



Generative AI

Leveraging Generative AI with SAP on AWS



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Traditional AI vs Generative AI

Traditional AI

- Depends on explicit on Rules, Logic, and Data to program behavior
- Typically trained on labeled data
- Uses deterministic models – same output for the same input every time
- Objective evaluation – results are based on reference

Generative AI

- Derives insights from data, aiming to create systems that can generate novel and diverse content
- Trained off labeled and unlabeled data
- Uses probabilistic models – often provides different output for the same input based on some random factors
- Subjective evaluation – results based on human perception or preference

Generative AI: Generic Capabilities



Text Generation



Text Summarization



Multimedia Generation



Search



Code Generation



Text Extraction



**Paraphrase/
Translate**



Multimedia Classification





Chatbots



Code Summarization

Types of Foundation Models

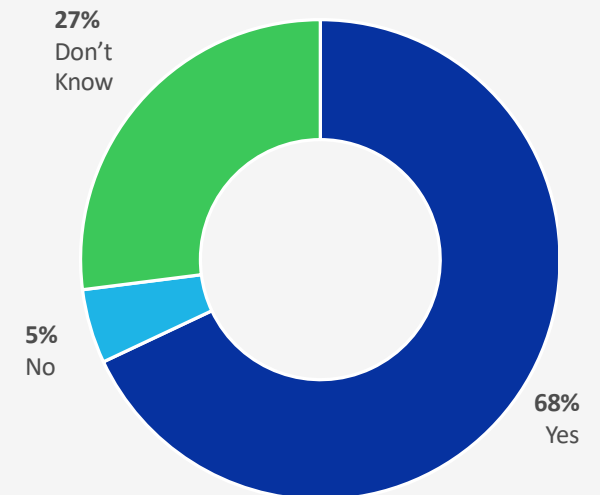
Input	Foundation Model	Output
“Summarize the articles on impact of walking on heart health”	Text-to-text Generate text from simple natural –language prompts for various applications	“Ten thousand steps per day is optimum for maintaining a healthy heart”
“hand soap”	Text-to-embeddings Generate numerical representation of text for finding similarities between words	Numerical representation of “Hand soap” {-0.523, 0.191, 0.871, -0.226...}
“As the golden sun dips below the horizon, casting long shadows across”	Text-to-speech Generates huma quality speech from text	Human quality speech audio
“A photo of an astronaut riding a horse on the moon”	Text-to-image Generate and edit images from natural-language prompts	
	Image-to-text Generate detailed description of image content	“An astronaut riding a white horse with red saddle on the surface of the moon”

Risks & Legal Matters

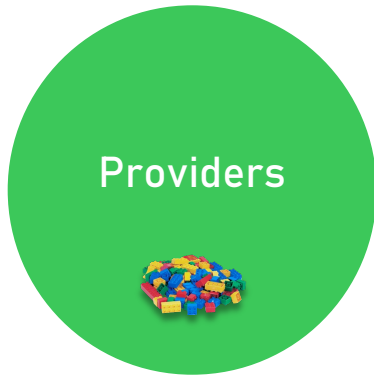
- Training dataset copyright infringement and fair use (Pending lawsuits)
- GenAI output intellectual property ownership
- GenAI can produce inaccurate content (Hallucination)
- Exposure of trade secrets and proprietary information (Shadow AI)
- LLM output verifiability & predictability as new versions are deployed
- Data governance must be done at the source (Partitioning)
- GenAI Pre-Trained models may be biased
- Regulations are coming

Do Benefits Outweigh Risks?

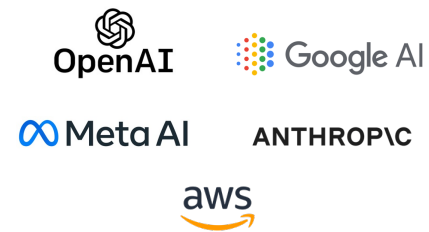
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Generative AI: Market



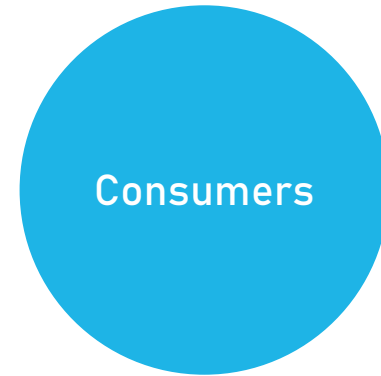
Build and train foundation models from scratch and develop service around it.



Customize pre-trained models for specific domain and application.



Syntax large customers



Consume, Embed, or Extend third-party models, AI services, and AI applications.

EVERYONE

Where Are We Headed Short-term?

Machine Learning

- Models: Context window size over parameters size
- Proliferation of open-source models that will excel on specific use cases
- Cost of training models will go down
- On-edge/local models without connectivity

Market

- Data privacy will continue to be a concern
- Hallucinations will mandate humans in the loop
- High-fidelity fake news explosion
- Hundreds of startups
- Regulations

Businesses

- Generative AI and virtual employees (robo-colleagues) will become mainstream regardless of bans
- ERP vendors will either develop strategic partnerships or take an open stack approach
- Corporate oversight / guardrails will be created to validate and govern usage
- Bots everywhere



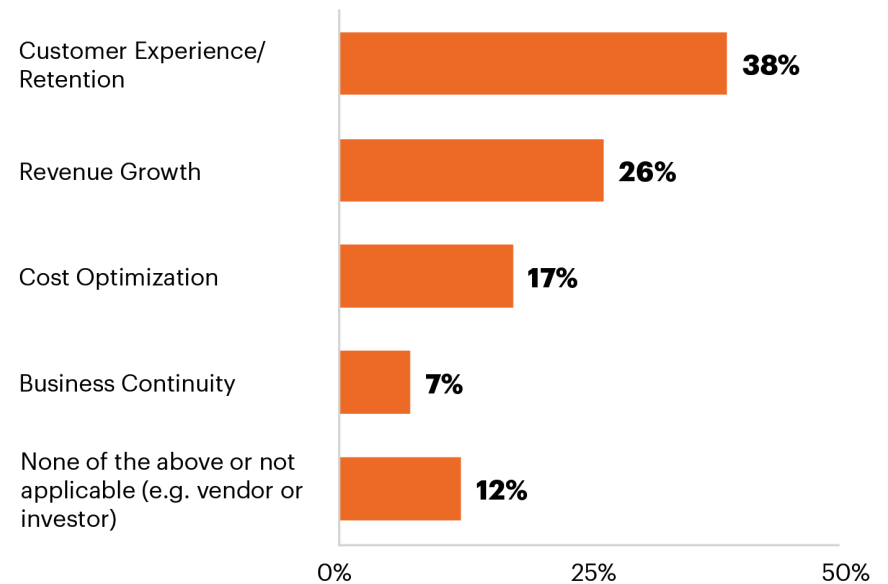
Why Generative AI? Why now?

In today's rapidly evolving business landscape, staying competitive requires harnessing the power of artificial intelligence.

GenAI, the next generation of AI technology, empowers your enterprise to make smarter decisions, automate repetitive tasks, and unlock unparalleled insights from your data.

By embracing GenAI now, you're not just keeping pace with the competition; you're leapfrogging ahead, ensuring efficiency, innovation, and growth.

Primary Focus of Generative AI Initiatives



[gartner.com](https://www.gartner.com)

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Gartner



Generative AI Capabilities and Opportunities



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Challenges

“The main challenges for executives are identifying where and how generative AI fits into existing and future business and operating models, how to experiment productively with GenAI use cases, and how to prepare for the longer-term disruptions and opportunities resulting from GenAI trends.”

Gartner

“Hype Cycle for Generative AI, 2023”



Customer Challenges to Generative AI Adoption

Adoption

- **Strategy:** GenAI is intricate and continually evolving. Keeping up with implementations, advancements, regulations, and emerging technologies can be daunting. Many organizations need help planning their GenAI journey.
- **Data Privacy and Security:** Protecting data and intellectual property requires careful planning and a combination of the right tools. Plus, they may already be using multiple disparate GenAI resources with no consistent governance.
- **Integration:** Integrating GenAI with multiple data sources requires many components including APIs, indexing, data governance. Without a fully integrated platform, these efforts can require significant process and code development to complete.
- **Data Preparation:** Even with GenAI's ability to ingest unlabeled data, there often still are benefits of preparing the data prior to ingesting to gain maximum value.
- **Legal and Ethical Concerns:** Copyright and IP infringement risks arise when GenAI draws on external data.
- **Scaling:** As GenAI adoption grows, scaling becomes necessary.
- **Cost:** Allocating resources efficiently while controlling costs is essential.
- **Talent Acquisition:** The demand for GenAI talent is high, making staffing challenging. With the right staff, all of the other challenges grow.

Common Use Cases

	Development Assistance	Customer Service	Analytics	Knowledge Work
HOW TO USE IT	Automate code development and improve code quality. This can be done by helping to identify programming patterns, suggest code snippets, and even detect bugs in the code. With GenAI studio, rapid development of flows is available through easy drag and drop interface.	Generative AI can simulate near-human quality interactions with customers by powering chatbots or virtual assistants, often engaging queries in real time, and anticipating their needs based on previous interactions. It can also assist human agents by suggesting responses and providing relevant information. Furthermore, it can be used to analyze customer feedback and generate insights to improve customer experience.	The strength of Generative AI lies in its ability to parse huge volumes of data, identify patterns, and generate insights that might be missed by human analysts. In analytics, it can read and understand complex data sets and generate reports and dashboards, present data in human-readable forms, predict trends, and even suggest actions based on the interpreted data.	Generative AI can be utilized to augment information creation and dissemination. AI can summarize long texts, suggest conclusions from data, and even draft articles or reports. By automating these tasks, Generative AI increases productivity and frees up professionals to focus on more complex, high-value tasks.
IMPACTS	This can significantly speed up the software development process, and it can also improve code quality.	This can result in quicker response times, consistent customer support, reduced costs, and improved customer satisfaction.	Enabling better and faster decisions using data can significantly improve the quality of decisions made and improve the overall adoption of evidence-based approaches.	This can improve overall productivity and morale among knowledge workers, who may find themselves challenged to meet date targets.

Manufacturing Use Case Examples

Generative AI has the power to revolutionize the manufacturing industry through significant advancements in productivity and effectiveness.

Product Design & Development

Enhance product design by generating new design ideas. Explore a wide range of design possibilities allowing faster, more efficient innovation.

Customer Service Automation

Improve the customer experience by accelerating the resolution times for frequent interactions through tailored responses.

Enterprise Knowledge Management

Enhance the utilization of knowledge assets by automating the examination of data from diverse sources, including manuals, maintenance records, customer feedback, inventory systems, and others.

Supply Chain Optimization

Keep track of supply levels and forecast future demand to streamline supply chain management, preventing instances of under-stocking or overproduction.

Quality Control

Enhance the process of quality inspection by pinpointing product flaws through the analysis of images sourced from cameras and various sensors, thus facilitating the identification of anomalies.

Predictive Maintenance

Interpret and analyze machinery data to foresee potential failures before they occur, enabling a proactive approach to maintenance.

Retail Use Case Examples

Generative AI has the power to revolutionize the retail industry through significant advancements in productivity, personalization and effectiveness.

Personalized Marketing

Deliver targeted marketing strategies and product suggestions informed by historical customer data, enabling more impactful engagement.

Enhanced Customer Service

Optimize customer service interactions by automating the handling of common inquiries and providing personalized shopping advice via virtual assistance, which allows human representatives to focus on more complex issues.

Store Layout Optimization

Analyze sales and foot traffic data to strategically design store layouts that enhance visibility and accessibility of popular products, thus improving customer shopping experience and maximizing sales.

Supply Chain Optimization

Evaluate sales figures, monitor inventory levels, gauge customer sentiment, and anticipate future demand to enhance supply chain efficiency and delivery performance.

Price Optimization

Regularly analyze competitor pricing, track demand shifts, and study market trends to help adjust and optimize pricing strategies, ensuring competitiveness and alignment with market demand and trends for maximum profitability.

Product Design

Revolutionize retail product design by creating personalized designs, accelerating prototyping, predicting trends, reducing design costs, simulating market responses, and promoting sustainability.

Suggested CIO First Steps

Tech Foundation

- 1 Enable Safe General-Purpose AI**
 - Deploy private Foundation Model
 - Implement general data protection mechanism
 - Release generic virtual employee
 - Load non-sensitive private data
 - Provide private API
 - Publish usage guidelines

Culture

- 2 Create AI-Centric Culture**
 - Identify citizen developers / early adopters
 - Deploy low/no code AI platform
 - Onboard citizen developers
 - Create internal hackathon/contests
 - Publish successes to entice and recruit more citizen developers

Use Cases

- 3 Identify Business AI Opportunities**
 - Educate key functional leaders
 - Explore existing industry use cases
 - Brainstorm and map ideas along strategic goals
 - Identify opportunity candidates
 - Define assumptions for top/bottom line impact
 - Plan POC, Data Governance, etc.

GenAI Adoption Journey



Plan

- Strategy
- Governance
- Define Proof-of-Concept



Protect

- Deploy private virtual agent
- Implement guardrails



Enrich

- Ingest private data
- Deploy data protection



Leverage

- Add GenAI to solutions
- Build new GenAI solutions



Disrupt

- GenAI HyperAutomation
- GenAI Agents



Leveraging Syntax GenAI Services for SAP on AWS



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Services

Industry AI Advisory Workshop



Two-Day Workshop with GenAI and Industry experts to review GenAI concepts, walk through customer challenges, and review Customer specific Use Cases for business improvements.

- Guided exploration of AI
- General AI concepts
- Industry specific use cases
- Project Guidance
- Journey Planning
- Prioritization
- Legal/Ethical Considerations
- Proof of Concept Definition

GenAI Solutions Factory



Access to team of seasoned developers and data analysts who are experts in providing top-tier design services, constructing bespoke applications and integrations.

- Execute on POCs
- Advanced LLM Integrations
- Custom Applications Development and Support
- AI Driven Hyperautomation
- ERP Integrations
- External Data ingesting

Syntax Industry Generative AI Exploration 2-Day Workshop

GOALS

- **Educate** key functional and technology leaders
- **Explore** and **Understand** existing industry use cases
- **Brainstorm** and **Ideate** use cases that fit your business strategy
- **Understand** requirements for the success of your Gen AI initiatives
- **Determine** if Syntax QuickStart Gen AI is right for your organization
- **Plan** your Proof of Concept

DELIVERABLES

- Gen AI **use case candidates** mapped to strategic goals
- Understanding of **business considerations** with Gen AI
- High-level **technology roadmap** for Gen AI enablement
- Plan for **Proof-of-Concept** development and deployment

BENEFITS

- **Identify** and **size** low-hanging fruit ideas
- Ensure cross-functional **alignment**
- **Minimize collision** with vendor's roadmap
- From Hype to **Results**

Through an engaging and highly interactive 2-day workshop, you will learn what you need to know to successfully launch your strategic Gen AI initiatives

Syntax GenAI Platform

Multi-Cloud GenAI Platform



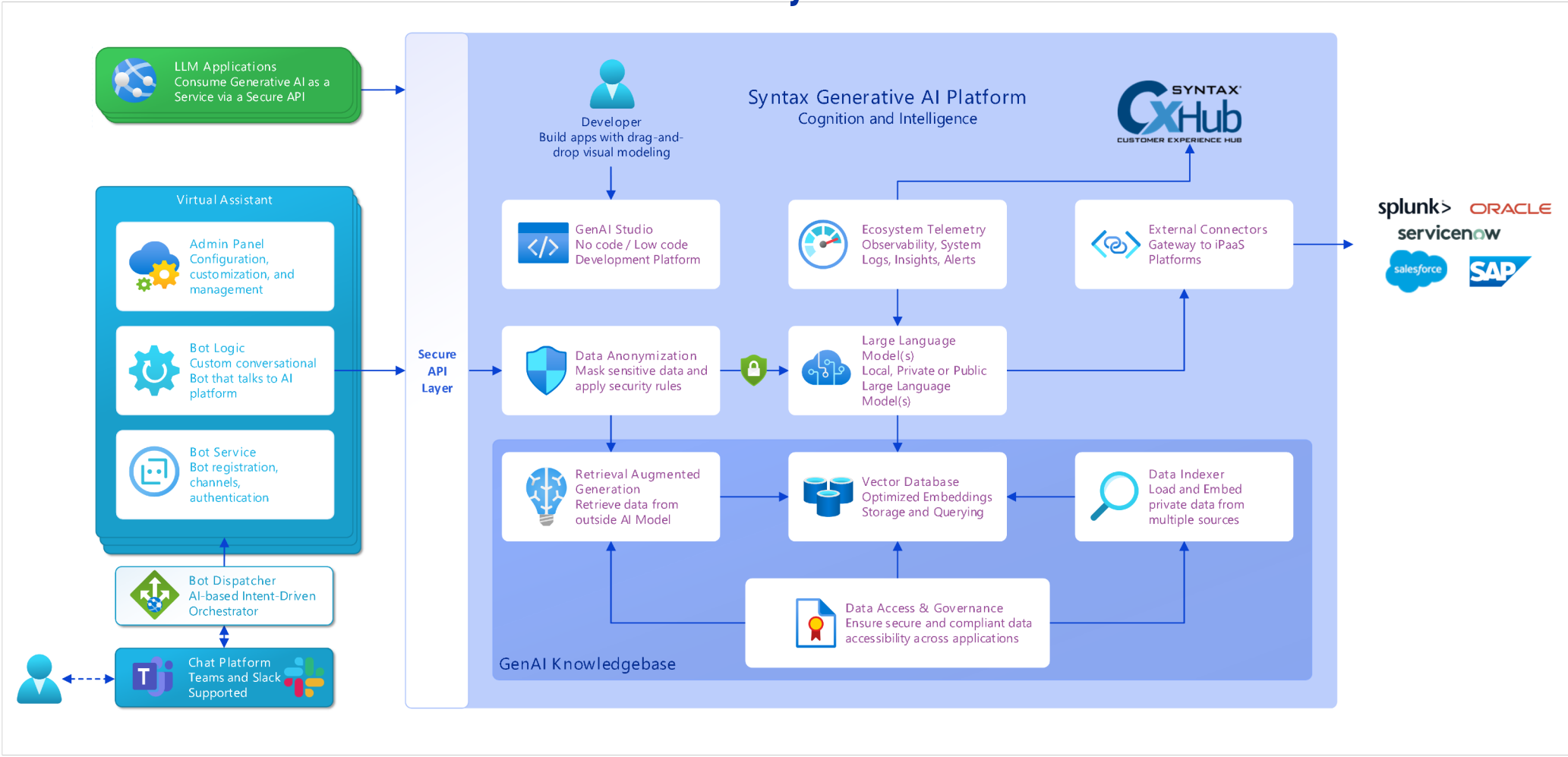
Syntax GenAI provides a complete solution for enablement of Generative AI infused company improvements including:

- Natural Language interaction through white label chatbot
- Support for all major Large Language Models including many open-source
- Fully developed knowledge bases allowing easy integration of customer specific data in a safe, controlled fashion allowing GenAI to have domain knowledge without fear of data leakage
- Robust API endpoint for integration to customer systems
- Elaborate retrieval system and external connectivity allowing full integration into all customer data sources
- Full visibility into the performance of the platform integrated with CxHub

Key Components

- **Large Language Models** — Choice of Large Language Models that best fit your platform and use case
- **Knowledge Base** — Incorporate private data into your Generative AI environment safely and securely leveraging Vector DB, RAG and Data Indexing, and Data Governance services
- **Virtual Assistant** — Chat bot integration with Microsoft Teams or Slack for easy user access to GenAI results
- **GenAI Studio** — Low Code/No Code development platform enabling visual drag and drop modeling for custom app development and flow management
- **Telemetry** — Full visibility into the performance and usage of your GenAI platform integrated with our CxHub
- **External Connectors** — API access to external iPaaS providers

GenAI Platform – External Connectivity to iPaaS



Large Language Models – Deployment Options

Included as component of GenAI Platform

Local LLM

Deployed locally on cloud of choice

- Data handled 100% locally
- Requires GPUs for performance
- Only open models are available
- Difficult to run large models
- Platform needs to be managed
- Pay for compute power

Private LLM

Consumed within Hyperscaler service

- Data handled 100% within your tenant
- Hardware/GPU is abstracted
- Hyperscaler supported models only
- Can run large and proprietary models
- Hyperscaler managed
- Pay hyperscaler usage/consumption

Public LLM

Consumed via API to LLM provider

- Data handled according to terms of use
- Hardware/GPU is abstracted
- Can only run provider models
- LLM accessed via provider API
- Provider manages infra and service
- You pay provider usage/consumption

Syntax Advantage



Syntax and 3rd Party Services



Generative AI solutions do not need to be exclusive. Customers can leverage other platforms for their strengths, such as Microsoft Copilot for its embedded access in Microsoft applications, Amazon Q for its AWS awareness, and SAP Joule for its SAP integration. Our professional services teams can help our customers maneuver through those options.

Syntax GenAI Platform is designed to provide customers a fully architected and functional development and production platform for integrating with their business quickly and easily. Not for replacing all chatbot options available in the market.

Solution Overview

Solution Benefits

Template

Chat with your own SAP Data is provided in form of an adjustable and Best-Practice based template.

Adjustability

Chat with your own SAP Data can be fully adjusted to the needs of your Business scenario

Flexibility

Chat with your own SAP Data can be used from every Browser and from every modern device, within the Cloud, or locally deployed, while online or offline

“

*Provides real-time insights and analytics, enabling you to make **data-driven decisions quickly and effectively**. With live chat, you can instantly access crucial customer data, inventory status, sales figures, and more, all within the context of your ongoing conversation. This not only **streamlines communication and improves productivity** but also **enhances customer service** by providing accurate and timely responses. It's about merging data accessibility with instant communication, a combination that drives sales performance and business growth*

Our Value Proposition

Plug and Play with your SAP Data

Enabling You to leverage the combined Power of Generative AI and your SAP Data, as well as SAP execution

01

Fast Deployment,

due to our existing platform capabilities based on Industry standards

02

Fully Adjustable

to your business case and needs, covering all GenAI capability from data retrieval to transaction execution

03

Based on Open standards

To ensure sustainability in an extremely fast paced market



Leveraging AWS

Developed in a Co-Development

Approach with AWS, Chat with your own SAP Data reflects what GenAI really is about. Innovating according to your needs



Scalability

No matter if You want to rollout chat with your own SAP Data within one or multiple plants, in one or multiple languages, one or multiple ERPs, Our Platform will scale with you – Based on the Power of AWS



Business Scenarios

✓ Talk to your Master data

No more Need looping through the whole material master, contracts, Budgets.. Just Ask GenAI and increase your Business user's efficiency

✓ Execute Transactions

Creation of Purchase requisitions, Approval of Travel Expenses, Time Tracking on WBS Elements... Rethink your Business processes and