



# SAP BTP and Generative AI Strategy & Vision

Arne Stich  
8th Feb 2024



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# AI adoption is accelerating in the industry

Generative AI could add **\$2.6 trillion to \$4.4 trillion** incremental value annually to the global Economy

Existing productivity value from previous generation of AI and analytics

Source: McKinsey, State of AI in 2023, 1,684 participants globally

## WIDESPREAD ADOPTION, DESPITE EARLY DAYS

**1/3**

companies globally are using Generative AI regularly in at least one business function

**40%**

organizations will increase their investment in AI overall because of advances in Generative AI

**60%**

organizations with AI adoption are using Generative AI

# The Future with SAP Business AI

The most important business insights delivered with perfect clarity



Entirely new processes are generated to transform business performance



Employee productivity is augmented delivering improved outcomes







## Relevant

The most relevant AI delivered in the context of your business processes.



## Reliable

Uniquely reliable AI trained on the industry's broadest business data sets.



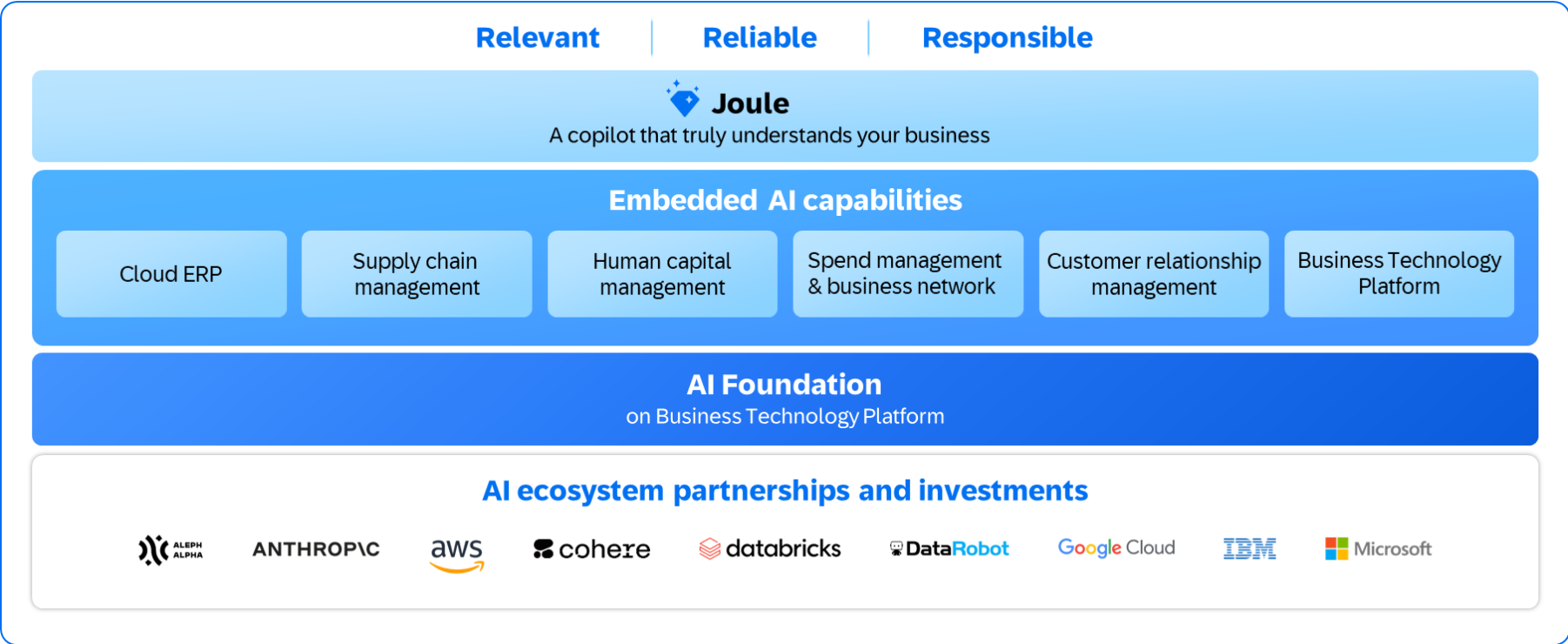
## Responsible

AI built on leading ethics and data privacy standards.



# Real business results

# Our business AI is embedded across the portfolio



## Joule

A digital assistant that provides intelligent insights and fast business outcomes offered with seamless user experience across the entire portfolio.

## Embedded AI capabilities

### Business Processes

AI optimization based on unique business data and business process context.

### Solution Areas

Business capabilities in every solution powered by AI to enable new business models.

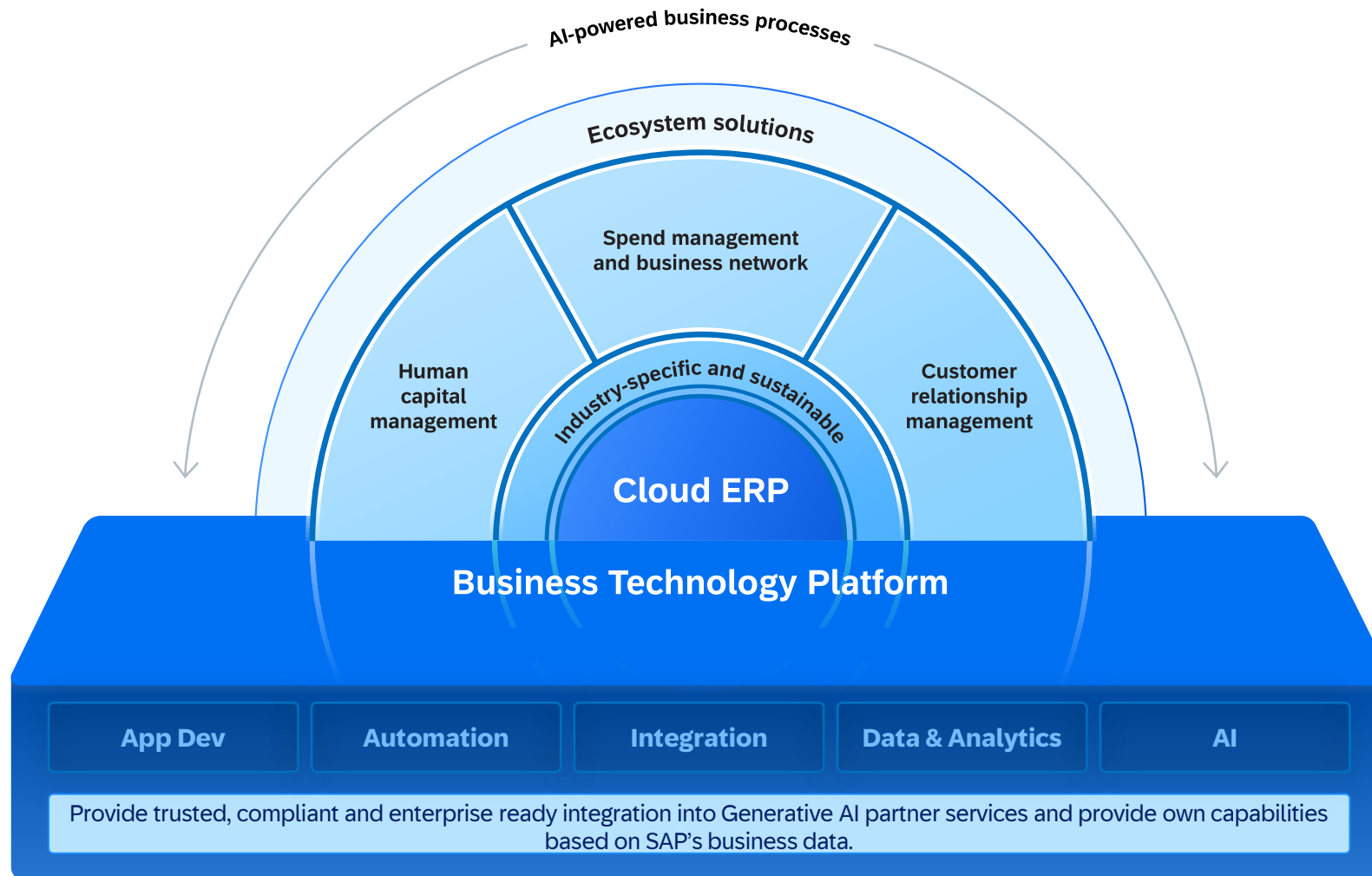
### SAP BTP

AI infused in all components, from code development to analytics.

## AI Foundation on SAP BTP

SAP BTP as the enabler for the development of Generative AI-powered business applications across our ecosystem.

# BTP as enabler to infuse Generative AI into our entire portfolio



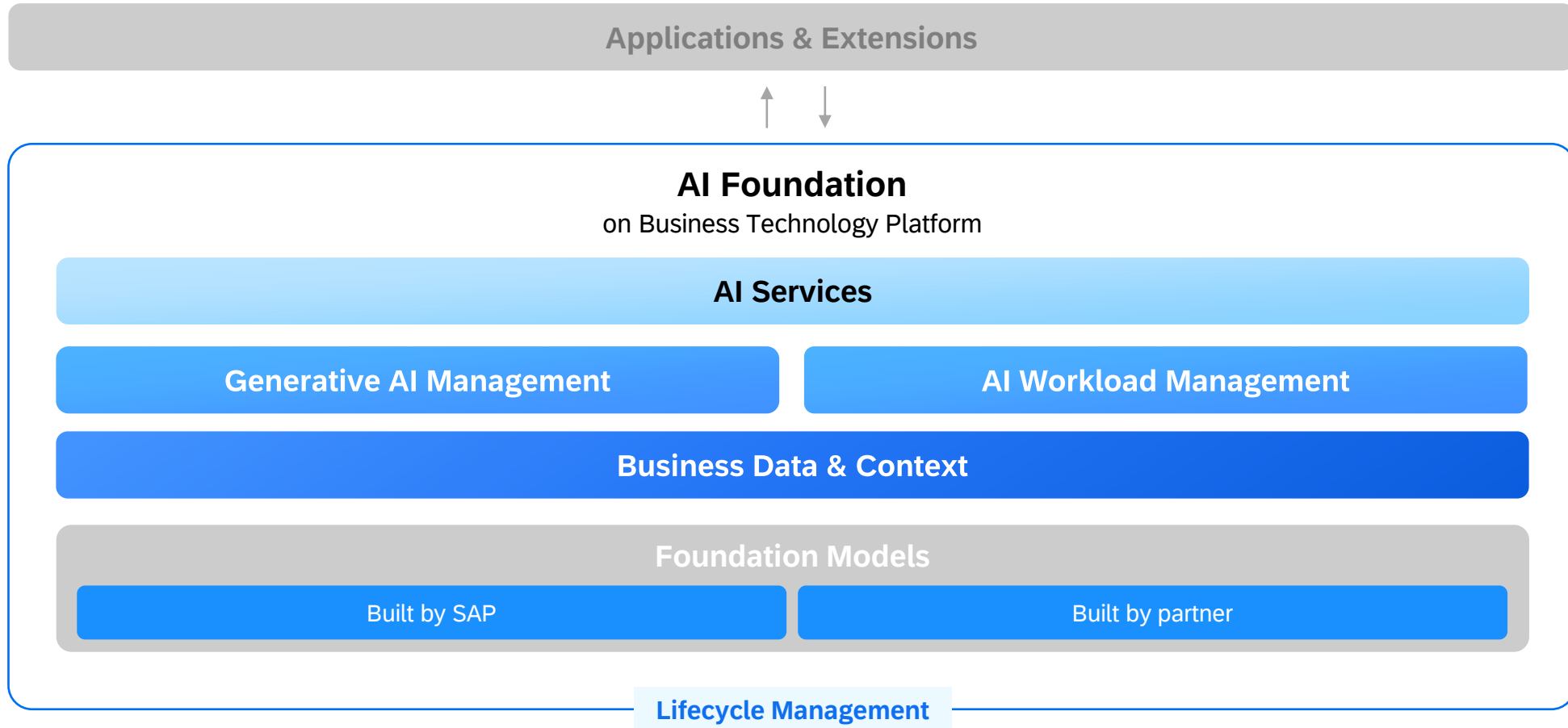




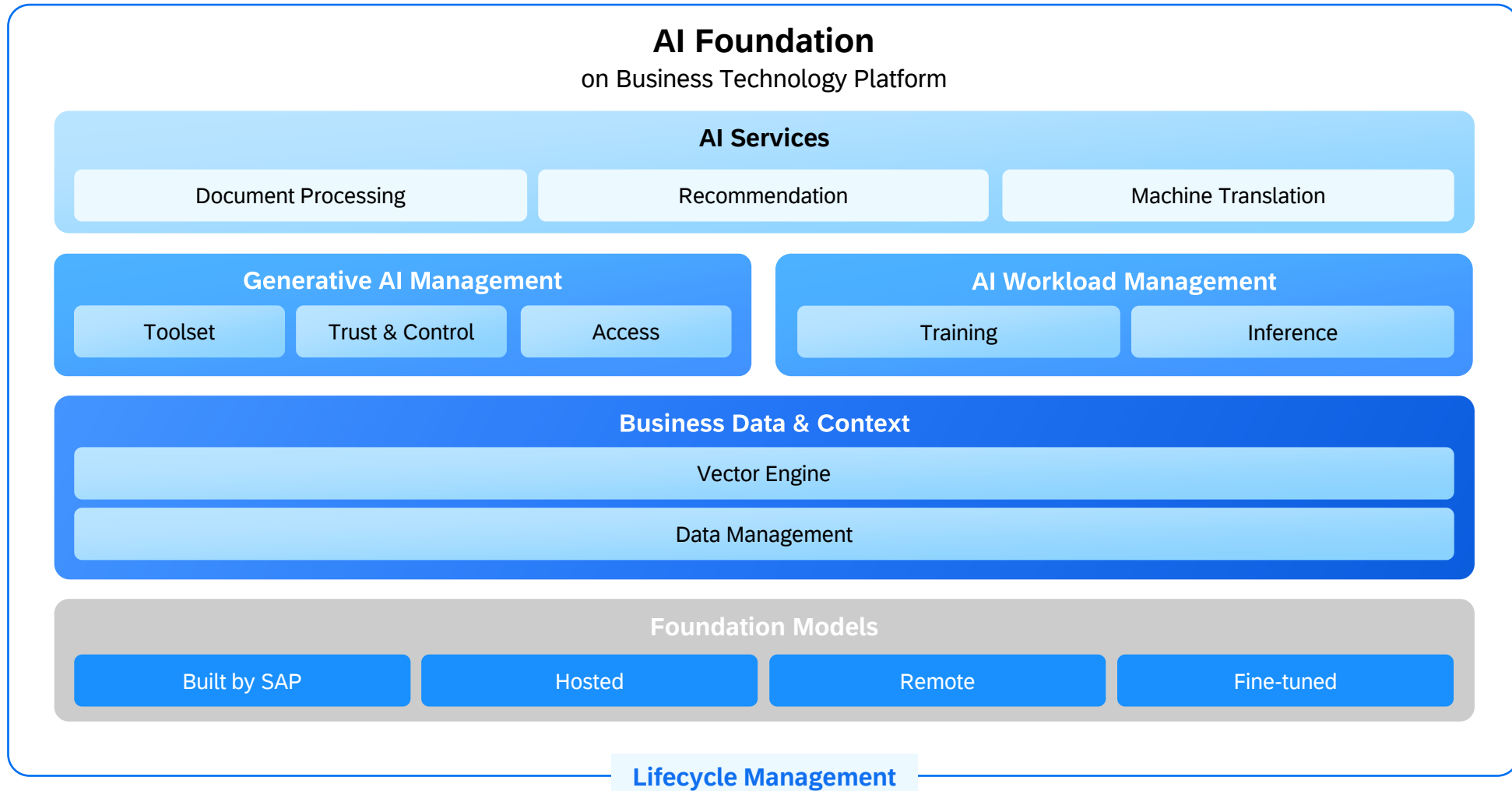
# Artificial Intelligence



# A complete set of services for AI developers on SAP BTP



# A complete set of services for AI developers on SAP BTP



# Explore models and engineer better prompts with generative AI hub playground in SAP AI Launchpad

Generative AI / Prompt Editor

**Prompt Editor** Name: HANA SQL Lag Save Create New Select

**Prompt** Run

**Message**

### Instruction:  
You are an SAP HANA Cloud expert.  
You are provided multiple context items that are related to the prompt you have to answer.  
Use the following pieces of context to answer the user's question.

### User:  
I'm trying to use the LAG analytic function of SAP HANA Cloud in a SQL Script procedure to get the previous row value in a specific partition. However, I'm getting unexpected results. Can you give me an example code that I could compare to my approach?

### Context:

> **Model** Selected Model: Falcon-40b

> **Model Grounding (0)**

**Response**

One approach to using the LAG analytic function in SAP HANA Cloud SQL Script procedure is to use a window function with a recursive subquery. Here's an example code snippet:

```
...sql
WITH RECURSIVE table_name AS (
  SELECT ...
  FROM table_name
  UNION ALL
  SELECT ...
  FROM table_name
), subquery AS (
  SELECT ...
  FROM table_name
  UNION ALL
  SELECT ...
  FROM table_name
  UNION ALL
  SELECT ...
  FROM table_name
)
SELECT ..., LAG(... OVER (PARTITION BY ... ORDER BY
subquery.column))
FROM subquery
...
```

This code creates a recursive common table expression (CTE) called 'table\_name' that fetches data from the table 'table\_name' with a starting condition. The 'SUBQUERY' CTE then selects all rows from 'table\_name' that lie after the current row in the recursion. The final query selects all columns from the 'SUBQUERY' CTE and applies the LAG function to calculate the difference between the current row and the previous row in the same partition.

To use this code for your specific scenario, you need to replace the table name, column indices, and column names in the 'SELECT', 'FROM', and 'UNION ALL' clauses with your own. Make sure that



## Explore

the possibilities and responses of different models with a single click



## Create

requests that best satisfy your needs in a dedicated prompt engineering tool

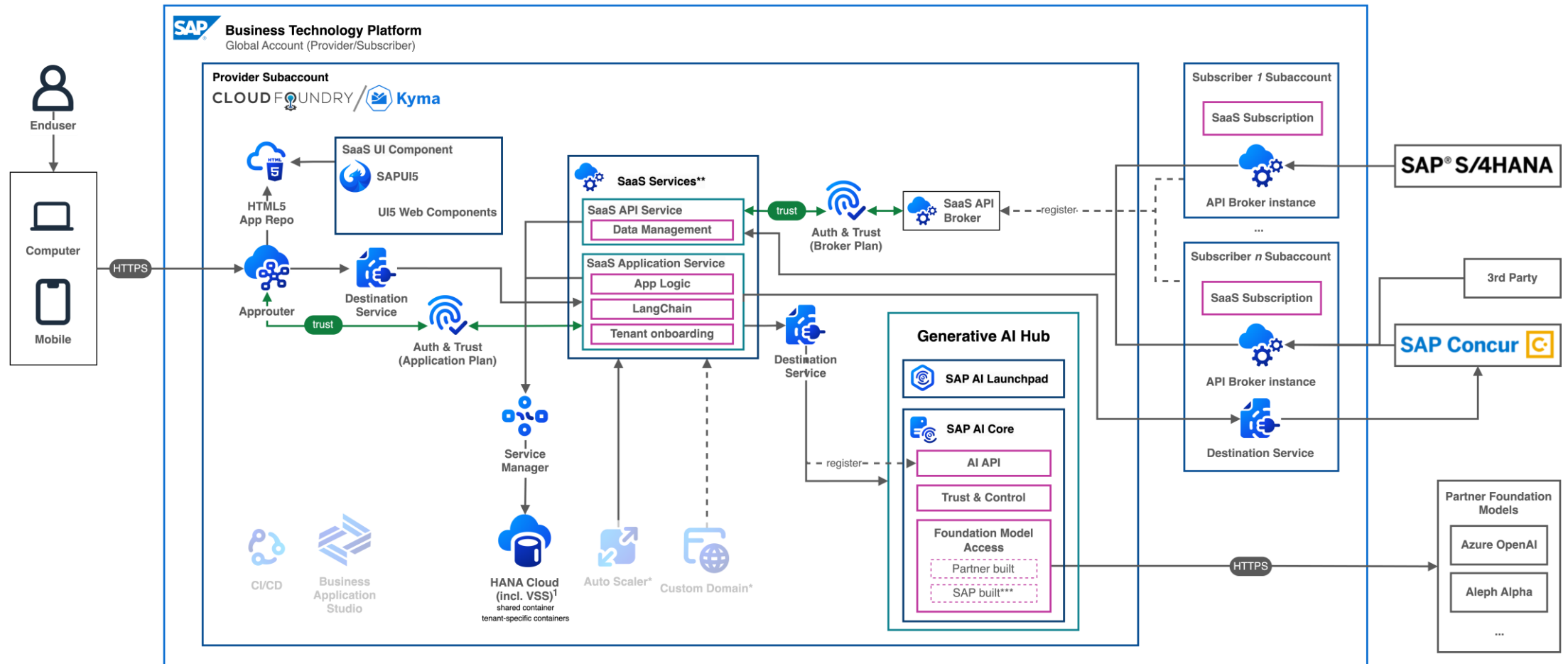


## Manage

The lifecycle of your prompts to guarantee their best usage into your applications

# Reference Architecture

## Target Architecture (Multitenant SaaS application)



(1) In the interim using pgvector

\*Cloud Foundry only  
 \*\*Using SAP Cloud Application Programming Model (CAP)  
 \*\*\*planned

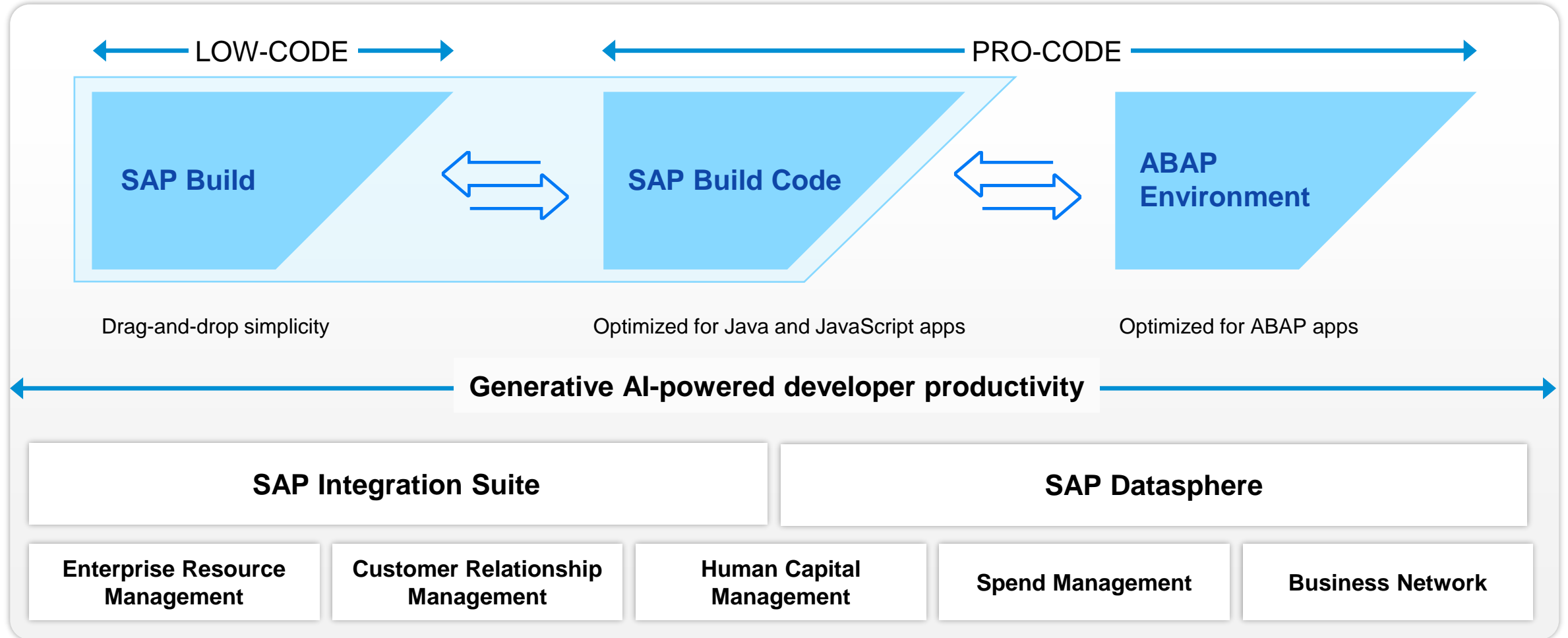




# Application Development

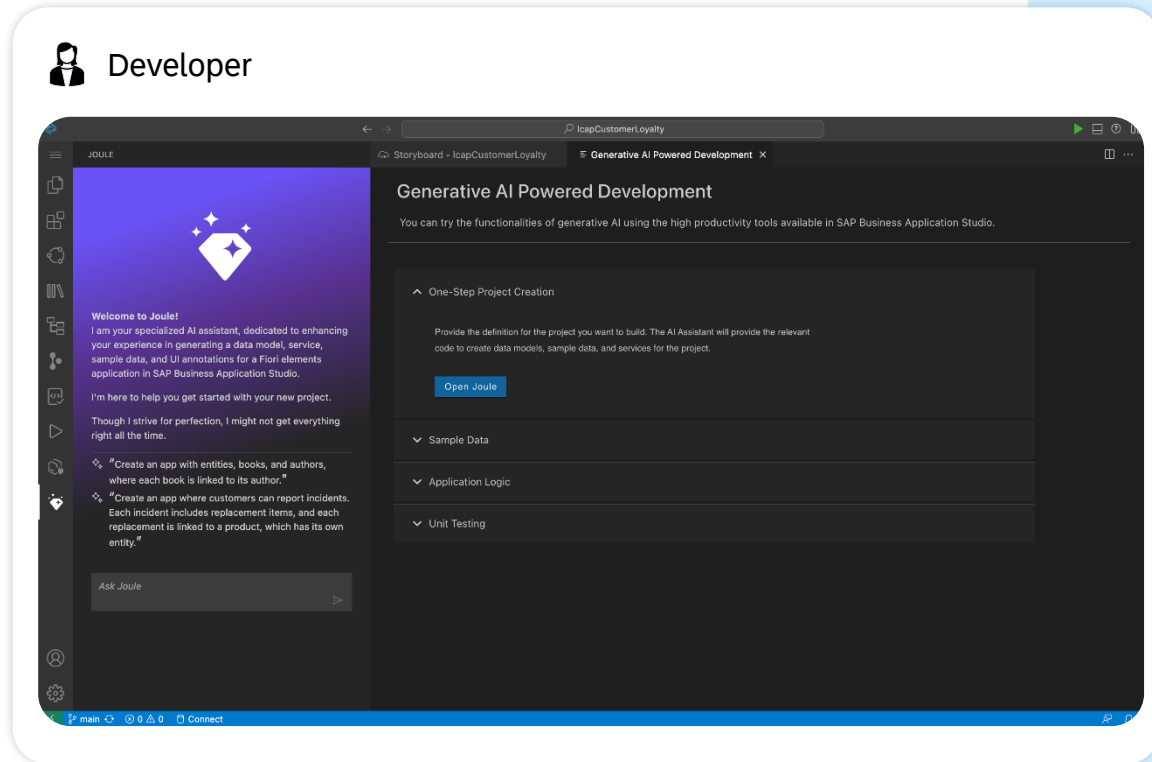
# Application development and automation on SAP BTP

Integrated solutions enabled by generative AI



# Application Development: Boost development productivity

## GPT-based CAP model, data, service and application logic generation



### Challenge

- Writing code is hard and requires upfront learning. Even experienced developers regularly need to consult the documentation which slows down the development process.
- Test data creation is tedious. One must always ensure that data fits the model and is up to date.

### Solution

- **Integrated in SAP BTP Business Application Studio & CAP**
- Create all necessary CDS files which define the entities, relations and service projections according to your prompt
- Generation of business logic in services, generate sample data
- Even existing models can be changed, just by providing descriptions
- Supports developers to generate unit tests for business in services

### Outcomes

**Up to 30%**  
time reduction to generate  
data models and services

**Improve**  
Developer experience

**Empower**  
Users to answer their  
technical and  
business questions

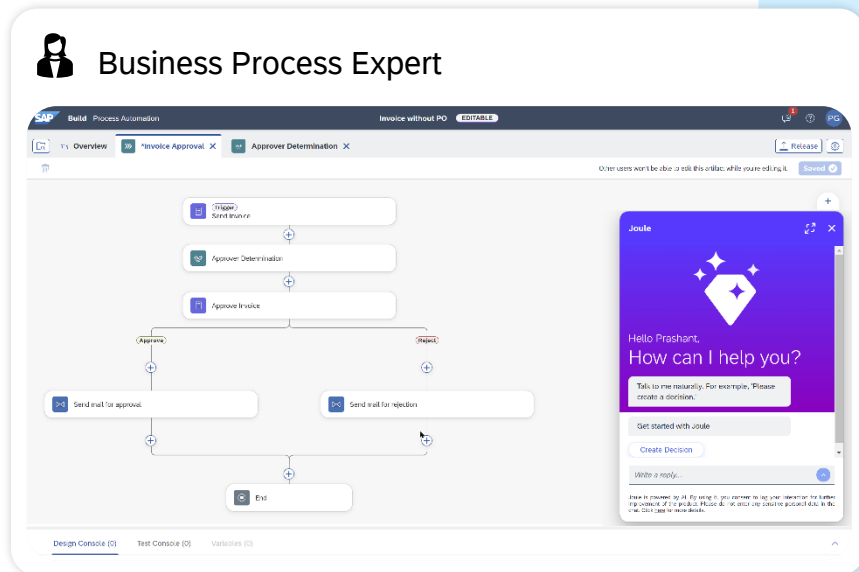


# Automation



# Automation: Executable Process AI & More

Generate processes, automations and decisions



## Challenge

- Business processes and automations can be complex to model
- Business users need to ramp-up on tools to model their processes or automations
- Even the tooling experts require time to build executable process automations and decisions

## Solution

### Interactive modeling with proactive recommendation and validation

- Generate processes, automations, forms and decisions (business policies) using the inputs provided in natural language by the business experts
- Generate artifacts which can be reviewed and modified as per need
- Recommendation of pre-built content from the store, real-time identification of gaps and out of the box capability to test and simulate

### Support in the generation and summarization of complex artifacts

- Summarization of complex artifacts in natural language (e.g., summary of complex decision table)

### Document Information Extraction

- Action processes with data from structured documents like invoices or payment records

## Outcomes

**Faster**

time in design-to-execution

**Improved Quality**

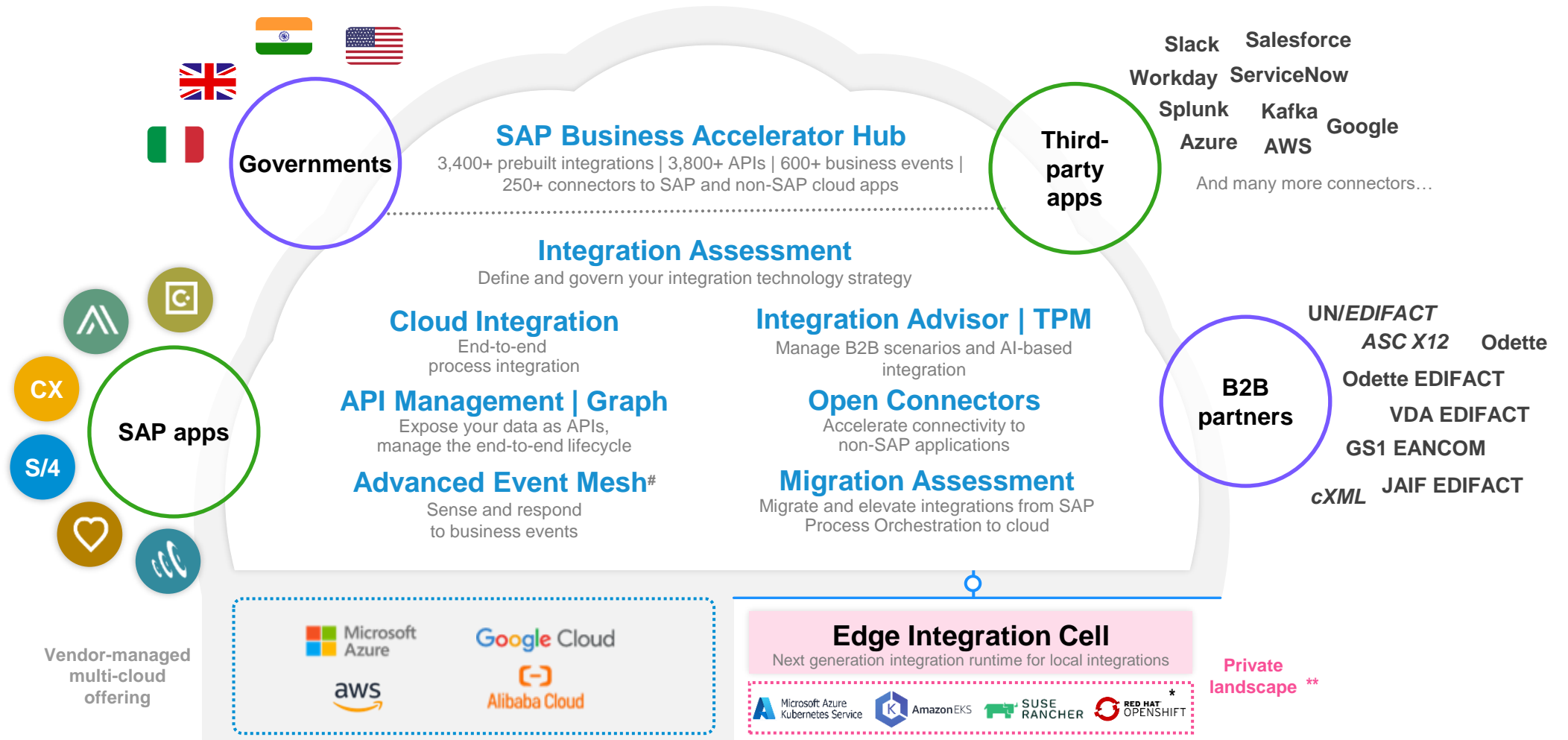
of processes and automations



# Integration

# SAP Integration Suite

SAP's hybrid integration platform for the Intelligent Enterprise



# Integration Suite: Generate Integration Flows

Leverage pre-built integration content and accelerate developer efficiency

## Integration Developer

The screenshot displays the SAP Integration Suite interface. At the top, there's a navigation bar with 'SAP Business Accelerator Hub' and various menu items. The main content area shows an integration flow titled 'Replicate Employee Data from SAP SuccessFactors to Sales Cloud'. The flow is visualized as a sequence of steps: 'Request Reply' (connected to 'SF-EC'), 'Filter XML Declaration', and 'SF-EC to CHReq\_XSLT' (connected to 'CNS'). A 'Joule' AI assistant chat window is open on the right, displaying a conversation where the user asks for help with integrating S4 HANA with SuccessFactors, and the assistant provides recommendations and offers to generate integration flows. Below the flow diagram, there are tabs for 'General', 'Runtime Configuration', 'Error Configuration', 'References', 'External Parameters', and 'Problems'. The 'Runtime Configuration' tab is active, showing details like 'Runtime Profile: Cloud Integration', 'Namespace Mapping', and 'Allowed Header(s)'.

## Challenge

- Customers face complex integration challenges with the diverse applications and systems in their landscape. Developers need to spend lot of time and effort to design integrations & APIs and need to have the right domain & technical expertise to model transformations.

## Solution

### Recommend standard integration content

- Leveraging **SAP Integration Suite**'s 3000+ pre-built integrations to provide recommendations for required integration use cases.

### Generate Integrations

- Based on the specific integration scenarios, different connecting applications and business partners, generate interface mappings, scripts, and integration flows.
- Potential to leverage integration data, to generate test cases and mocking backend systems to accelerate developer productivity.

## Outcome

**3x Faster**  
time to design

**6x Cost Savings**  
with reduced effort to implement





# Data & Analytics

# Unlock insights with AI-infused SAP Data & Analytics Portfolio

**SAP Analytics Cloud**  
Extended Planning and Analysis



**SAP Datasphere**  
Business Data Fabric



**SAP HANA Cloud**  
Intelligent Data Application



## Conversational

Access swiftly to insights and accelerate your use of major workflows using natural language and leveraging large language models

## Augmented

Get accurate and consistent insights for fact-based decision-making

## Predictive

Predict potential outcomes, generate forecasts and automate predictive planning

## Governed

Provide proper and governed data foundation for AI cases, incorporating semantically rich data from SAP and non-SAP sources

## Open

Integrate SAP Datasphere with AI-enabled stack of tools and processes through an API-first approach

## Simple

Achieve business outcomes faster and easier with innovations, such as automated modeling

## Intelligent

Empower developers to build apps that utilize multi-model and machine learning capabilities and connect to vital business data

## Integrated

Process, store, and analyse any data type – relational, geospatial, graph, JSON, and vector – in one flexible and adaptable database

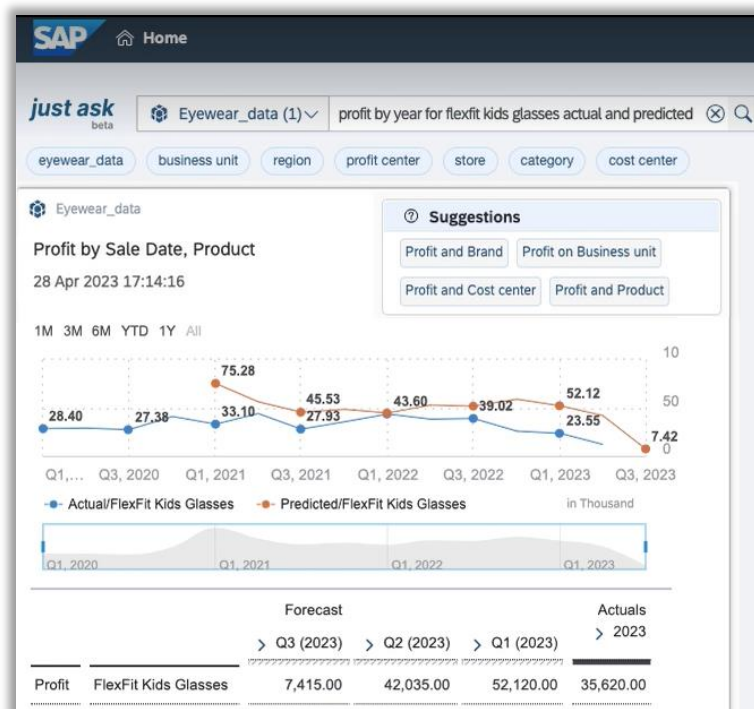
## Secure

Provide private context to generative AI applications via similarity search against high-dimensional embedding vectors

# Get answers to business questions in natural language in SAP Analytics Cloud

## AI-powered queries for analytics in natural language

 Information Consumer



### CHALLENGE

- Information consumers have little to no experience with analytics tools
- Information consumers access to insights is limited to existing dashboards
- IT teams face challenges to keep up with growing business demand for insights

### SOLUTION

#### Just Ask for SAP Analytics Cloud

- Empower Information consumers to get answers on their own
- Scale the use of analytics & fully leverage your data assets
- Analytics teams can focus on delivering strategic insights

### OUTCOMES

**Accelerate**  
Access to relevant insights

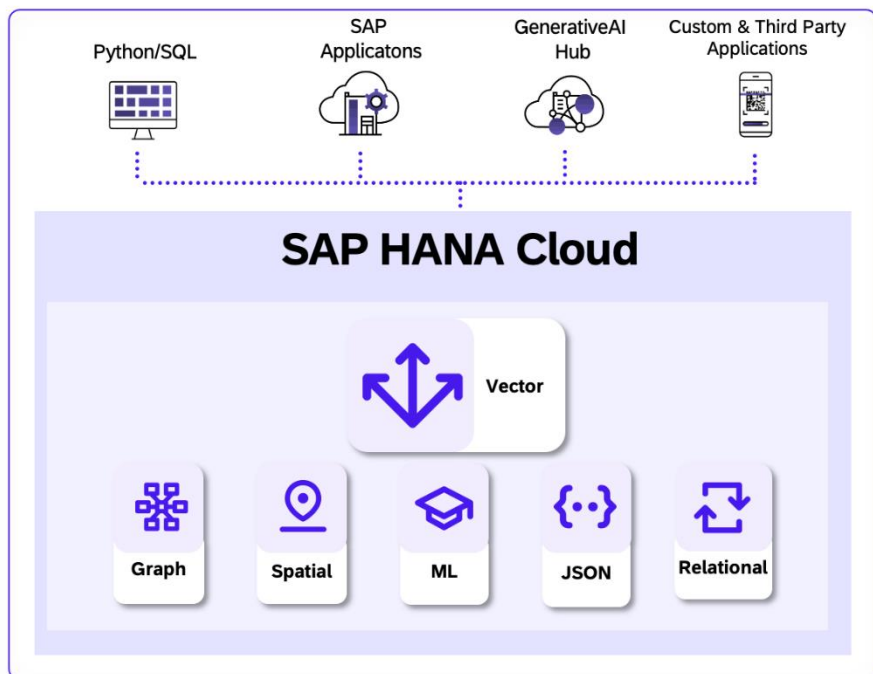
**Increase**  
Analytics adoption for the  
80% occasional users

**Empower**  
Users to answer their  
business questions

# SAP HANA Cloud Vector Engine

## Storing Embedding Vectors and Similarity Search

 Developer



### CHALLENGE

- Generative AI – Retrieval Augmented Generation (RAG) scenarios by providing business context using embedding vectors
- Semantic search, clustering, outlier detection, ...

### SOLUTION

- Store high-dimensional vectors along enterprise data
- Run fast vector searches using SQL
- Combine results from vector-based similarity search with other SQL operations like joins, filters, aggregations
- Enable Generative AI applications with out-of-the-box vector engine capabilities in SAP HANA Cloud

### OUTCOMES

#### Generate

Coherent and fact based responses with business context

#### Reduce

Significantly the model 'hallucination' behavior

#### Secure

Sensitive and confidential information

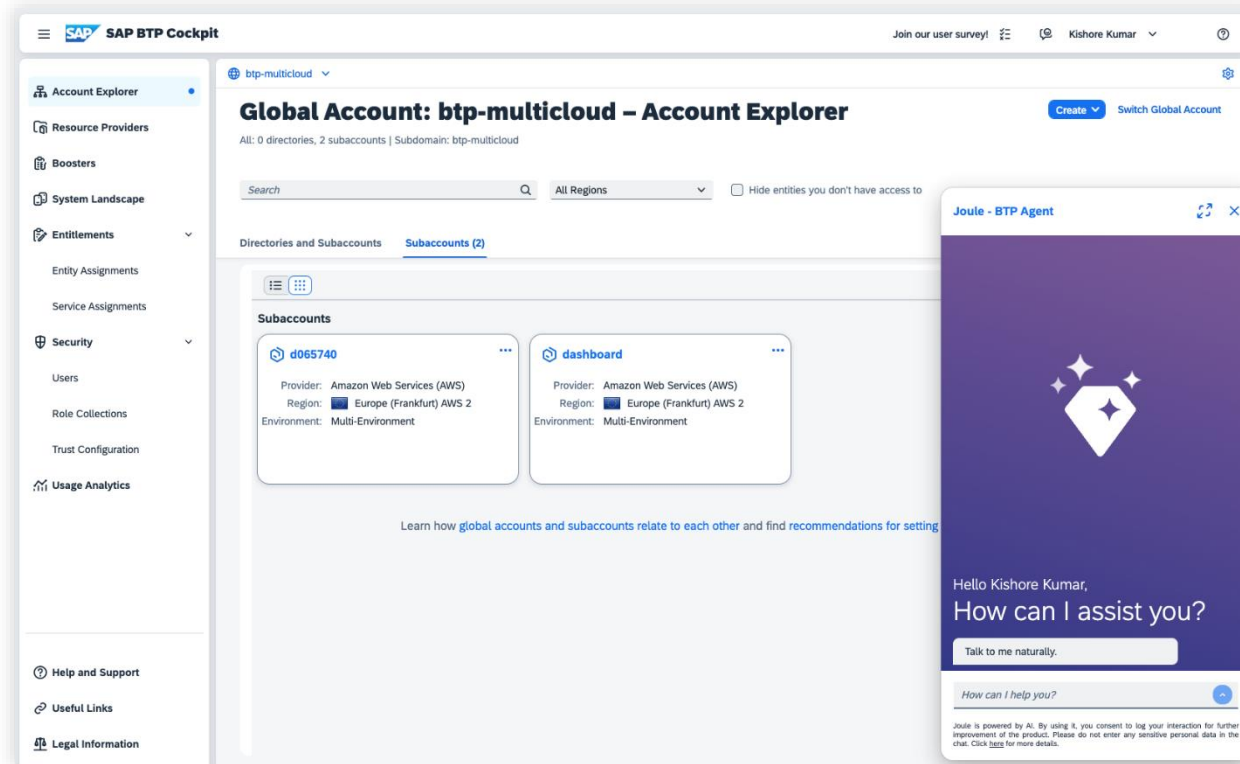




# **BTP Administration**



# Simplify administration in the BTP cockpit with AI using Joule



**Reduce**  
time needed for BTP Administration

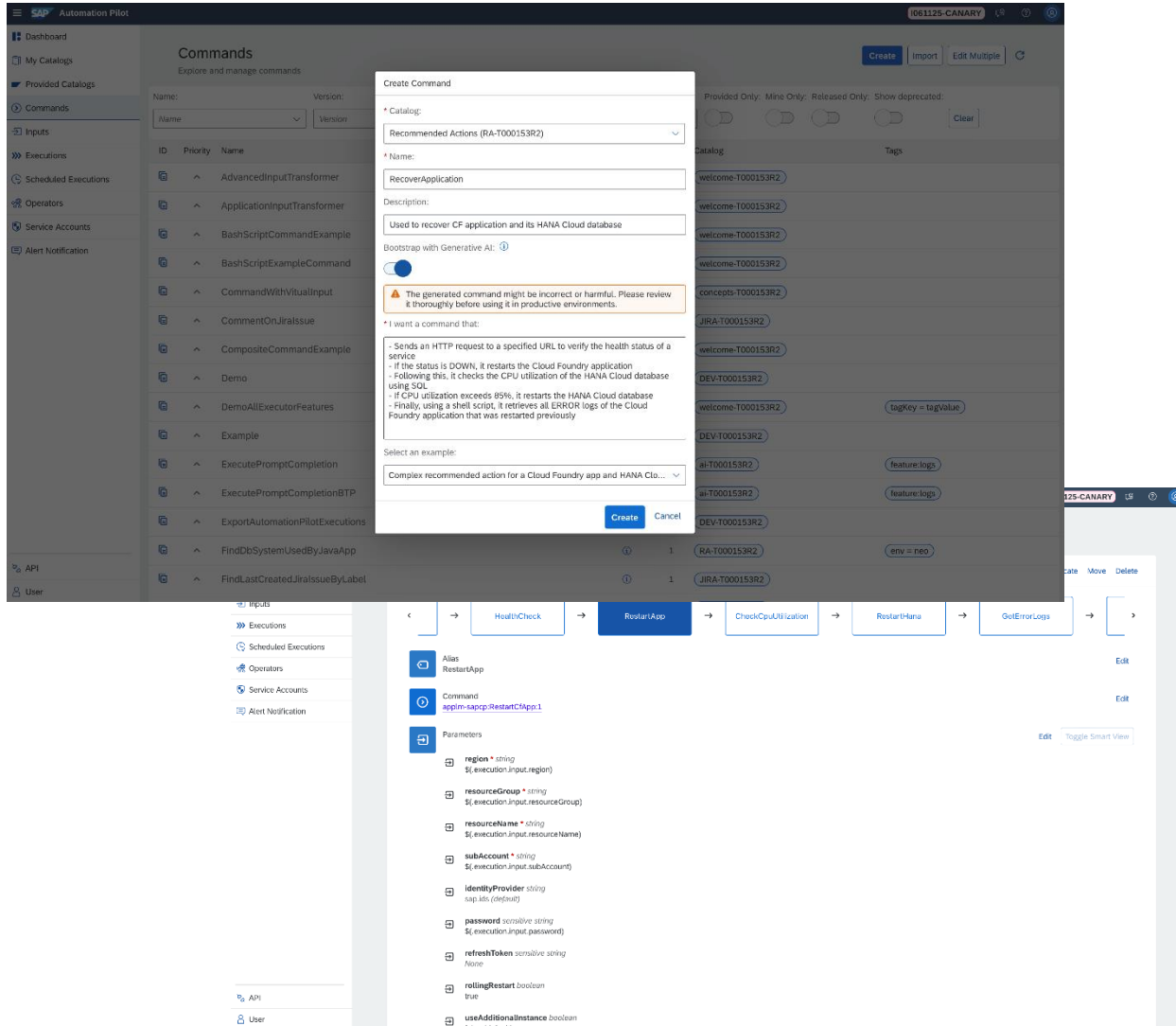


**Interact**  
with BTP from any other SAP Solutions



**Empower**  
Users to get faster value from BTP with the help of AI

# Generate automation flows with the assistance of AI in SAP Automation Pilot



## Boost

DevOps and SRE efficiency by generating automation flows from a concise user prompt



## Empower

Users to create complex automation flows with the user friendly and integrated interface



## Optimize

Natively automation flows with the AI knowledge of coding, APIs and SAP Automation Pilot concepts



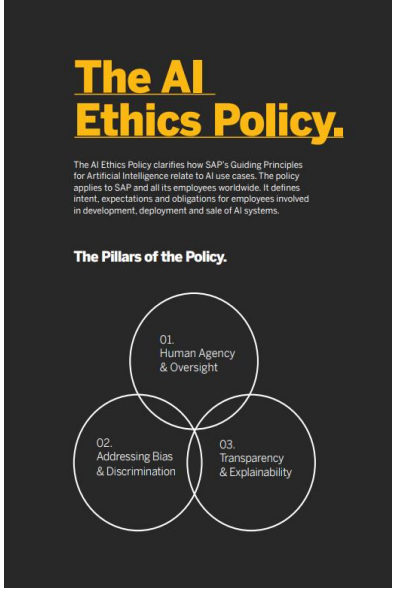
# Ethics & Data Privacy

# AI built on leading ethics and privacy standards

**Guiding principles and policies** that steer the development and deployment of our AI software

**Data protection and privacy standards** that you can trust to run your business on

**Governance model** with external AI ethics advisors and cross-functional operationalization

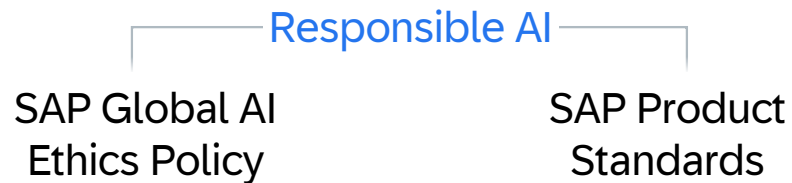


# Ensuring data privacy for Generative AI

## RESPONSIBLE AI

SAP's use of **generative AI follows the same principles of business AI.**

A rigorous development and responsible AI review processes.



## DATA USAGE

For predictions, customer data and context is required to receive meaningful results.

SAP ensures that **no customer data is used** by third-party vendors to train foundation models.

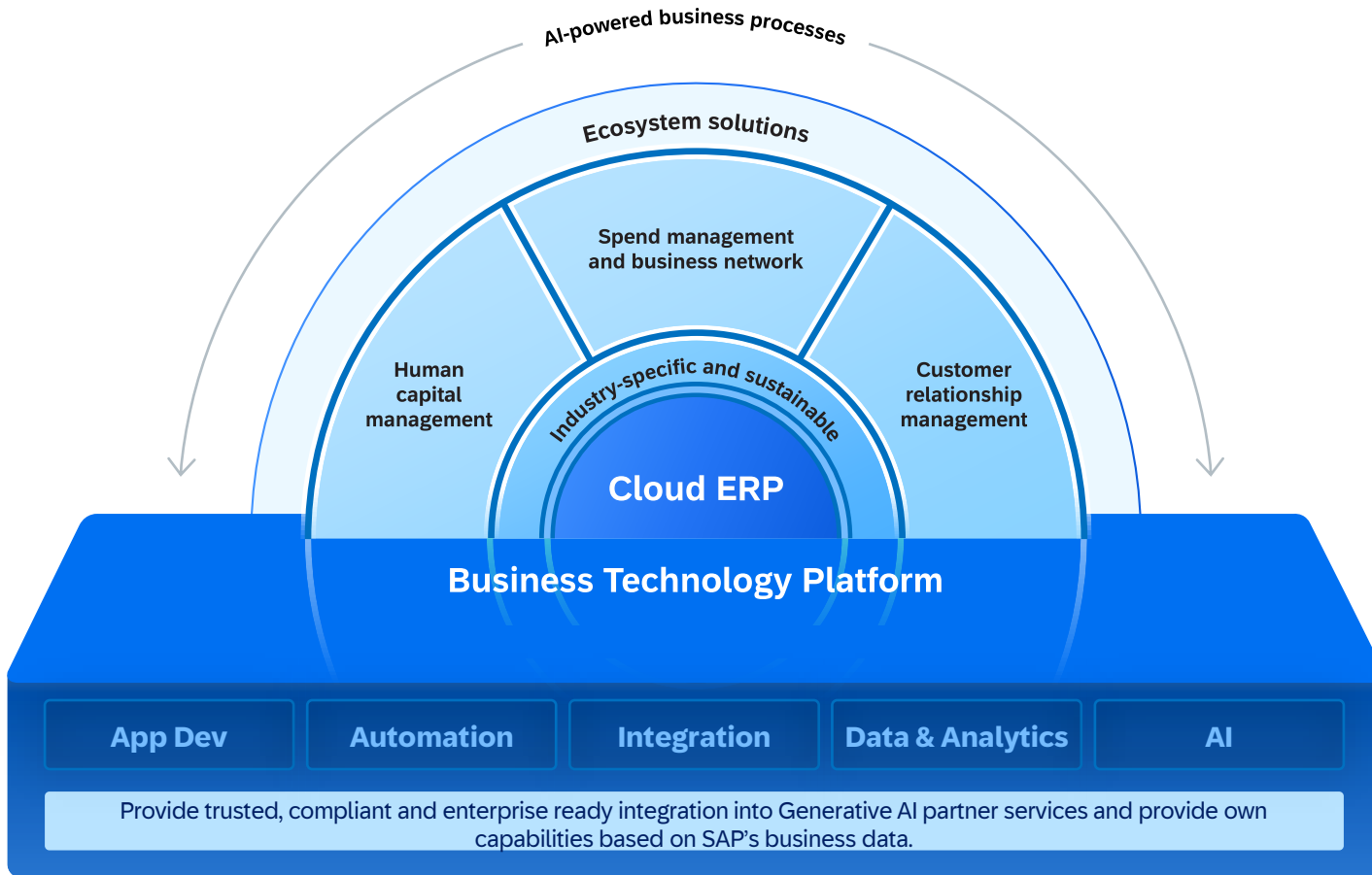






# Conclusion

# BTP as enabler to infuse Generative AI into our entire portfolio



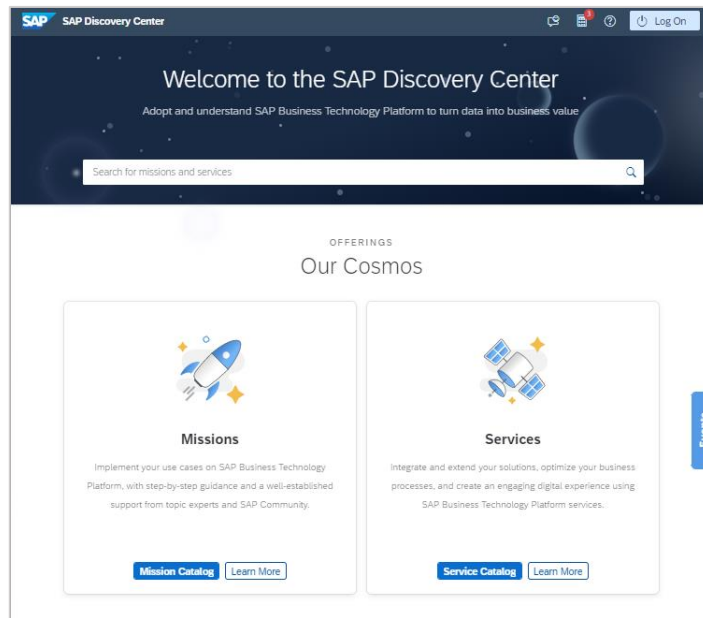
**SAP BTP powers SAP Business AI**

**SAP BTP utilizes GenAI to boost your productivity**

**SAP BTP and AI: reliable, relevant, responsible**

# SAP Discovery Center – one-stop shop for all SAP BTP resources

## Explore BTP Use Cases & Services



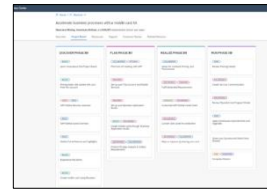
### SAP Discovery Center

#### Find all SAP BTP related information

- Use cases
- Free Tier Services

#### Realize the Use Cases as a Mission

- Step-by-step guidance and tutorials
- Structured project board with phases and tasks
- Collaboration with SAP Experts and Partners



#### Gain More Insights Into the Service(s)

- Roadmaps
- Service plans

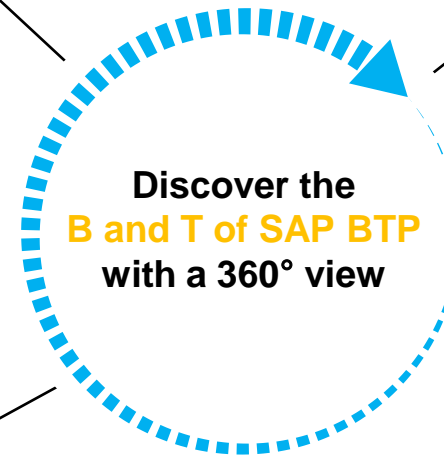
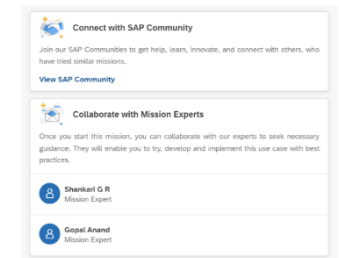


#### Be Inspired by Customer Stories

Take a look at other customers' success

#### Get Support

- Connect with SAP Community
- Collaborate with Experts



Discover the **B and T of SAP BTP** with a 360° view

#### Analyze & Estimate Costs

Check pricing with the integrated estimator

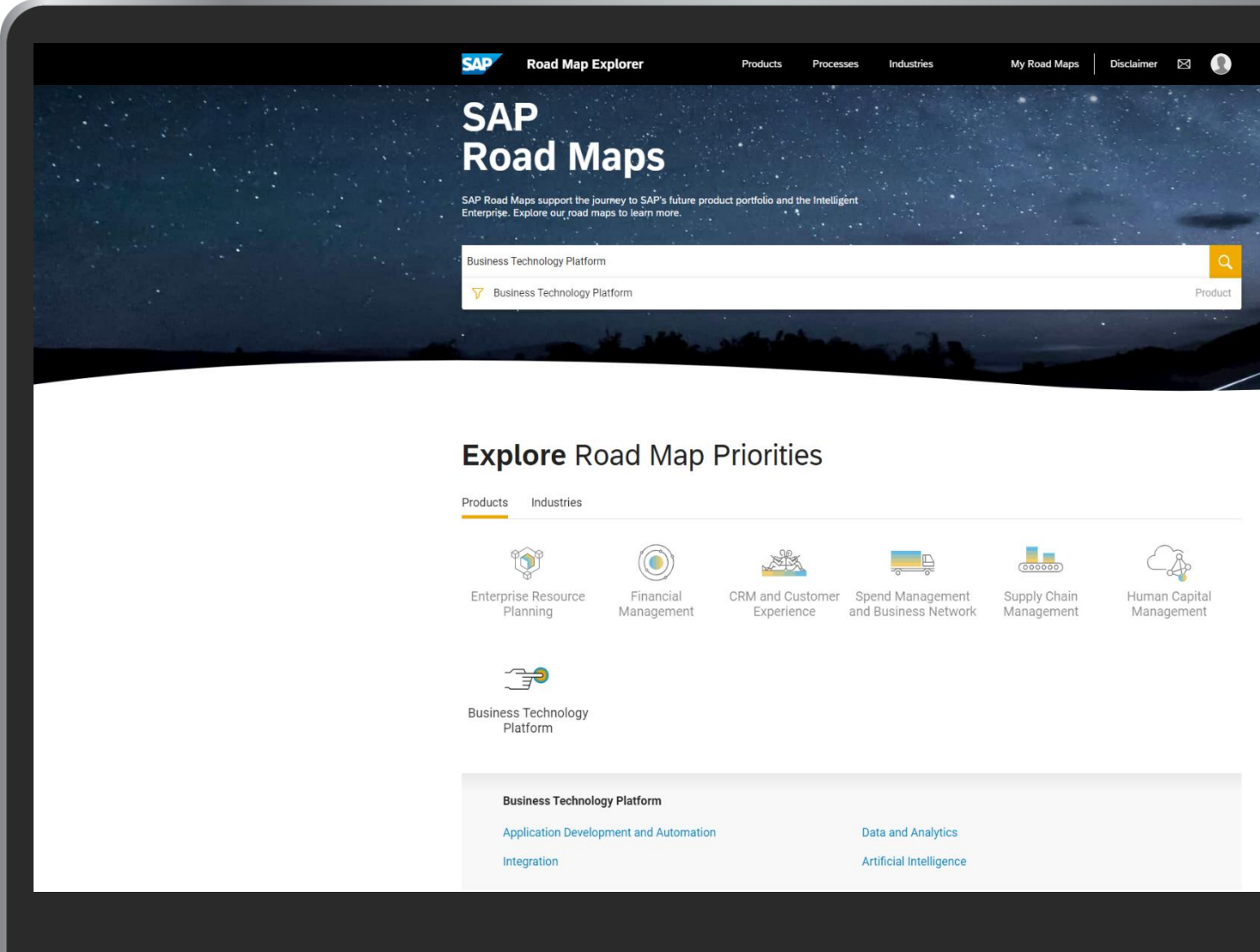
Discovery Center Demo Video



# Explore our SAP BTP road map



Scan this code or visit [roadmaps.sap.com](https://roadmaps.sap.com) to learn more



# Thank you.

