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THE LEADER'S GUIDE TO GENERATIVE AI FOR BUSINESS

CAPTURING THE BENEFITS & DETERMINING ROI FOR ENTERPRISE GENAI SOLUTIONS

Google Cloud Partner

WELCOME

Generative AI is one of the most exciting and rapidly developing areas of artificial intelligence. This ebook, "The Leader's Guide to Generative AI," is designed to help you understand this technology and its potential impact on your business.

In this ebook, you will learn about the basics of generative AI, including how it works, the different types of generative AI models, and the potential applications of this technology. You will also learn about the challenges and opportunities associated with generative AI, and how you can prepare your business for this technology.

I am optimistic about the future of generative AI. I believe that this technology has the potential to revolutionize the way we work and live. However, I also believe that it is important to be aware of the challenges and opportunities associated with this technology.

I hope that this ebook will help you understand the immense potential of generative AI and how it can benefit your business.

Sincerely,
Mike Masters SVP, ClearObject

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CHAPTER 1

UNDERSTANDING GENERATIVE AI

To the casual observer, it may seem like Generative AI came out of nowhere, something dreamed up in science fiction that suddenly became a reality. But GenAI has been in development for decades. The recent surge in public awareness around Generative AI (GenAI) was a result of significant advancements in various technologies combined with the availability of seemingly limitless storage and faster, more powerful data processing through the cloud. It builds upon advancements in machine learning, deep learning, and artificial intelligence, including the development of neural networks, which allow computers to learn and make predictions based on large datasets.

Generative AI refers to a class of artificial intelligence systems that have the ability to generate new content, such as images, videos, text, and even music. Large Language Models, or LLMs, are trained on vast amounts of data and are able to create items comparable to human-generated content.

The recent development of transformer architecture, paired with the increased affordability of computing power allows us to analyze enough data to begin to infer the context and intent of that data, much as the human brain does. By understanding the underlying patterns and structures within the data, GenAI can generate new content that is remarkably similar to the training data, while also uncovering fresh perspectives.

Businesses are already experimenting with how they can use GenAI. ChatGPT reached 100 million monthly users within two months of launch, and this is just one of the many GenAI tools available. New companies are springing up to dive deep on single AI use case applications, while other companies are taking a broader approach to the benefits of AI. According to McKinsey, Generative AI could add the equivalent of $2.6 trillion to $4.4 trillion of value to businesses annually

The most successful businesses will tap into AI and create customized solutions that solve for the individual business outcomes they care about. The vast majority of these solutions will fall into one of three key use case categories which we'll cover in more depth in Chapter 3. Until then, here are a few specific examples of implementations in key industries.

INDUSTRY EXAMPLES

In Healthcare, Generative AI algorithms are assisting in the creation of personalized treatment plans based on patients' genetic data and medical history, leading to more effective and targeted care.

Manufacturing leaders are harnessing the power of GenAI to process production data, answer natural-language questions, reduce waste and increase safety.

In Financial Services, AI solutions are being implemented to summarize vast amounts of historic data and reporting, analyze risk, and reduce fraud.

Retail is using GenAI to better understand store traffic and product displays while creating targeted customer interactions based on shopper history.

"The technology could generate value for the retail and consumer packaged goods (CPG) industry by increasing productivity by 1.2 to 2.0 percent of annual revenues, or an additional $400 billion to $660 billion."

Source: McKinsey, The Economic Potential of Generative AI: The Next Productivity Frontier, 2023

At ClearObject, a trusted Google Cloud Enterprise GenAI Launch Partner, our point of view is that Generative AI should be used to make us more productive and enhance our creativity. GenAI is not a replacement for the professional workforce, though it may change the way we work thanks to advances in efficiency and problem-solving. GenAI is a tool all professionals can use.

CHAPTER 2

HOW GENERATIVE AI DIFFERS FROM OTHER AI APPROACHES

GENERATIVE AI VS. PREDICTIVE AI

You may be thinking that you've been hearing about AI for years, what is the big deal? Most likely you've been hearing about applications around Predictive AI. Generative AI and Predictive AI are two distinct branches of artificial intelligence that serve different purposes and exhibit contrasting functionalities.

Generative AI	Predictive AI
• Focuses on creating new content that resembles the training data while incorporating elements of novelty and creativity. • Capable of generating original and diverse outputs that do not exist in the training dataset.	• Focuses on making accurate predictions or forecasts based on existing data patterns. • Aims to determine probable outcomes or trends given a set of inputs • Relies on statistical analysis, pattern recognition, and machine learning algorithms to make predictions.

EXAMPLES OF GENERATIVE AI TOOLS

These are just a few examples of generative AI. There are many other generative AI models and tools available, each with its own strengths and weaknesses. As generative AI technology continues to develop, we can expect to see even more innovative and creative applications of this technology in the future.

ChatGPT

ChatGPT is a chatbot developed by OpenAI that can generate text, translate languages, write different kinds of creative content, and answer your questions in an informative way.

DALL-E 2

DALL-E 2 is an image generation tool developed by OpenAI that creates realistic images from text descriptions. It is trained on a massive dataset of images and their associated text descriptions.

Bard

Bard is a large language model developed by Google AI that can generate text, translate languages, write different kinds of creative content, and answer questions in an informative way. It is trained on a massive dataset of text and code.

EXAMPLES OF PREDICTIVE AI

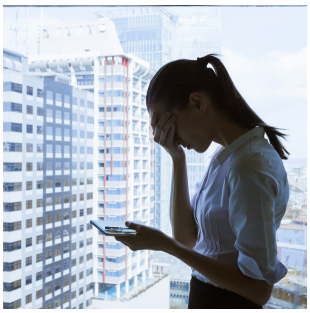
There are many practical applications of predictive AI technology, such as anticipating customer behavior, optimizing supply chains, and improving healthcare outcomes. Three popular and effective use cases are described below. As predictive AI technology continues to develop, we can expect to see even more innovative and beneficial applications of this technology in the future.

Fraud detection

Predictive AI can identify fraudulent transactions by analyzing patterns of customer behavior. For example, a bank could use predictive AI to identify customers who are likely to commit credit card fraud by looking at their spending habits, the types of merchants they use their cards with, and the time of day they make purchases.

Customer churn

Predictive AI can be used to predict which customers are likely to cancel their subscriptions or memberships. This information can be used to target these customers with special offers or incentives to keep them from churning.



Risk assessment

Predictive AI can be used to assess the risk of a particular event occurring, such as a loan default or a customer defaulting on their mortgage. This information can be used to make better decisions about lending money or extending credit.

CHAPTER 3

HIGH-LEVEL USE CASES FOR GENERATIVE AI

In Chapter 1 we mentioned three common use cases for Generative AI, which we present here. There are countless variations on these use cases, specific to industry and desired business outcomes, but this is a terrific place to start to understand the benefits of GenAI.

1. MAKING COMPLEX DATA INTUITIVELY ACCESSIBLE

Data is everything. Informed decisions are made by sourcing, uncovering, analyzing, and re-analyzing data. In the last 20 years, data discovery and collection have become significantly more straightforward, but as data repositories grow, interpreting that data becomes more challenging and time-consuming. This is where GenAI comes in. AI can makes complex data more intuitively accessible, such as the following:

6 Ways to Make Complex Data More Intuitively Accessible	
Document Search & Synthesis	Summarize the contents of the most relevant documents for your needs
Regulatory Compliance Automation	Interpret regulatory policy and documents to identify operating procedure violations
Business Process Automation	Automate low-value but necessary recurring business processes backed by data
Product & Content Recommendations	Increase the accuracy of product, content, and next step recommendations
Research Acceleration	Complete research faster and more efficiently across disparate resources and synthesize the findings into a coherent summary.
Product & Content Catalog Discovery	Find the most relevant products and content based on natural language queries

2. MAKING ONLINE INTERACTIONS MORE CONVERSATIONAL

In today's rapid-paced world, customers, investors, even prospective employees will reach out online and expect immediate, high-quality, natural interactions with your business. Chatbots and online interactions of the past were trapped in structured call and response patterns that left the inquirers frustrated. GenAI is already helping some organizations improve their ability to communicate in a few ways:

WEBSITE NAVIGATION

Find information from a website via conversational queries, not industry-specific technobabble. Sometimes it feels like you need to be an expert or already know the answer to find the answer. GenAI can answer more intuitive queries to improve navigation.

INTRA-KNOWLEDGE Q&A

Provide accurate answers quickly from multiple internal knowledge sources without escalating to other employees. Even the most well-documented products and processes can't be understood by everyone. GenAI can help answer CS and Sales questions without pulling resources from the Product team.

CUSTOMER SERVICE AUTOMATION

Receive and handle customer requests quickly and accurately. Some questions are simple enough to be handled by an automated response, but customers don't want to feel like they are being responded to automatically. GenAI can improve response quality for lower-tier questions and free valuable resources to tackle the more complex issues.

AI can lift productivity for customer support by up to 40 percent.

-"The economic potential of GenAI", McKinsey, June 2023

3. GENERATING CONTENT AT THE CLICK OF A BUTTON

While true innovation will always come from the human mind, it is hard to ignore that Generative AI is getting really, really good. AI can be an extremely helpful tool for building early drafts, visualizing new concepts with little effort, and increasing efficiency for all professionals.

Marketers are using GenAI to draft email campaigns and create unique images and music for advertising. Design teams can iterate quickly on multiple ideas without building numerous prototypes.

It can make us all better at our jobs by supporting us in a few powerful ways:

3 Ways GenAI Helps Generate Content	
Document Generation	Write new documents based on other existing resources
Creative Assistance	Empower creative teams to create and iterate on bespoke content
Developer Efficiency	Complete and augment code to maximize the efficiency of engineering and developer teams

A study conducted by the National Bureau of Economic Research (NBER) found that customer support agents using a generative pre-trained transformer (GPT) AI tool saw a nearly 14% increase in their productivity.

CHAPTER 4

ADDITONAL GENERATIVE AI USE CASES

In today's rapidly evolving business landscape, enterprises are constantly seeking innovative solutions to gain a competitive edge. One area that holds immense potential is the integration of Vision AI and GenAI capabilities. This chapter explores the transformative power of Vision AI paired with GenAI and its applications in various enterprise domains, including product design and ideation, advertising, data augmentation, image similarity search, and Neural Radiance Field applications (NeRF) for digital model generation.

PRODUCT DESIGN AND IDEATION

Vision AI and GenAI technologies have revolutionized the way enterprises approach product design and ideation. By leveraging advanced computer vision algorithms, businesses can generate realistic digital prototypes of products, allowing for virtual exploration and evaluation before physical production. This enables enterprises to save time and resources while ensuring optimal designs that align with customer expectations.

ADVERTISING

Creating compelling advertisements requires a deep understanding of consumer preferences. GenAI's copy image generation capabilities assist enterprises in generating visually captivating ad copies. By analyzing vast amounts of data, including text, images, and user behavior, Vision GenAI can create high-quality advertising content that resonates with the target audience, leading to increased engagement and conversion rates.

DATA AUGMENTATION

One of the challenges in developing AI models is the scarcity of high-quality training data. GenAI addresses this issue by offering powerful data augmentation techniques. By synthesizing realistic images, enhancing existing data, or generating variations, Vision GenAI augments the training dataset, improving the robustness and accuracy of AI models. This enables enterprises to achieve better performance even with limited original data.

IMAGE SIMILARITY SEARCH

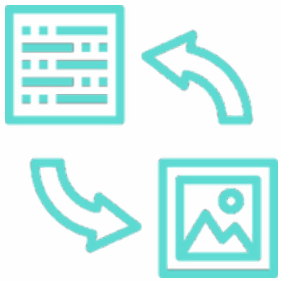
In today's visually-driven world, enterprises often deal with vast image databases. GenAI's image-to-image similarity search capabilities enable efficient image retrieval based on visual similarity. By utilizing advanced algorithms, enterprises can quickly find images that closely resemble a given input image, facilitating tasks such as content management, product recommendation, or image-based search engines.

NEURAL RADIANCE FIELD APPLICATIONS (NeRF)

NeRF technology represents a breakthrough in the creation of digital models from real-world images. Enterprises, such as real estate agencies, can leverage GenAI to generate immersive virtual experiences, similar to Matterport, for showcasing properties. By capturing the intricate details of a physical space, including lighting, textures, and geometry, Vision GenAI enables potential buyers to explore properties remotely, resulting in improved customer engagement and informed decision-making.

MULTIMODAL GENERATIVE AI MODELS

Enterprises are increasingly recognizing the value of multimodal generative models, which enable the encoding of data across different modalities. By leveraging these models, businesses can bridge the gap between textual and visual information, opening up new possibilities for content generation, data analysis, and customer engagement. One application of multimodal generative models is text-to-image generation. With this capability, enterprises can input textual descriptions or prompts and generate corresponding visual representations. This is particularly valuable in industries such as e-commerce, advertising, and creative design, where businesses can create visually compelling content based on textual input, accelerating the content creation process and enhancing the overall user experience.



Multimodal generative models also facilitate image-to-text generation. By analyzing visual content, models generate textual descriptions, captions, or even complete narratives that accurately capture the visual elements of an image. This has significant implications in areas like image tagging, content classification, and accessibility, where enterprises can automatically generate descriptive text for images, making them more searchable and inclusive. Furthermore, in industries like social media and influencer marketing, multimodal generative models enable the generation of engaging captions or narratives for images, enhancing storytelling and brand communication strategies.

The integration of multimodal generative models empowers enterprises to harness the synergies between text and image data, unlocking new opportunities for creativity, automation, and data-driven decision-making. By leveraging these models, businesses can streamline content creation, improve searchability and accessibility, and enhance user experiences across various platforms and industries. As the field of multimodal generative models continues to advance, enterprises will undoubtedly find even more innovative ways to leverage these models to drive their businesses forward.

This is just the beginning. New use cases for GenAI and Vision AI are being created at unprecedented and accelerating rates. Organizations are using AI to create highly customized solutions that drive their preferred business outcomes. How do you plan to integrate AI?

CHAPTER 5

IMPLEMENTING ENTERPRISE GENERATIVE AI

Generative AI seems to offer endless possibilities, so how does a business identify which AI projects to explore first? According to KPMG's 2023 study, 65% of executives believe Generative AI will have a high or extremely high impact on their organization. Despite this, many of the same executives say they are not ready to pursue GenAI because they lack a clear business case.

To get started, the first step is to thoughtfully identify suitable use cases and domains within an organization for Generative AI deployment. Taking the time to discover which questions were once thought unanswerable, then gaining alignment from key stakeholders will dramatically increase the likelihood of building an ROI-positive AI solution.

There are countless possible uses for GenAI, and enterprises need to focus their efforts on those projects that will have the most significant impact. For each potential AI project, the business should consider the following questions:

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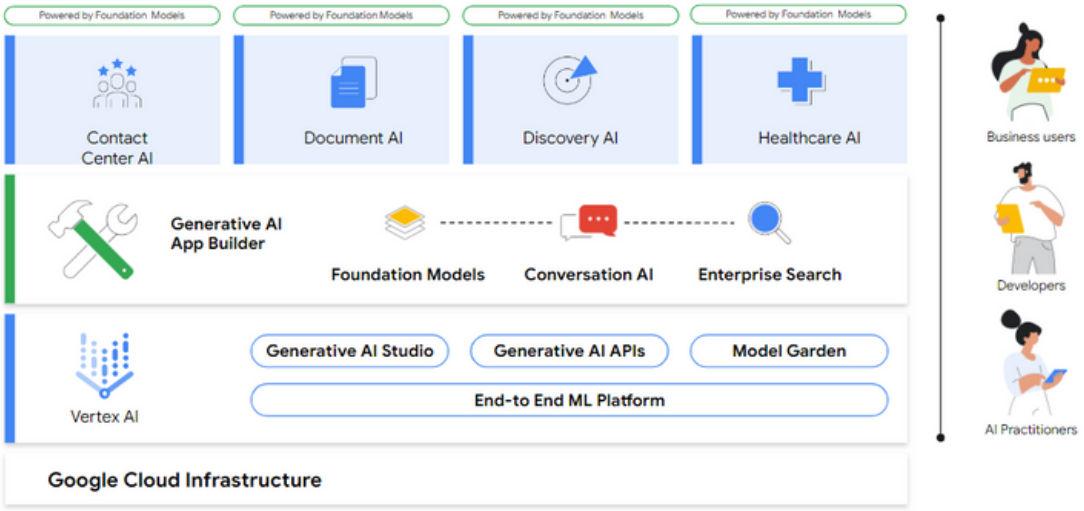
HOW TO ASSESS THE VALUE OF AI DEVELOPMENT

Once you've identified the right solution to test, a Proof of Concept can validate the feasibility of the solution. AI tools are making it easier to build new, custom AI solutions, but you still need to make sure you have the right talent to properly design and test new ideas.

To assess the value of AI development, BCG breaks it down into a simple 10-20-70 formula. 10% of the development effort is creating an adequate machine-learning model—an algorithmic set of rules or instructions to help the system learn on its own; 20% involves having the right, unbiased, high-quality data; and 70% is dependent on creating new business processes or transforming the way business functions operate.

[2] Boston Consulting Group, The CEO's Guide to the Generative AI Revolution March 2023

With the variety of platforms available, it is recommended you find someone with expertise on at least one of the leading platforms, such as Google's Enterprise AI ecosystem, to quickly pull together a lightweight and effective POC.



Source: Vertex AI is the core of Google's AI ecosystem

In the next chapter, we'll discuss helpful ways to estimate the ROI on your proposed GenAI solutions.

CHAPTER 6

DETERMINING ROI FOR GENERATIVE AI

Determining the Return on Investment (ROI) for a proposed project involves evaluating the potential benefits and costs associated with the project. Here are some key steps to help you determine the ROI:

DEFINE THE PROJECT GOALS

Clearly outline the specific objectives and outcomes you expect to achieve with the Generative AI project. Common approaches where GenAI has shown strong results include improving efficiency by identifying previously unknown opportunities, enhancing creativity with brainstorming or rapid prototyping, and generating new revenue streams thanks to new insights. Having well-defined goals will help you assess the project's success and measure its impact.

IDENTIFY POTENTIAL BENEFITS

Consider all of the potential benefits that the generative AI project can bring to your organization. These could include increased productivity, cost savings, improved customer experiences, or new market opportunities. Quantify these benefits where possible, such as estimating the time or cost savings that can be achieved.

ASSESS COSTS

Determine the projected timeline for implementing the generative AI project. Take into account the time required for data gathering and preprocessing, model development and training, testing and validation, and integration with existing systems or processes. A longer implementation timeline may increase costs and potentially impact the ROI. Working with a trusted AI partner can help shorten this timeline.

ESTIMATE IMPLEMENTATION TIMELINE

Determine the projected timeline for implementing the generative AI project. Take into account the time required for data gathering and preprocessing, model development and training, testing and validation, and integration with existing systems or processes. A longer implementation timeline may increase costs and potentially impact the ROI. Working with a trusted AI partner can help shorten this timeline.

CALCULATE ROI

To calculate the ROI, use the formula: (Net Benefit - Project Cost) / Project Cost x 100. Subtract the total costs associated with the project from the total benefits obtained and divide by the total project cost. Multiply by 100 to express it as a percentage. A positive ROI indicates that the project is expected to deliver more benefits than the investment made.

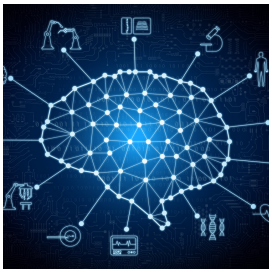
CONSIDER INTANGIBLE FACTORS

While ROI calculations primarily focus on financial aspects, don't overlook intangible benefits that may be more challenging to quantify. These could include improved brand reputation, enhanced innovation capabilities, or competitive advantage gained through the generative AI project. Though harder to measure, these factors can contribute significantly to overall business success.

ROI calculations for generative AI projects can be complex due to factors such as uncertainty, long-term impacts, and the evolving nature of AI technology. Conducting thorough research, consulting with domain experts, and analyzing relevant case studies can provide valuable insights to help make accurate assessments of potential ROI.

WORK WITH CLEAROBJECT TO DISCOVER YOUR USE CASE

Through our partnership with Google Cloud, ClearObject is expanding our consulting and technology delivery offerings to help clients understand and maximize the value proposition of generative AI across their businesses:



GENAI DISCOVERY WORKSHOP

A highly interactive one-day workshop where ClearObject AI experts help your executives leverage design-thinking principles to identify ideal target use cases, estimate potential ROI, and define success metrics.

GENAI PROOF OF CONCEPT DEVELOPMENT

A 2 to 4-week project to test the feasibility of the use case:

1) Create and test a high-fidelity prototype with real customers.
2) Validate potential opportunities & solutions.
3) Deliver a solution architecture and SOW to scale the GenAI solution in their business.

GENAI PRODUCTION DEPLOYMENT

ClearObject's deep enterprise AI deployment expertise with Agile Product-Team-as-a-Service (PTaaS) works sprint-by-sprint alongside customers to develop, deploy, and scale GenAI solutions across their business.

GENAI MANAGED SERVICES

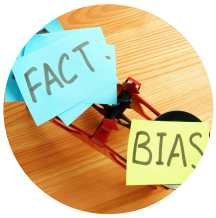
Customizable ongoing GenAI solution support, monitoring, and optimization for customers.

CHAPTER 7

CHALLENGES AND CONSIDERATIONS

Once a successful PoC is completed, it is time to prepare for a full launch of the GenAI solution along with a plan to manage the AI throughout the product lifecycle. Since AI is evolving, and data is continually being gathered and improved, it is important to monitor and fine-tune your approach over time. Some things your team needs to monitor closely include (but are not limited to):

ITEMS TO CONSIDER:



BIASED DATA

AI is based on existing data. If underlying data contains unintended bias, the end results will also contain it.

TRUST

How can the business ensure the accuracy of generative AI outputs and maintain user confidence?

ENERGY USE

AI use of LLMs requires a tremendous amount of computing power. What steps can you take to limit the carbon footprint of AI?

PRODUCT LIABILITY

What health and safety mechanisms need to be put in place before a generative AI-based product is taken to market?

INTELLECTUAL PROPERTY

Public-facing AI tools include your requests and data as part of the LLM. How will you prevent the inadvertent breach of third-party copyright in using pre-trained foundation models?

WHAT'S NEXT?

Generative AI presents a wealth of opportunities for businesses to unlock their creative potential, drive innovation, and optimize processes. By understanding the fundamentals of Generative AI, exploring diverse use cases, distinguishing it from other AI approaches, and effectively measuring ROI, organizations can embark on a successful journey toward implementing Enterprise Generative AI.

With the right strategies, resources, and considerations, businesses can harness the transformative power of Generative AI to stay ahead in today's dynamic market landscape.

Leaders who are prepared to reimagine their business models—identifying the right opportunities, organizing their workforce and operating models to support generative AI innovation, and ensuring that experimentation doesn't come at the expense of security and ethics—can create long-term competitive advantage. [3]

3 Boston Consulting Group, The CEO's Guide to the Generative AI Revolution, By François Candelon, Abhishek Gupta, Lisa Krayer, and Leonid Zhukov, March 2023

ABOUT CLEAROBJECT

ClearObject has been selected as a Google Cloud Enterprise GenAI Launch Partner to help businesses navigate this rapidly evolving technology through discovery workshops, proof of concept design, product launch, and ongoing support.

ClearObject has more than a decade of experience helping businesses turn data into valuable insights and tangible outcomes. Our team of experts collaborates with you to create bespoke solutions that enhance efficiency, output, safety, and profitability across a range of industries and technologies including Generative AI, Edge-based Artificial Intelligence, Computer Vision, Machine Learning (MLOps), Internet of Things (IoT), and Cloud.

Contact us: experts@clearobject.com

ClearObject AI Offerings

Generative AI Discovery Workshops

Interactive workshops to identify and design high ROI proof of concept for your desired outcomes

Vision AI Solutions for Manufacturing

ClearVision solutions to improve quality, reduce waste, and provide insights into processes

Data Science & Software Development Services

Experienced developers help design, build, launch and maintain bespoke solutions