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GENERATIVE AI

INTRODUCTION, THINGS TO CONSIDER, AND BUSINESS CASES PART 1 OF 4

by Keith Johnson, Practice Manager, Titan Consulting

Every business article and investment discussion seems to have either a direct reference or indirect reference to Artificial Intelligence. Several platforms track how often companies mention the phrase "Artificial Intelligence" during their company earnings conference calls. But how does AI generally apply to the SAP community and how can we use it to increase the efficiency and efficacy of our SAP solutions to our stakeholders? We will discuss some of this in this four-part series put together primarily by one of our Practice Managers, Keith Johnson. Part 1 will be an overview of AI, Part 2 will discuss some of the most relevant components of AI and high-level business cases, Part 3 will discuss considerations when looking at an AI project, and we will conclude with Part 4, where we will showcase several business cases we have worked with clients to deploy within their SAP ecosystem. – *Warren Norris, Managing Partner*

Introduction:

Generative Artificial Intelligence (GenAI) represents a transformative shift in how machines can autonomously create, synthesize, and innovate. By leveraging advanced models, such as neural networks and deep learning architectures, Generative AI systems can generate new data, whether it be text, images, music, or even complex simulations. This unlocks a wide range of application capabilities across industries, from enhancing creativity and automating content creation to optimizing product designs and advancing scientific research. As AI technology evolves, it raises important discussions around ethical considerations, intellectual property, and the future of human-AI collaboration, making it a critical area for study and strategic development. This white paper explores the fundamentals of Generative AI, its key use cases, and the challenges it presents for both developers and society.

Generative AI — Overview

Generative AI is the latest transformative technology. Although AI would not be possible without previous innovations, such as computers, mobile phones, and broadband, it has become very impactful in the world of technology, from helping a developer with coding to helping a grandmother with writing a poem to her grandchildren. It encompasses concepts such as Artificial Intelligence, Machine Learning, and Deep Learning. To fully grasp Generative AI, it's essential to understand these underlying concepts, as it will drive change across all areas of life.

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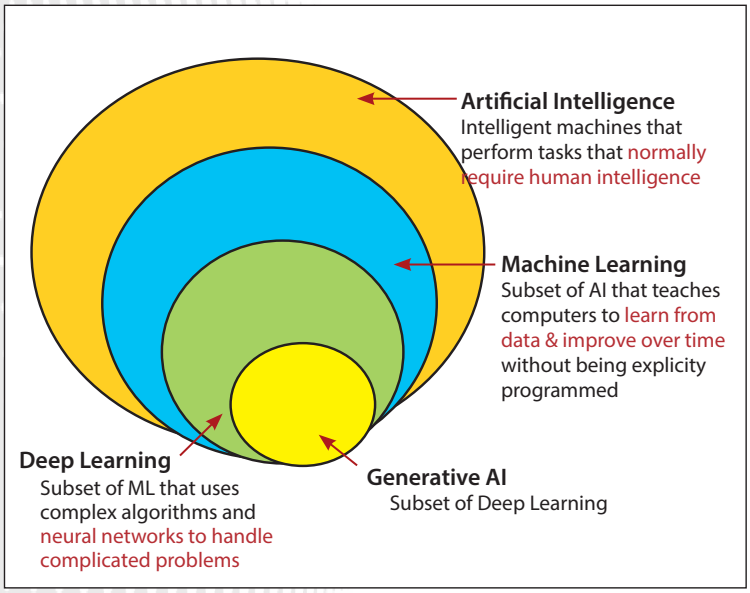
Generative AI — Introduction

Conventional AI focuses primarily on data analysis, predictions, and data categorization. Generative AI takes a few more steps and creates new content, such as text, images, code, and videos. Understanding Generative AI requires a foundational knowledge of AI, including how machine learning works. Examples include ChatGPT for text generation, DALL-E for image creation, and GitHub Copilot for coding assistance. The key aspect of Generative AI is its ability to produce entirely new content. In the next section, we will take a step back to understand AI's underlying foundation.

Generative AI — Foundation

Artificial Intelligence (AI) involves replicating human intelligence in machines, enabling them to perform tasks such as diagnosing diseases, detecting fraud, or Language Processing. **Machine Learning (ML)**, a subset of AI, focuses on creating algorithms that allow computers to learn and make decisions without explicit programming by analyzing vast amounts of data. **Deep Learning,** a further subset of ML, uses neural networks inspired by the human brain to process data through multiple layers, achieving higher accuracy, especially for complex tasks like text or image generation. **Deep Learning (DL)** requires a lot of computing power to analyze data, which allows DL to process the data, enhance the data, and predict additional data. Because of the advances in computing, Generative AI is more widespread today.



Generative AI — Explore ChatGPT

ChatGPT (Chat Generative Pre-Trained Transformer) is a Large Language Model (LLM), developed by OpenAI. It is designed for natural language understanding and generation, specifically in a conversational context, allowing it to excel in understanding and generating human language. It is designed for natural language processing, allowing it to comprehend questions, understand context, and generate accurate responses. Unlike earlier systems, LLMs can handle conversational context, remembering previous interactions so it is able to provide relevant followup answers. This conversational ability, combined with high accuracy, makes tools like ChatGPT stand out and explains their rapid adoption.

Fun ChatGPT Facts:

- ChatGPT is a Generative AI application that generates human-like text, answers questions, completes sentences, translates languages, performs sentiment analysis, and in later versions can generate images.
- Developed by OpenAI with significant investment from Microsoft, it offers a web portal for end users at chat.openai.com.
- Trained on billions of documents, GPT-3 included 570GB of text data, covering almost all of Wikipedia, blogs, news articles, and more.
- It is based on the Generative Pre-trained Transformer (GPT) architecture, a type of neural network, which is a method in AI that teaches the computer to process data like the human brain.
- GPT-1 was created in 2018, primarily for developers via APIs, and was not widely known by end users until November 2022 when a simple interface was developed for typing questions and receiving answers.
- ChatGPT has implementations for both regular end-users and core developers.
- Generative AI, including ChatGPT, is expected to require everyone, from developers to salespeople, to learn and integrate it into their daily work.