

Real-time Business Decisions With ChatGPT

Course Subject:	International Business and Strategy
Student Level:	Advanced Undergraduate
Number of Students:	40 students per section
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What Instructor Did

Professor Sarathy conducted a live, in-class demonstration of using ChatGPT to make complex business decisions. In one example, he explored the pros and cons of choosing between making a semiconductor manufacturing investment in one of two different countries. This involved analyzing how changes in various system inputs would impact the outputs, in order to facilitate the decision-making process. This method is known as a “sensitivity analysis.”

He first asked ChatGPT to suggest a framework for making the decision. He proceeded with more detailed prompts to implement the framework, generate the necessary data, and generate spreadsheets. The spreadsheets allowed manipulation of data points to test assumptions and impacts and data visualizations.

Note: Students can be involved in these demonstrations in multiple ways. They can be working in small groups to follow along with the analysis on their own, use different tools to compare results, or make suggestions for next steps in the class analysis.

Purpose

Through this activity, students learn how to model complex decisions and to conduct a sensitivity analysis to test the robustness of a solution to a complex business problem. Using ChatGPT to generate data and mathematical models in spreadsheets frees the class up to focus on the decision-making, which is the learning outcome of this course. ChatGPT also enables them to work with current issues and data, rather than published case studies, which are not up-to-date.

In addition, students are learning how to use Generative AI tools in ways that will likely be commonplace when they enter the workforce. In particular, they are learning how to create prompts to develop strategy, retrieve and analyze data, and evaluate accuracy.

Assessment

The value of such exercises is that students become aware that decisions with a long-term impact depend on assumptions about the future. Hence, learning to explore how decisions may change as assumptions about the future are changed, is essential to understanding and managing risk. The goal is to let students experiment with the data and decide for themselves which decision alternative to choose, balancing future returns with the corresponding risk profiles. The extent of discussion about which decision to choose and the possibility that disagreements about the best decision are unresolved is part of the learning process.

Faculty Reflections

In my experience, working with AI live in a class works best if you devote the entire class time to the activity. It takes time for students to absorb the analysis process and figure out how to progressively prompt the AI model, and then evaluate the results. This will necessitate making some decisions about what elements to drop in order to provide more class time for engaging with AI models.

Step-by-Step Directions

Preparing to conduct a live analysis will take preparation and practice. The steps listed below are for the instructor. You should run the analysis yourself, perhaps using different tools, before conducting the analysis in front of the class. You can engage students at any point during the analysis or ask them to explain why they think you obtain specific results.

Step 1	Establish a problem to be explored and craft an initial prompt. <i>Example Prompt:</i> <i>I would like to use sensitivity analysis to explore the pros and cons of a semiconductor manufacturing investment, starting with a comparison of Germany and South Korea. Can you develop a framework for how to proceed?</i>
Step 2	Dig deeper into the problem with subsequent prompts. <i>Example Prompts:</i> <i>Let's consider logic chips for electric vehicles. What is the generally accepted minimum efficient scale for such semiconductor plants, and capital investment costs for such plants?</i> <i>Each plant would seek to export some of its output to the US and to Japan. How might this goal affect the investment location choice?</i>
Step 3	Ask the GenAI to research the data needed for decision-making. <i>Example Prompts:</i> <i>Can you provide specific data, and data on sources, on semiconductor manufacturing Government incentives?</i> <i>Could you provide industry information on wage and energy cost trends?</i>

	<i>What are the historical trends for prices for logic chips for electric vehicles, of different sizes, in the principal markets?</i>
Step 4	When you have sufficient data, ask the AI to create a spreadsheet that can be used to compare the two alternatives.
Step 5	Work with students to fine-tune the model, ask additional questions and arrive at a decision.

Related Materials

- [Foreign Direct Investment Example](#) – This document shows prompts entered into ChatGPT and responses.