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Lessons Learned:
Experience with AI in health care

There's plenty of hype and mystique around artificial intelligence and its potential to transform health care. But how can CIOs and IT leaders use AI to solve real business problems?

In this article, Tushar Mehrotra, senior vice president of analytics at Optum, busts a few AI myths and shares practical advice from his own experience on how to approach AI successfully.

Solve problems faster with new technologies

Technically speaking, AI is the ability of a machine to perform cognitive-like functions that you normally associate with human minds. Things like perceiving, problem-solving or learning. But when you get past the jargon, AI is simply a set of new technologies that can help you solve business problems more efficiently.

For example, AI can be impactful in automating situations such as identifying tumors on a patient's scan images, or predicting if a claim is likely to be paid on appeal. This can help you free up capacity and let humans intervene when it's most needed. And with the growing amounts of data and computing power, AI is becoming increasingly relevant and useful in health care.

Start with the business need

When thinking about using AI for your business, it's essential that you don't start with the technology and then force it into a solution. The key is to partner with the business leaders to understand their most important needs. Then you can develop the technology strategy to address those needs.

Once you have those conversations and understand the business needs, ask a few more questions:

- What are the AI technologies that can enable your business solution?
- What is the right talent and skillset that you need? (And should you try to hire, train or partner?)
- How do you access and curate the data you need?

The key is to start with the business use cases and work backward from them to determine where AI would be most valuable, and how CIOs and IT leaders can lead the way toward a business solution.

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AI can do some things very well, but it can't fix all your problems

There are a few myths about what AI is and what it can and can't do. Here are some of the top misconceptions.

1. AI won't replace everyone's jobs. It might change some current roles and create entirely new job categories. But it's no different from other advances: it can help humans become more effective and make processes become more efficient.

2. AI algorithms won't make accurate predictions with messy data. The quality of the data is more important than the actual algorithm. The most important input is data that is relevant to the specific business problem.

3. AI can't remove human bias in decision-making. When human observations and data-collection processes are inconsistent from one observer to the next, algorithms are going to have problems analyzing the data, learning, and making predictions.

Data science is at the heart of AI

When you look behind the scenes, using AI to solve business problems is really data science. For example, how do you improve your ability to identify trends and patterns? How do you use increasing amounts of data to make decisions much more rapidly?

To detect patterns, you need large data sets, often from multiple sources. And data from disparate sources needs to be integrated, standardized and organized. Your algorithm is only going to be as smart as the data you're putting into it. Keeping the data clean and consistent is important to being able to solve your business problems.

You'll want to work with a data set that you're comfortable with. It has to be clean, from reliable sources, and structured so the output is relevant to the problem you're solving. That's why getting the right data-science talent and skillsets must be part of your solution.

Shortage of talented data scientists

It's quite challenging to acquire the right people because there's high demand for this skillset. Your organization needs to be very thoughtful about how, when and where you're going to invest in these resources. You can't just turn a switch and hire 100 data scientists overnight. Because they're in high demand, people with this skill set have a lot of options, inside and outside of health care.

It is critically important to think about what you're going to use them for, as well as when and how you're going to use them. Hiring talent before understanding the business use case is a recipe for failure.

> *Hiring the talent before understanding the business use case is a recipe for failure.*

The best approach is to start with the business use case and connect it to your overall analytics and AI strategy. Then find your talent.

Optum chose to make strategic hiring choices and, at the same time, to invest heavily in in-house training. This combination of hiring and training has allowed us to strengthen our existing AI talent, develop young talent, and even find new talent within the organization. Just as importantly, we actively train senior leaders, managers and others in the business to understand how to work with data science and AI.

How a CIO can move forward

There are a few things CIOs and IT leaders can do to move forward with AI.

1. Educate yourself and be prepared to have a dialogue with other business leaders. Your peers have heard about AI, but they'll look to you as the thought leader to inform them about it.

2. Create a clear vision of what you want to achieve. You'll need a roadmap for how to get there, and you'll need close partnerships with business leaders and the CEO to make AI a priority in your organization.

3. Be thoughtful about what talent and skill sets you'll need to achieve your vision, and whether you hire, train, partner, or all of the above.

Lastly, keep in mind that if you plan to build your own, you'll find the biggest breakthroughs are probably open sourced. The leaders in AI are Google, Facebook, Uber and others. None of these tech companies sell enterprise software. They're using open-source frameworks.

> Keep reading about artificial intelligence, data science, and solving real business problems in our Expert Opinion articles, **"How to fix your AI talent shortage"** and **"The secrets to AI implementation."** You'll find them at **optum.com/cio**.

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Tushar leads a team of health economists, data scientists and actuaries. Before joining Optum, he spent seven years at McKinsey & Company, and he has been one of the core leaders in health care analytics, publishing articles and serving on panels and roundtables with other leaders in the industry.