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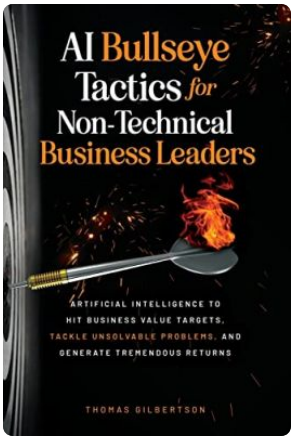

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AI Bullseye Tactics For Non-Technical Business Leaders

Artificial Intelligence to Hit Business Value Targets, Tackle Unsolvable Problems, and Generate Tremendous Returns

Thomas Gilbertson • Thomas Gilbertson © 2023 • 238 pages

Leadership
Technology / Artificial Intelligence / AI Applications

Take-Aways

- People are infatuated with AI – the shiny new thing that seems as if it ought to be able to help.
- With AI, the world is in a position akin to European mapmakers in 1520: People are exploring new terrain too quickly for guidebooks to keep up.
- Use AI for prediction when it can do a better job than your current forecasting mechanism.
- “Classification” is another important workhorse of an AI driver.
- AI can also perform sensory tasks, use language, and operate as an intelligent agent.
- When you embark on driving business value with AI, focus on creating capabilities that deliver ongoing results.
- Take a nonlinear approach to AI projects.
- Assemble an AI project team that includes both business experts and people who understand AI’s “mechanics and mathematics.”
- Difficulties often arise in the AI value delivery process because businesspeople need to learn to treat it differently.

Recommendation

AI gets constant hype. Business leaders are sure it can boost profits – if they only knew how – and that they must start using it before their rivals. Author Thomas Gilbertson, who has completed 20 AI projects and holds several related patents, builds a bypass road around the hype. He offers practical guidance on how you can use AI to achieve positive business results and explains when not to use it, as well as how to think about it, plan for it, and set achievable goals. Gilbertson shows businesspeople how to tap AI's power, as he inoculates readers against the hype. His cautionary lesson: AI must deliver value, even if it can't promise just how much.

Summary

People are infatuated with AI – the shiny new thing that seems as if it ought to be able to help.

AI, the newest shiny object for enhancing business value, competes with more common routes to building value, including innovation, cutting costs, and enhancing the customer experience. Other management practices, such as Six Sigma, process re-engineering, and product innovation already address or incorporate those routes.

Historically, business decisions required certainty. Banks defined good or bad lending risks with rules that included empirical requirements, such as credit scores. Someone with a low credit score couldn't get a loan, but lenders welcomed those whose credit scores beat their cutoff point.

> *"AI hype prevents value realization."*

AI doesn't provide clear-cut certainty. An AI analysis studies numerous data points, so it is more likely to produce an answer that gives a range, such as saying that its analysis suggests, "…86% approval of the loan applicant and a 14% disapproval…" The old rule-driven system answered yes or no, but AI delivers results on a spectrum. Failure to acknowledge the fundamental postulate that AI is uncertain, and then to work with such uncertainty, and to communicate it to your boss, will cost you both credibility and success.

With AI, the world is in a position akin to European mapmakers in 1520: People are exploring new terrain too quickly for guidebooks to keep up.

Reality would have perplexed anyone using a map to navigate the high seas in 1520. Yet just a few years later, European explorers discovered the Pacific Ocean, among other phenomena previously unknown to them or their mapmakers. The Earth existed for eons before 1520, yet people knew very little about it. AI has been around for a few decades, but it still presents many unknowns.

> *"What AI does is vastly simpler than what AI is; focus on what AI does…to drive business value."*

AI is sufficiently deep and complex that learning what it is takes more time than most people are willing to spend. Instead, take a more straightforward path to learn about AI; for example, review other companies' experiences to build your understanding.

At this point in its development, AI does five core things, identified as "AI outcomes." You can select among thousands of AI techniques, but all of them, in their own way, deliver one of these five results: make predictions, classify or categorize material, use language, handle sensory tasks, and act as an intelligent agent. So far, businesses most commonly deploy AI for prediction and classification.

Use AI for prediction when it can do a better job than your current forecasting mechanism.

Remember that "AI is never certain," so using it requires accepting uncertainty. Calculating the likelihood of an outcome or a range of outcomes is a matter of probability; it is not definite.

AI probably won't help you beat the lottery; since previous draws don't affect the current one, history is not useful. Predicting the future on the basis of the past won't work. AI analysis also might falter in other settings where developing rules to define and address a problem could require too many parameters, too much revision, and too much updating, making it too costly. However, weather forecasters know that even if today's weather is uncertain, they can still derive a forecast. In their case, AI can help. Knowing there's a "90% chance" of rain is far more useful than having no information at all.

> *"Oftentimes, you could create a set of rules for a business result you are looking to drive. But what if that set of rules was incredibly complex?... For each business case, there is a point where the cost of maintaining a complex set of rules would negate the business case for using that set of rules in the first place — the costs would outweigh the benefits."*

Past events are the raw material for AI's predictions. Look at a similar past decision, and consider what the prediction should have been at the time. "Labeled data" is particularly useful because it addresses the circumstances around an event with a label that conveys what happened. If labeled data indicates that the first successful applicant for a loan eventually defaulted, but the second applicant didn't, AI can use that information to predict what might happen with a new applicant.

One way to test an AI prediction is to hold back some labeled data when you train it, and then use that data to test the prediction. Since the data is from the past, you already know the outcome. Use this data to test your AI's analysis; if it predicts the outcome that actually happened, that's good. This makes "clean data" critical, but "synthetic data," extrapolated from your existing data, may soon be able to fill the gap.

"Classification" is another important workhorse of an AI driver.

You may find utility in classifying customers according to the value of their trade with you. To do so, identify certain characteristics associated with those tiers of value. Typical order size and frequency over time might be among the criteria, but you don't need AI to discern them. But what if you have a database of people that includes details on their height and weight, and you wonder which of them might be in the National Football League? You'll probably have a small group of people who rank as extraordinarily tall and

heavy, so if your population set includes NFL players, you'll probably find them in that group. When new individuals enter the database, their distance from this small group provides a clue as to how probable it is that they're potential NFL material.

> *"The data you have or the data you can get will dramatically limit or boost your AI results."*

You can define any given target group by defining numerous criteria. A human analyst may be able to work with 20 criteria, but what if thousands of criteria are relevant? AI can handle an unlimited number of criteria. It can sift through thousands, even millions, of criteria from numerous sources. The technology can then identify which data matters most and adjust the changes in data sources and characteristics or criteria without creating new rules. As a practical matter, this means AI can be useful for both prediction and classification, say, of whether a prospect is likely to be a desirable sales target. Use AI in situations when your criteria and characteristics are too numerous for the average human to analyze and too subtle for a straightforward set of rules.

AI can also perform sensory tasks, use language, and operate as an intelligent agent.

AI's abilities to handle sensory tasks, use language, and operate as an intelligent agent touch on some human functions. As these less common AI uses develop, they offer great potential to drive business value. Using AI for some sensory tasks frees people to do work AI can't yet handle.

Be alert for the kinds of routine tasks AI may be able to perform better than a person. In one case, the US Bureau of Engraving and Printing once assigned an employee to watch printed currency roll off the production line to ensure that no mistakes appeared. AI could do such a job better than a human being, inspecting each bill more closely and faster than a person could. Any situation where you can derive business value from closer or more exacting scrutiny of items or of a process is primed for the use of AI. For example, AI might be able to read medical scans to diagnose cancer as well as, or even better than, a radiologist.

> *"You can expect similar to human-level performance…done faster and cheaper within a specific, contained context while avoiding all the additional human needs."*

AI also can work with hearing and touch. It could help determine if a recovering post-surgery patient is doing his prescribed exercises correctly. The patient could wear a smartphone while exercising and use an AI function that measures data from the phone's sensors. AI can also deal with audio data, such as phone calls as they are happening or recordings of music or speech.

Like humans, AI can summarize conversations, form complete sentences, and generate language across different tongues, written or oral. AI language capabilities are developing so quickly that they'll soon be as generally useful for businesses as AI prediction and categorization capacities are now. However, AI applications that address taste and smell are rare so far. The difficulty in developing these applications lies in getting the sensory data. As it develops, AI could "listen" to a conversation between a sales rep and a client and evaluate in real time whether a supervisor should intervene.

AI intelligent agents, which generally can assess a situation and act accordingly, are not yet widespread, but they are applicable in data centers and the military. Intelligent agents, which draw from experience and the situation at hand, can select the best next action to serve a defined goal.

When you embark on driving business value with AI, focus on creating capabilities that deliver ongoing results.

When you consider how to outline, present, and promote your AI initiative, try to build up your own expertise instead of relying on "experts." Think about possible AI projects in the same way that suspension bridge builders approach their work. They start the process of erecting a bridge by stringing lines of fine cable from one side of the span to the other. These act as pilot lines, which mark the bridge's trajectory and its goal, just as your AI pilot line should define "a possible project that drives business value." Set up 10-minute sessions to brainstorm your ideas for AI pilot lines, and then polish those ideas.

> *"You assume the AI geniuses know all 'your stuff' too, but they do not."*

Bridge builders combine their pilot lines with other lines to form a strong cable. Your other lines are the "opportunity," "data," and "measurement" that successful AI outcomes require. To show your opportunity, succinctly state the business problem you want to address. Be sure you have sufficient access to data to amass enough specific information to develop your project. Measurement enables you to determine how much "benefit" your AI project is achieving. You can muster these components without needing more than "a cursory understanding of the mechanics and mathematics of AI" itself.

Take a nonlinear approach to an AI project.

To set out, work in manageable increments. Be content to start using AI to tackle smaller projects. Don't base your assessment of your project's value on the size of the opportunity. A large project with great success may garner more acclaim and have more glamour, but small gains are still gains. Even in the initial stages of your project, reach out to relevant people to begin informing them about your expectations for AI in the context of your project and to share how you will gauge its progress and success.

> *"Never appear to be an evangelist for AI, which reduces trust."*

Office politics and people's innate fear of change can fuel pushback against your project. Anticipate this and prepare your responses. Don't worry about knowing all the AI-related jargon. It keeps changing, and you'll pick up some of it as your project progresses.

Enlist someone to serve as an agent in the areas of the process where the results from AI are less sure. Use "demonstrations" strategically to get people on board. Activate the project a bit at a time. By the end of the project, you should be able to measure its outcome and assess how big a part your investment in AI played, but don't get distracted by this evaluation too early in the process.

Assemble an AI project team that includes both business experts and people who understand AI's "mechanics and mathematics."

To hit the "AI bullseye," take target shooting as your model. Someone needs to provide the target, someone needs to aim and fire, and someone needs to provide and maintain the gun. Each role requires expertise.

> *"Once you know what outcome you need...leave it to an expert to select the specific [AI] technique."*

The "spotter" needs to have enough industry experience to recognize which issues have priority and to explain the value of a solution. The "marksman" needs executive ability, but not proficiency in AI or technology. The "gunsmith" brings AI and technological knowledge and, generally, supplies your team with the tools it needs. A weakness or vacancy in any of these three key positions will seriously undermine your project's success. Don't expect any one person to handle all three roles.

Difficulties often arise in the AI value delivery process because businesspeople need to learn to treat it differently.

AI value delivery differs from the certainty of standard software. To use it effectively, you must understand what you want it to do. Generally, don't use AI if you don't need it. Start with the "desired business value" you want to achieve, but not a "precisely defined business requirement." Once you assemble your project's components, create the right AI strategy by focusing on the "hardest things first," not the "first things first." To manage risk, start with the easiest, least expensive AI deployment and gauge your early results to measure your progress. Focus on a task with measurable or quantifiable results. As you start planning, confirm that the data you will need is available. After you address the hardest thing, do the "next hardest." Resist perfectionism, and don't spend time on peripheral considerations.

> *"If you're going to solve a problem you've given up on [using] results that won't be 100% certain, you need to rewire your thought process on how to quantify [the] results."*

"Iterate" the process repeatedly – tweaking here, improving there, and quantifying the results. To measure the improvement you've achieved by using the AI application, consider what you've accomplished beyond the *status quo*. Be aware of how AI could provide wrong answers and assess these lapses. The improvement you see in your results will not always be proportional to your overall investment. At some point, given AI's unpredictability, you will have to consider the results "good enough." Plotting your investment and results on a curve can help you see when a plateau is forming, but your individual circumstances will determine how best to proceed with an AI project and when to stop.

About the Author

Thomas Gilbertson is Optum Technology's senior director of AI delivery and innovation. He focuses on applying AI, advanced technologies, and agile engineering to transform business processes and the customer experience.