



AN ENTREPRENEUR'S GUIDE TO UNDERSTANDING AND LEVERAGING GENERATIVE AI, NOW AND IN THE FUTURE

ARTIFICIAL INTELLIGENCE (AI) – OR, MORE SPECIFICALLY, THE NEWEST VERSION OF THIS TECHNOLOGY, GENERATIVE AI – IS TRANSFORMING THE WAY WE COMMUNICATE, THE WAY WE WORK, AND THE WAY WE LIVE.

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I. INTRODUCTION: A POWERFUL PRODUCTIVITY TOOL

For entrepreneurs, generative AI is both a potent source of disruption and a source of unbridled opportunity. The technology is changing the way people approach and execute a wide range of important functions within a business. It's the foundation for products and platforms that are reshaping the way whole industries operate.

And that reshaping is happening fast. Gen AI is expanding at a pace that is, arguably, faster than any technology that came before it. In a 2023 survey of 1,000 small-business owners, 25% said they are using or testing gen AI tools, such as the popular conversational AI chatbots ChatGPT or Google Bard. Two-thirds said they will try gen AI by the end of 2024.

60% of those small-business owners believe that gen AI will dramatically change their business within the next five years.ⁱ When entrepreneurs are asked how their businesses are most likely to be impacted by gen AI, five different areas are cited by at least 40%: planning/strategy, accounting and finance, customer communications, sales and marketing, and analytics. Indeed, it is difficult to imagine an aspect of business that won't be touched by gen AI in the future.

"The greatest risk is falling behind," explains Andrei Hagi, associate professor of information systems at Boston University's Questrom School of Business. "This is an incredibly powerful tool that can be used by any worker to improve their productivity."

This guide will explain how gen AI works, how entrepreneurs can begin using the technology in an efficient, low-cost way, and what the future holds for this dynamic technology as it becomes a common element in many areas of our lives.

2. UNDERSTANDING GEN AI

Even as generative AI has become a popular buzzword uttered in boardrooms and at breakfast tables, many people are hazy on exactly what the technology is. In one survey, just a third of small-business owners were confident that they could explain to a friend what gen AI was.ⁱⁱ

To understand generative AI, it can be useful to consider the versions of artificial intelligence that preceded it. Traditionally, AI was used to process and organize existing data. These machine-learning models made predictions based on data. For example, an AI model could assess which actions demonstrated a likelihood of credit card fraud or forecast demand for retail products to keep inventory at optimal levels.

Gen AI, in contrast, is a set of technologies that generate new content, such as text, images, audio, and video. "Gen AI can provide huge productivity gains by helping write or create sales pitches, emails, marketing campaigns, internal memos, and presentations," Hagi says. The general public was mostly unaware of generative AI until November 2022. In that month, ChatGPT, a free chatbot that can generate a solid answer to virtually any question, was released. Within five days, a million people signed up to use it. In less than two years, gen AI had 77.8 million users, an adoption rate that was almost twice as fast as smartphones and tablets.ⁱⁱⁱ The technology quickly became a worldwide phenomenon, as people marveled over its ability to produce software code and even write jokes.

Even before people heard the word ChatGPT, they were probably using gen AI without realizing it. When Gmail or some other software program does an auto-complete for you, you've just experienced gen AI.

3. HOW IT WORKS

Gen AI is based on a series of technologies, many of which have seen large advances in the past half decade.

Gen AI uses a technology known as “deep-learning.” This technology is made up of computer systems called artificial neural networks that are designed to mimic the structure and function of the human brain. Neural networks improve as they learn, similar to how our brains improve based on experiences and exposure to information.

These networks are fed huge amounts of existing data, such as images, text, or computer codes. The networks look for patterns within that data. As the networks analyze more data, the networks see more and deeper patterns in them. Those patterns are then used to produce new content.

Traditional AI tools were developed for one specific task, such as recommending products to customers based on their previous purchase history. Gen AI, in contrast, uses a type of neural network called foundation models that make gen AI capable of being applied to many different tasks.

ChatGPT allows almost anyone to converse with gen AI in natural language by simply typing in a question. As with smartphones, people can intuitively begin using gen AI and derive benefits from it without a significant amount of training, education, or understanding of how it works.

So, fundamentally, gen AI leverages many new and recently improved technologies to find patterns in large amounts of data, and then provides an easy way for virtually anyone to create new text, video, images, computer codes, and songs based on those patterns.

4. HOW BUSINESSES ARE USING—AND BENEFITING FROM—GEN AI RIGHT NOW

While gen AI only came into existence recently, companies are already finding many novel and important ways the technology can boost productivity.

The technology can also be used to improve customer-facing services. One example is the building of a chat-based interface for software products using publicly available Large Language Models (LLMs), the technology behind gen AI chatbots like ChatGPT that gives the tools such proficiency with language.

“Building your own chat-based interface can replace traditional, complicated drop-down menus that no one remembers,” Haigu adds. Indeed, some small businesses are already seeing a bottom-line payoff from their use of gen AI for such purposes. The owner of Omni

Business Intelligence Solutions, a boutique business consultancy, targeted gen AI at parts of her business that were the most time-consuming, like marketing and preparing proposals. She used ChatGPT to create blogs and articles to generate personalized business proposals. Handing off these tasks to gen AI freed up enough of her time to pitch new clients. The result was \$128,000 in new contracts from December to March, an 80% increase from a comparable period the year before.^{iv}

Here are a few other ways gen AI is helping entrepreneurs today:

Laying Down the Law. Alexi, a company co-founded by a Canadian lawyer and an aerospace engineer, is reshaping how law firms conduct legal research and services. Alexi is looking to introduce AI into every step of legal workflow. Thousands of law firms in North America have already embraced Alexi for numerous tasks. Alexi can help with argument brainstorming, such as identifying relevant legal issues that can bolster a case. The gen AI assistant can generate high-quality legal memos in only a couple of minutes, much faster than lawyers can do manually and with fewer errors.

Making Smart Financial Decisions. Small businesses have a lot of financial information to keep track of – from identifying top-selling products, to uncovering spending anomalies to finding cash-flow hot spots. Intuit Assist, a gen AI tool from the maker of QuickBooks, helps small businesses make informed decisions on, as well as adapt and react to a host of situations like this.. By simply asking the gen AI tool questions like “How many of my invoices are overdue?” small business owners can derive deep insights from the technology. Intuit Assist can also be leveraged for Mailchimp, the company’s popular email marketing platform. For example, the gen-AI assistant can help small businesses create, fine-tune, and measure their marketing campaigns.

Personalizing Learning. Chegg, an online education company, uses gen AI to help provide personalized learning assistance for students. Students can input a question in many different forms into the company’s CheggMate solution – as written text, a photo, a math query, or a diagram, for example. The students can ask follow-up questions, break down the steps to solve problems, and drill down into concepts they want to understand better. In addition, CheggMate provides things like instant quizzes and recommendations for helpful content tailored to students’ individual needs. By using practice tests and flashcards, CheggMate creates a feedback loop for how each student is doing. This allows the system to adjust the pace and content of the instruction for each student. In a recent study, 77% of Chegg customers said they are excited by AI chat-based learning support.^v

5. BUILDING YOUR OWN AI TOOLKIT

Hagiu says that using publicly available AI tools will soon become as essential to business as using the Internet was in the 1990s. If you haven't dipped your toe in the gen AI waters yet, here are some key gen AI platforms that entrepreneurs should become familiar with.

ChatGPT. For its millions of users ChatGPT is almost synonymous with gen AI. The technology can code computer programs, check for bugs, draft emails, compose music, summarize podcasts and presentations, solve math problems, do search engine optimization, write blogs, and conduct market research for products.

Claude AI. This gen AI app isn't shy about touting its capabilities: "If you can dream it, Claude can help you do it." Claude can process large amounts of information, brainstorm ideas, generate text and code, coach you through difficult situations, and help simplify your busy work. The Claude context window can accept up to 75,000 words, making it ideal for tasks like analyzing long articles.

Bard. Like other gen AI search engines, Google Bard provides in-depth responses to questions. It will also generate blogs, images, and video scripts for your marketing, produce crisp ad copy, or identify keywords that you can use for pay-per-click advertising or search engine optimization.

Perplexity AI. At first glance, this tool appears to be another gen-AI-fueled chatbot that does Internet searches. Perplexity's differentiation is having its own search engine that scrapes the latest information off the internet. It also cites the sources it uses to produce its responses. As a result, you have the most up-to-date information in a way that's easy to vet.

Dall-E 2. Want to generate images for a newsletter? Just describe the image you want to see – say, a bear dancing through a forest of trees made from lollipops – to this gen AI app and watch it appear instantly.

Midjourney. This program also produces outstanding AI-generated images. The interface is not as easy-to-use as Dall-E 2, but the ability to edit images is best-in-class.

Runway. This suite of 30 creative tools can generate videos from a text prompt or an existing image.

Some of these gen AI tools are free; some carry a monthly cost depending on the number of users and your amount of usage. This list only scratches the surface of the available tools, which are growing every day. Determining how gen AI can benefit your business is as simple as signing up for a free trial and tinkering with the tool for a specific business task.

For example, Hagiu suggests you have employees use the tools to improve internal communications, produce ideas for new product features, research competitors, or touch up photos on your social media communications.

Afterward, assess whether gen AI allowed you to complete the task faster than before, or at a higher level of quality. Once you begin using the technology, new ideas for how it can benefit your business will likely come fast and furious.



6. WHERE AI IS NOW AND WHERE IT'S GOING

Given the newness of gen AI, the technology comes with risks. Gen AI vendors are often opaque about the kind of data they use to train their models. Gen AI could potentially expose sensitive data. Gen AI tools are designed to state their outputs in a confident manner, so errors (called "hallucinations" in AI speak) can sometimes be difficult to catch.

While companies should approach gen AI in a thoughtful way, any potential issues should not keep them from exploring the technology. "The perceived risks are way out of proportion to the real risks," Hagiu says. "Perhaps because of sensationalist media stories and science-fiction movies and books. The reality is a lot more boring. It's actually quite hard to do something really bad with gen AI for now. There is much greater risk for businesses in not using gen AI than in using it."

He says any reluctance to use gen AI might be due to undesirable attributes. "Human laziness," Hagiu says. "And maybe reluctance to embrace new technologies (for whatever strange reason). Think of

the early days of the Internet: every company and company employee should have started using the Internet as early as possible, but of course, some companies and people were faster adopters than others. The same goes with gen AI.”

The first-mover advantage for gen AI could be significant, especially given how quickly the technology is progressing. While entrepreneurs should become familiar with the available existing gen AI tools, Hagiu says relying only on tools that are available to everyone will provide at most a short-term advantage, since every business will eventually be using those tools.

Moving forward, the winners will be companies that use gen AI to rethink and revise their business strategies. In addition to using publicly available gen AI tools, companies can create their own customized gen AI tools, leveraging their unique knowledge and data. For example, remember Cheggmate, the personal teaching assistant mentioned earlier? Cheggmate creates data based on the unique actions of each student who uses the solution. Competitors that rely completely on publicly available gen AI tools can’t replicate the unique value that Cheggmate derives from its proprietary data. In the same way, a financial services company could create gen-AI private bankers, which are trained on the recommendations that human private bankers made to existing clients. Hagiu says “the holy grail” of gen AI is to create automatic and continuous data feedback loops, where a company’s gen AI tool is continuously improved based on the signals generated from the people using it.

The expectations for how gen AI will shape the future are lofty. Gartner, the technology consultancy, sees gen AI becoming a general-purpose technology “with an impact similar to that of the steam engine, electricity, and the internet.”^{vi} An era of disruption that gen AI will surely bring presents great opportunities, especially for entrepreneurs, whose calling card is taking advantage of uncertainty and disruption. Those who embrace this transformational technology the quickest may be among those who profit from it the most.

AT BOSTON UNIVERSITY QUESTROM SCHOOL OF BUSINESS, “WHAT’S NEXT?” HAS AN ANSWER

Gen AI is proving to be truly transformative.

At Boston University Questrom School of Business, we’re transforming every day. We’re reshaping existing programs, creating new ones, and seeking fresh ways to expand our students’ experience to ensure they gain valuable skills, insights, and connections from our vibrant community and enter the workforce as highly effective leaders.

At Questrom, innovation really stands for inspiration. We don’t make changes simply for changes’ sake. We enhance the education we provide our students and revolutionize management practice through our faculty’s research. We believe in sparking innovation that redefines.

To learn more about our ground-breaking undergraduate and Master’s programs, visit our website: www.bu.edu/questrom.

i [Report: Small Business Owners Embrace the Future - Majority Say They Will Adopt Gen AI - FreshBooks](#)

ii godaddy.com/ventureforward/wp-content/uploads/2023/05/GD-Generative-AI-Survey-Results_Spring-2023_20230525.pdf

iii [Gen AI Explodes: 77.8M Users In Just Two Years, Double The Rate of Tablets \(searchenginejournal.com\)](#)

iv <https://www.businessinsider.com/consultant-saved-time-using-chatgpt-landed-new-deals-business-2023-5>

v [Chegg, Inc. - Chegg announces CheggMate, the new AI companion, built with GPT-4](#)

vi [Gen AI: What Is It, Tools, Models, Applications and Use Cases \(gartner.com\)](#)

