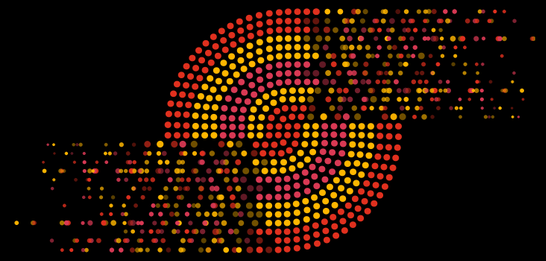
Six generative AI takeaways for CIOs



If you're a chief information officer (CIO) or other technology leader, generative AI (GenAI) is likely creating a lot of pressure — and opportunity. As it becomes an integral part of business strategy and operations, you need to lead with confidence and pragmatism. On the one hand, your CEO and CFO want you to use it to cut costs and empower the business instantly. On the other hand, they also may expect you to help drive real enterprise change and fuel new business models. But that takes time and investment to establish a modern data architecture and build an AI factory. Meanwhile, a voice in your head may be asking: How can things be different this time around? You've seen other technologies come and go before they've been able to help drive meaningful outcomes for the business.

Striking the appropriate balance means targeting those areas where GenAI can more quickly prove its value while you lay the foundation for broader-scale transformation. One way to do that is to focus on your own function: using GenAI to drive new ways of working and reinventing IT. GenAI can help grow your team's capacity, speed up your software development efforts, and accelerate your data-related initiatives, among other things. With a GenAI-powered IT function, you can be well positioned to scale GenAI across the business where it's becoming an intrinsic part of how organizations run and grow. Here are six insights to consider as you get started.

1. You may leverage GenAI in three ways — simultaneously

Today, GenAI is entering enterprises in three ways, often at the same time — and you may be responsible for helping to deploy and oversee all three. The first, often the most accessible way to provide that near-term value that your business leaders may be demanding, involves GenAI functionalities offered by cloud service providers and embedded in existing enterprise applications. Many applications now include copilots and chat-based interfaces designed to give natural language answers to natural language questions. Many business users in your organization may soon be using them by default. In some cases, they may not even know that they are using GenAI. It will likely be your responsibility to understand and oversee the different GenAI capabilities that various enterprise applications offer now and may offer soon — and to know if you'll have to pay vendors more to use them.

The second "way in" offers a path to transformation and truly game-changing value: Your company may choose (as we do at PwC) to license a private version of a public GenAI foundation model. When you deploy this model within your own secure IT environment, you can extend its value by using your proprietary data — securely. This approach to GenAI can scale throughout the organization.

GenAI vendors also offer models that are pre-trained for specific domains such as software development, finance, **legal** or **tax**. These specialized models can accelerate your time to value, but you'll still have to integrate them with your data and business processes, provide oversight and use them to help drive transformation.

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2. GenAI enables IT transformation

A well-trained GenAI model can do for you what you do for the business by making your other tech more fit for purpose, more reliable, easier to use and more productive. Consider software development. In our in-house use and with clients, we have found 10 areas in the software development life cycle where GenAI can boost productivity and speed by 20% to 50% right now — while also increasing quality and end-user satisfaction. It can break down features into user stories and generate high-quality acceptance criteria. It can help write more complete test cases, generate synthetic data to fill in gaps and automate initial test scripts. GenAI can generate detailed documentation to save time and enhance root cause analysis during troubleshooting. These are just some examples — and going forward, GenAI could do even more, like generating code comprehensively and ushering in a new software development methodology that could eventually replace agile development.

Of course, you do more than software development — and so does GenAI. If you're still migrating workloads or applications to cloud, for example, your GenAI model can potentially analyze legacy architecture diagrams. On cloud, it can (among other tasks) automate SQL queries and SQL tuning. GenAI is also becoming an essential tool in **cyber defense**. Common uses we're seeing include monitoring traffic, detecting anomalies, resolving simpler incidents and providing recommendations to help people more quickly resolve complex incidents. These are just a few examples. GenAI can transform almost every aspect of your function's work.

3. To transform IT and the enterprise, focus on 'patterns' — not use cases

Just as a single GenAI model can transform software development, cybersecurity, cloud management and more, it can often deliver value throughout the enterprise. That's why, to achieve value at scale, it's best not to focus on individual use cases. Instead, look at "patterns" that can cover many use cases at once. In our experience, more than over 80% of GenAI use cases fall into one of six patterns.

- **Summarization:** Analyzing tech architecture, for instance, or consumer feedback on products.
- **Deep retrieval:** Drawing insights from unstructured data such as text or human speech.
- **Transformation:** Translating a program from one code to another, for example, or translating text documents from one language to another.
- **Augmentation:** Troubleshooting or autocompleting software code — or tax data.
- **Q&A chatbots:** For uses like supporting cyber incident response or handling customer service requests.
- **Net-new creation:** Perhaps generating first drafts of code or of financial reports.

If you plan and conduct your GenAI deployment to deliver these patterns, you may find that a single model can deliver value in multiple tasks, across functions and lines of business.

4. GenAI can transform your data initiatives

Getting a handle on all of your data has always been a **priority**. Now, the stakes are higher given its pivotal role in capitalizing on GenAI. But GenAI can also help address the challenge of cleansing, organizing and standardizing data. It can make sense of unstructured data such as that trapped in presentations, strategy documents, customer logs and countless other documents. It can automate much of the data cleansing process. That can make previously impractical data initiatives not just feasible, but attractive.

You're also likely to still need to move data to cloud and enable GenAI to access it securely. You'll have to help assess the value of data sets, assure their quality and compliance, reduce their bias and manage risks. In short, for data (as for most other areas that it touches), GenAI won't remove the need for skilled people to do quality work. It can instead grow your capacity — enabling you and your team to turn more data into value — while changing the nature of your work.

5. GenAI can elevate your value to the business

Even last year — practically a lifetime ago in generative AI advancement — our August 2023 **Pulse Survey** indicated that 84% of technology leaders expect to use GenAI to support new business models. That underlines just how important GenAI — and your role in implementing it — will be. You may, for example, need to work with business leads to figure out that new business model, educating them on what GenAI can do and how it can do it.

If the path forward includes an **AI factory**, such as we have at PwC, you'll likely take the lead on that too. GenAI requires new roles and skills, which other senior leaders may look to you for help in filling. And with GenAI potentially throughout your organization soon, stakeholders may also look to you for assurance that it is producing trusted outputs. That will require **Responsible AI**. If you embed Responsible AI into GenAI from Day One, you'll be well equipped to govern it, validate its outputs, monitor its ROI and manage the risks.

6. Because of GenAI, IT will need reinvention

As GenAI spreads, your team will likely need new roles and skills, though cross skilling is often possible. You might use GenAI to lessen the burden on your data scientists or software engineers, then supplement their current skill set so they can focus on GenAI model management or GenAI-specific governance. They may also need coaching to work more closely with the business to help teams understand and leverage GenAI in their work.

To enable the business, your people may need to move faster than usual and adopt an experimental, fail-fast mentality. As part of a Responsible AI approach, they may also need new control practices to keep up with the fast pace and manage risks. You may also soon find yourself allocating new resources to help support GenAI and related data initiatives. That could require new solutions to monitor and report on spend and ROI.

Moving fast

It may seem like a lot to focus on, and we understand. At PwC, we're going through this same transformation ourselves. And while GenAI is new, we have, in a way, been here before. As tech leaders, we've implemented and governed other transformative technologies, ranging from conventional AI to cloud. But given the speed at which GenAI is advancing, you may have to move faster than ever before.