Generative AI: Technology Worthy of Leadership's Attention

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Generative AI is a topic that is being discussed by nearly every business and technology leader in the world. Moving quickly and aggressively promoted in market, it is tempting to dismiss generative AI as another technology hype. This would be a mistake as we are at an inflection point in healthcare (as well as all industries) much like how the advent of the Internet and later, the iPhone, changed our lives and how we work and live, forever. Now is the time for boards and senior leaders to take stock of AI utilization and its potential to transform their organizations.

What Is Generative AI?

Artificial intelligence (AI) is not a single technology. It's an umbrella term used for many technologies and methods that mimic or even surpass human intelligence. Voice recognition, natural language processing (NLP), image processing, and advanced analytical methods like machine learning and deep learning all fall under AI.

As a very basic overview, generative AI is an advanced form of AI that creates content by being trained to recognize patterns and generate new content resembling the training sample. Large language models (LLMs), such as those that power ChatGPT, are AI models trained to understand and generate text similar to human writing. LLMs generate sentences by choosing the most probable next word based on the context of a human prompt. Examples include GPT-4 (OpenAI), PaLM-2 (Google), LLaMA (Meta), and Megatron-Turing (Nvidia).

Why Is It Different from Other Technology Hype Cycles?

AI has been used for decades in healthcare and beyond; however, generative AI is different because of significant technology and performance advancements that have enabled broad access and adoption.

Technology

The foundation models upon which generative AI use cases are built are complex neural networks that are trained on enormous amounts of unstructured data with trillions of parameters using deep learning. Foundation models are trained on not only vast amounts of data, but also on data across domains and topics. This gives generative AI versatility that other forms of AI have historically not had. As a result, generative AI has the potential to be stood up faster and its value proposition achieved more efficiently. That said, it is important to note that the trade-off to generative AI's versatility is reduced accuracy resulting from the broad domains across which it is typically trained. These challenges are being tackled by what is called "tuning"—the creation of domain-specific models for generative AI in which pre-trained models are customized to perform specific tasks or behaviors. It involves taking an existing model that has already been trained and adapting it to a narrower domain. This is likely the future of generative AI, much like it has been with traditional AI in the past.

Performance

Until the mid-2010s, AI models were less performant than humans across nearly all elements—handwriting recognition, speech recognition, image recognition, reading comprehension, and language understanding.[1] These systems have now exceeded human performance on numerous benchmarks and can not only generate content but also problem solve. AI can be used for a variety of tasks including classifying, editing, summarizing, researching, drafting, and answering questions.[2]

Adoption

Generative AI, and its most popular consumer form in ChatGPT, is the fastest-adopted technology of all time. ChatGPT reached 100 million users in just over two months.[3] The usability and accessibility of the platform has drawn users to experiment with the technology and has fascinated users with its potential.

Key Board Takeaways

- Healthcare is at an inflection point with technology enablement via generative AI. Every aspect of what we do will be impacted by generative AI.
- Leadership must balance speed and agility with appropriate guardrails around safety, equity, quality, and ethics in order to responsibly adopt AI.
- AI can assist, augment, and automate tasks, and systems need a framework by which they prioritize use cases, determine how they will leverage AI to enable problem-solving, and find partners that can accelerate transformation efforts.

Questions to ask management include:

- How are or should we be leveraging generative AI to reduce caregiver burden and enable them to better support patients?
- What are the opportunities we see for generative AI from an administrative and back-office perspective?
- Do we have a top-down approach in place to convene and organize efforts across the organization and create the equity and safety guidelines required?
- What organizations will we be partnering with to execute on an effective generative AI strategy?

How Providence Is Engaging

At Providence, we embrace these technologies. They are in alignment with our tradition for innovation in service to our mission. However, we also recognize that we must work with generative AI in a responsible manner to safeguard our caregivers and patients with a focus on reducing burden and enabling our doctors to focus on what they do best, while enhancing the patient experience. It is essential that we function as a team and ensure alignment in the face of rapid proliferation of vendor offerings.

We have instituted a top-down and bottoms-up approach to generative AI. Top-down we are convening and organizing cross-system efforts. We are focused on building the equity and safety guardrails to guide what and how we engage, while working within our existing constructs of information security and privacy as well as data ethics, identifying technology partners that

1 Justin Norden, Jon Wang, and Ambar Bhattacharyya, "Where Generative AI Meets Healthcare: Updating the Healthcare AI Landscape," *AI Checkup*, June 22, 2023.
2 Michael Chui, et al., "What Every CEO Should Know About Generative AI," McKinsey & Company, May 12, 2023.
3 Krystal Hu, "ChatGPT Sets Record for Fastest-Growing User Base," *Reuters*, February 2, 2023.

can enable/support transformation, and deploying system resources to support focused efforts and use cases. Bottoms-up we are identifying pain points and potential use cases by segment and user group. We have also deployed a secure architecture and standards for appropriate use of generative AI in development and production, including a non-public version of ChatGPT that prevents PHI and intellectual property from leaking.

We have broken our evaluation of use cases into four strategic domains: clinical, consumer/patient, administrative, and back-office. Depending on the customer needs, operational, organizational, and technological readiness, machines can **assist** (e.g., collect patient intake information), **augment** (e.g., provide differential diagnosis to support clinical decision making), or be **autonomous** in completing tasks. The degree to which machines need human-like intelligence varies in these levels. Additionally, for some tasks, the application of AI and machines only makes sense if they exceed human cognitive abilities and performance significantly. This is particularly important when it comes to AI in an autonomous state. For clinical teams, this might mean supporting clinical decision making or automating mundane tasks; for consumers and patients, it might highly personalize the patient experience based upon their unique needs, motivation, and preferences; and for the back-office it might mean intercepting and redirecting patient inquiries to the best channel for supporting the patient.

How Organizations Should Approach Generative AI

To effectively utilize generative AI, healthcare organizations should ensure their approach is strategic, open, and targeted.

AI strategy and plan: In addition to their digital roadmap, every organization needs to plan for the impact of AI on its operations, human resources, and culture. AI is going to transform how caregivers perform their jobs. This has implications for how we educate and train our workforce. Healthcare consumers increasingly expect personalization and on-demand services at their convenience, just as they experience in other industries. Given how quickly the advancements are happening in generative AI, it's important to keep this plan agile and responsive to the pace of change.

Find partners: Here at Providence, we are leveraging our strong partnerships with Microsoft as well as other companies that deploy developer platforms for AI/machine learning and for training and tuning large language models to deploy generative *infrastructure* at scale. We as a system are focused on creating high-value user-facing applications that allow our clinicians, analytics, healthcare intelligence, and care teams to leverage the power of this incredibly powerful class of technology.

Change management: In our AI framework, we consider tasks that are dull, dirty, dangerous, or difficult for humans to be prime candidates for exploring AI solutions, where machines can assist, augment, or automate these human tasks. The workforce needs education, training, and help with understanding how this impacts their future jobs. Ultimately, the goal is to free humans to do more intelligent, complex tasks, and care for patients. However, the change in workflows and how caregivers think about their jobs requires careful transition and change.

Given the potential positive impact that generative AI can have on organizational transformation, boards and senior leaders should both understand and proactively support a strategic approach to applying generative AI to their organizations. When applied correctly, generative AI has the potential to support our workforce and our patients in significantly new ways—and transform healthcare organizations to better support their missions.

The Governance Institute thanks Sara Vaezy, Executive Vice President and Chief Strategy and Digital Officer at Providence, for contributing this article. *She can be reached at sara.vaezy@providence.org.*