Descriptive models are the ones to describe the ﻿﻿﻿﻿﻿﻿relationship between the decision variables and independent variables, then solve them by certain formulas, such as regression models. Prescriptive models are the ones that provide the optimal solutions. It might involve a couple of analyses, such as What-If analysis, Model Optimization, etc. The heuristics decision model are mental processes for a quick response. Sometimes, especially for experienced professionals, heuristic most likely to be correct. But not always. Therefore Heuristics are less structured and opt for more subjective opinions. Beyond all three types of decision models, to make good decisions, we need to clearly identify the problems and opportunities. No matter what methods are being used, scope management is always the first step. What are the problems, what are the answers expected, what data we have on hand, if not, where could we get them? With all these being done, then we'll start to decide what model we're going to use. In this progress, setup training data and testing data would be a way to check the validity. Especially for exponential models, we always split the original data into two parts for training and testing.

Mostly, prescriptive decision models are used for regular analytics. There will be problems listed, and requirements, and data. Data analysts would then use what they've learned and experienced to generate analyzing progress. Heuristics, on the other hand, is more fit for emergency or novel situations. For example, for small businesses, how would they survive under the SIP order? There isn't too much time for them to draw the entire plan since a quick response would be critical. Also, there isn't much data to analyze. Similar situations happened a hundred years ago. They need almost a revolution thinking on how to run a business. This is when a manager would prefer a heuristic decision model instead of a prescriptive model.

Reference:

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