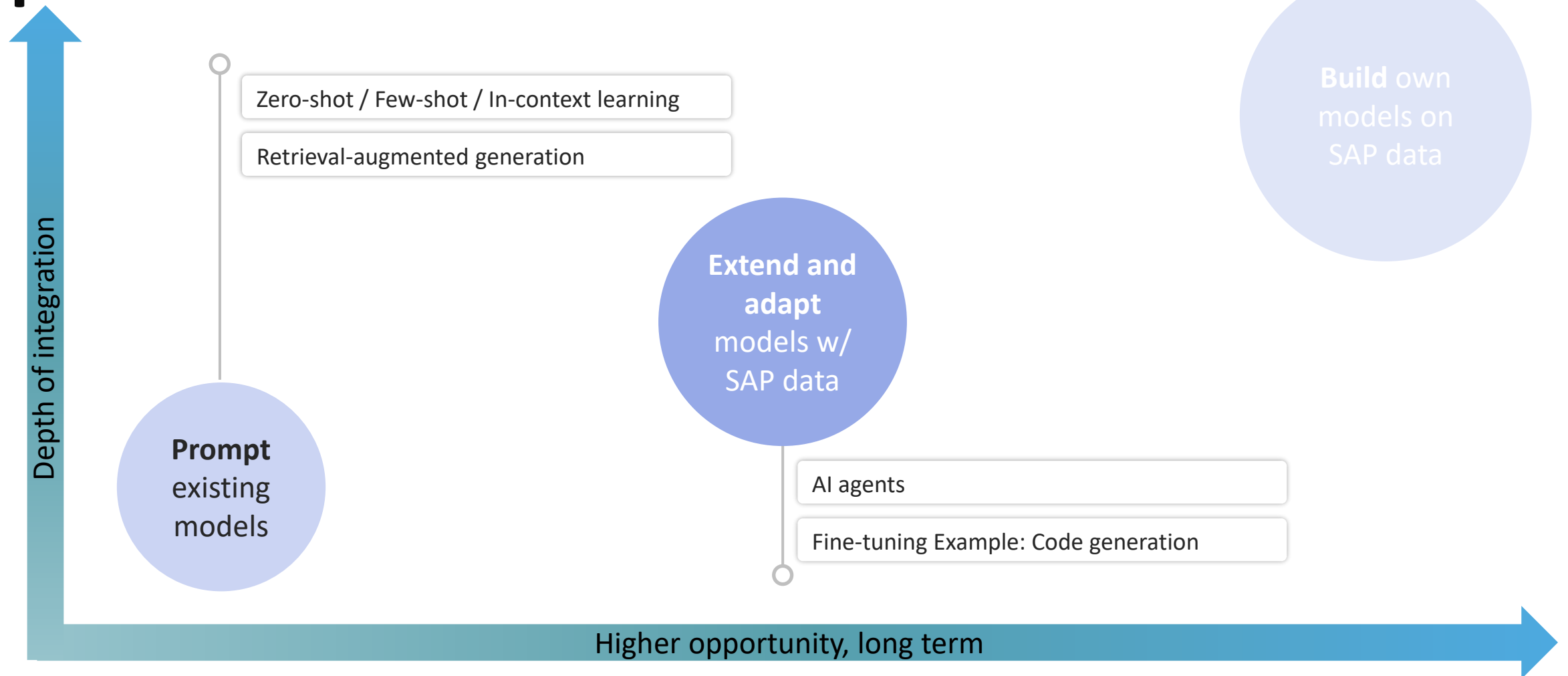
Adapt models with SAP data

Business adaptation

From general purpose to task-specific LLMs



Generative AI consumption and tuning patterns over time



Build own models on SAP data

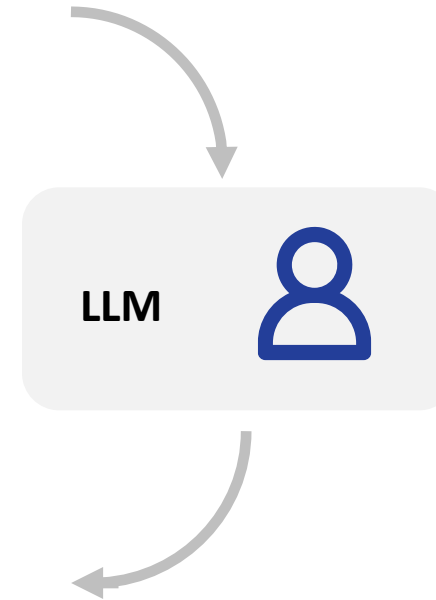
LLMs may not be sufficient for structured ML tasks

LLM input

Prompt for structured ML task*

LLM output

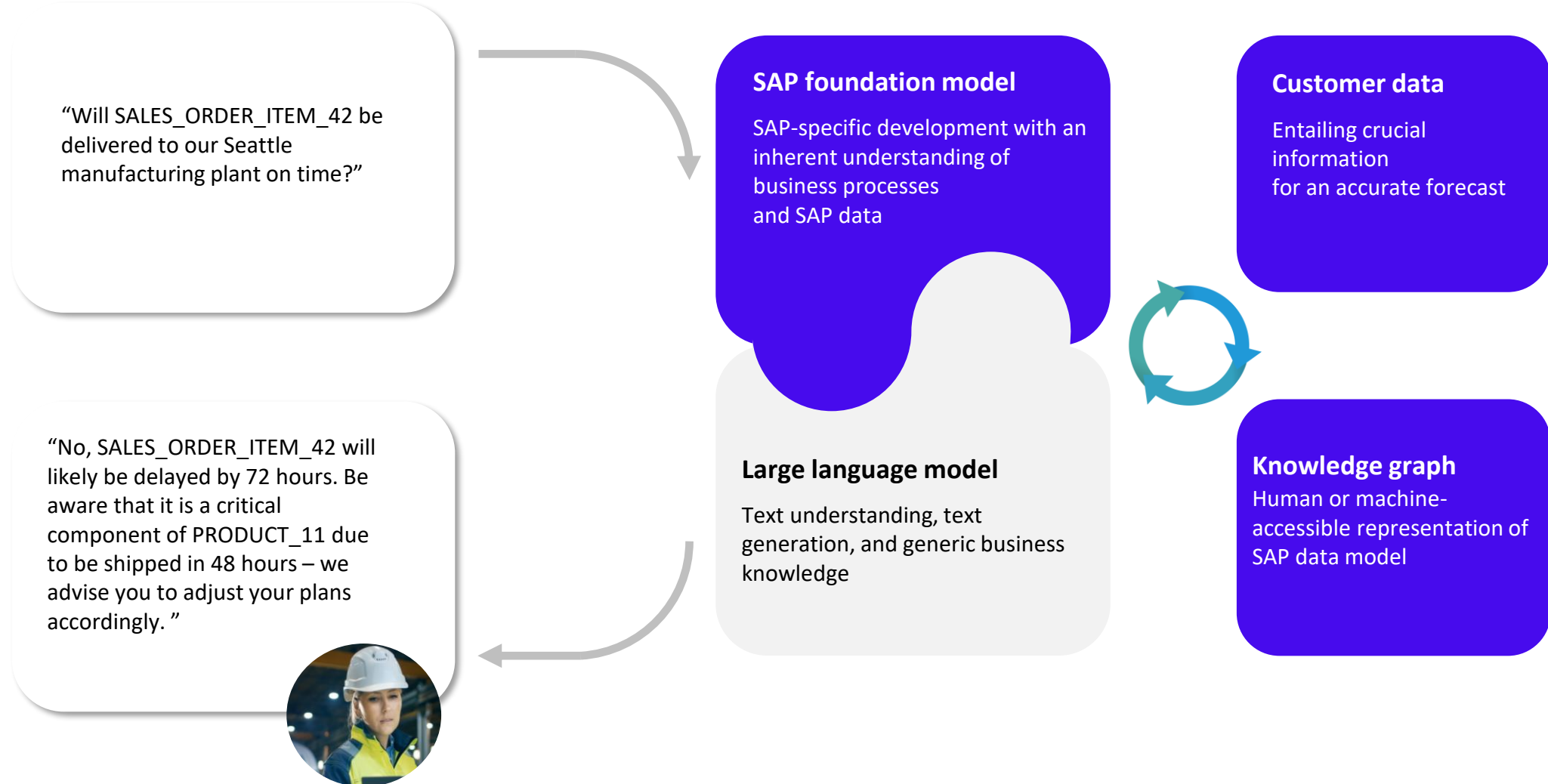
>> To predict the PAYMENTDELAY for the new customer, we would need to use a machine learning model trained on the provided example data. **However, as an AI text-based model, I don't have the capability to train and apply such a model.** <<



* Detailed prompt: Given is the following example table in JSON format with ground truth PAYMENTDELAY column: {json_string}. Given is also the following table in JSON format for unseen test customers without PAYMENTDELAY column: {json_string_test} Please predict the values of PAYMENTDELAY for those new customers by only outputting either "(1) payment in time", "(2) payment a bit late", "(3) payment late" or "(4) payment severely too late" for each of the table rows.'

Future | Foundation model

SAP's own foundation model to redefine enterprise AI



Future | Foundation model

SAP's own foundation model to redefine enterprise AI

WHAT

SAP-specific foundation model with inherent understanding of business processes and SAP data across customers and use cases

**SAP foundation
model**

WHY

- Enable **truly scalable enterprise AI** across customers and use cases
- Remove **time-consuming customer-specific training needs** (key hurdle in adoption of AI)
- Raise quality of predictions based on **SAP's unique set of enterprise data** and business process understanding

Differentiators

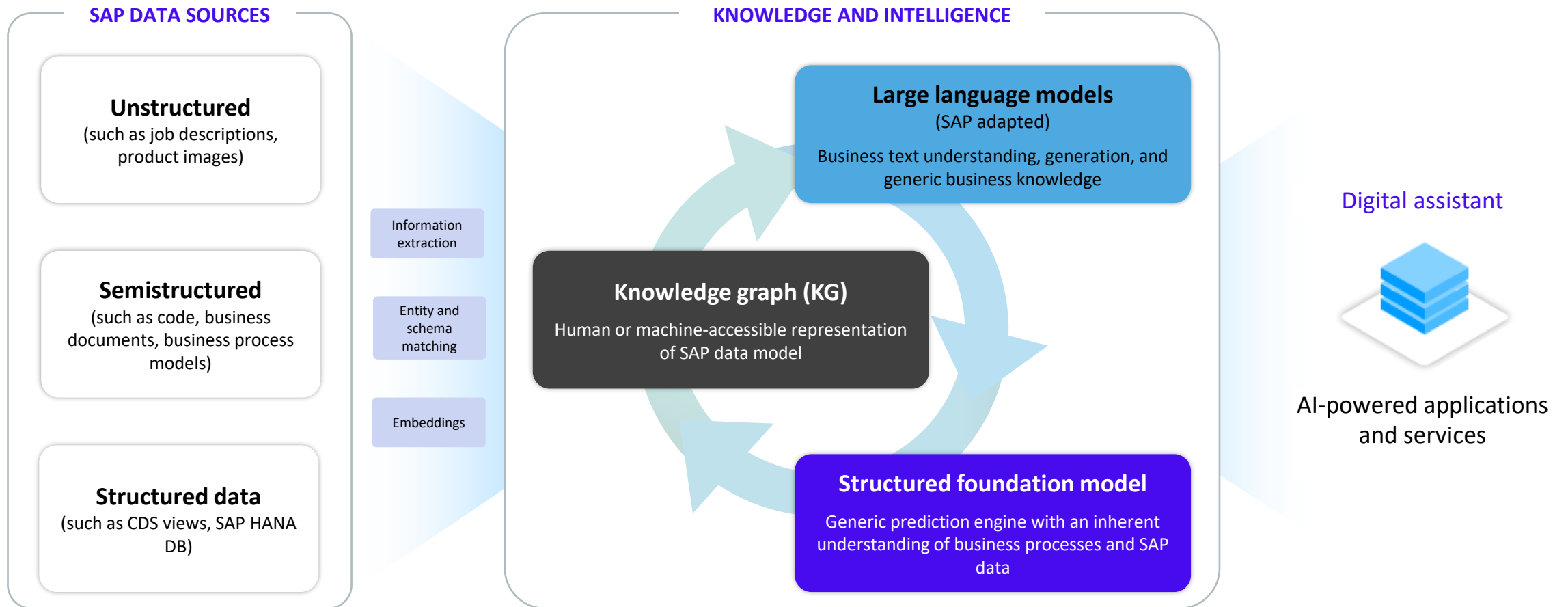
Enterprise data

Business process context

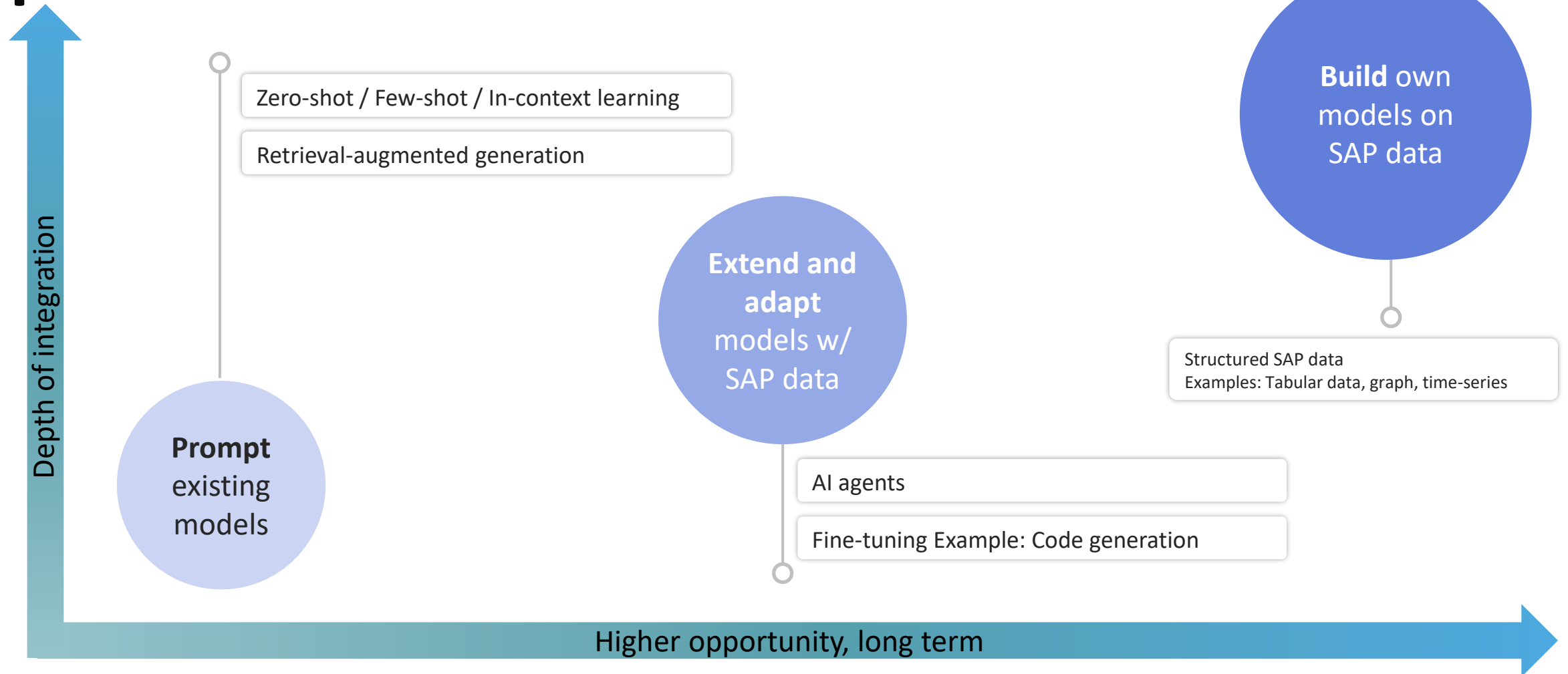
Domain and industry know-how

Future | Foundation model

From cross-customer data to LLMs, KGs, and foundation models



Generative AI consumption and tuning patterns over time



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