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# The First Step in Building a Predictive Model

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There is a lot of excitement in the actuarial community about the potential of machine learning and predictive models. As a result, a lot of the conversation has focused on the technical details, including the types of Machine Learning (e.g., supervised vs. unsupervised), the types of programming language (e.g., R or Python), and other modeling details. While the excitement around predictive modeling and the technical details is merited and the discussion of these details is important, there are other considerations that should be included in the discussion. This article covers some of the broader considerations for any predictive model, and for that matter, any model or project.

A good starting point for any model is to define what question(s) you are trying to answer. What are you trying to solve for and what is the outcome you are trying to achieve? It can be easy to be proud of the technical aspects and details of a given model, and at the same time lose track of the big picture. Creating a North Star for the goals and objectives of a model before starting to write the first line of code will help ensure the model is fit for purpose.

In order to achieve that North Star, it is imperative to start collaborating with other functions and workforce segments before the model build begins. For example, if the model being developed will impact marketing, distribution and operations, it is important to work with these departments to establish buy-in from “Day 1.” That way, these departments can have a voice in what needs to be considered in the model, along with having the advanced notice to prepare for any changes that the modeling project will have on their people, processes and/or systems. Likewise, those other departments can inform you of any current or planned initiatives that may impact your project.

Once the questions, goals and objectives are landed upon, the next step should be to effectively build the business case for that model or project. This is an area that actuaries are uniquely trained to perform, given their technical acumen, product/business knowledge and risk awareness. The business case should include a high-level description of the project/model, the estimated impact (e.g., revenue gain, margin gain, cost savings), resource needs for the project, and any risks and interdependencies. Building a business case will help crystalize whether



it is worth the time and effort to build the model. It will help crystallize the North Star, which is the outcome that the model is trying to achieve.

The high-level business case is critical for further collaboration and buy-in from key stakeholders. Without buy-in from internal stakeholders, frequently a model is not worth building, as it likely won't be used. When advocating with stakeholders, do not underestimate the importance of marketing and branding. A common pitfall is to use too much technical jargon—keep the messaging at the level that senior stakeholders care about. Put yourselves in the stakeholder's “shoes” to craft your message. The business case can be a guide, as if the message doesn't translate to the metrics summarized in the business case, the senior stakeholder may not fully support. Make sure to cover both the upside and the downside risks, such as the opportunity costs of not acting and the impact on the organization. Focus on the “why” and “so what,” rather than the “what.”

A common pitfall is to underestimate the importance of collaboration with other functions from the beginning and appropriately marketing/branding the idea internally. Underinvesting or any mistiming can cause issues with the modeling project. Therefore, when beginning the process, it is important not to start with the details of the type of model, as senior leadership likely doesn't care as much about those details. Start with a high-level business case and an effective marketing plan to communicate the benefits of the solution internally. Focus on the high-level impacts to the business, as those are important to senior leadership. Then, after stakeholder buy-in has been achieved through an effective business case, the actuary can focus on the granular aspects of whether it is a neural network or a boosted tree algorithm. ■



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