



Effective Presentations to the C-Suite: QMatrix

Motivation

Statisticians and data scientists may be asked to present to high-level executives, possibly in the role of a statistical consultant or as an in-house data scientist. Often, the statistician/data scientist is tasked with analyzing data to make a recommendation to the executive officers of a company or organization. The statistician might spend six months gathering the data, cleaning it, trying various analytical methods, testing conditions of the model, simulating outcomes, and generating forecasts. The opportunity for presenting their work might last only 5-15 minutes. How can one effectively summarize months of work in just 5 minutes?

QMatrix Presentation Method

For those familiar with the $Q_1Q_2Q_3$ workflow, we recommend starting a presentation with the relevant Q_1 context of the problem: Why are we here in the room today? What is the problem? Why is this problem important?

Then we recommend presenting Q_3 findings, conclusions, and recommendations. What did you find with your statistical or data science analysis? What does that mean for the audience? What is your recommendation?

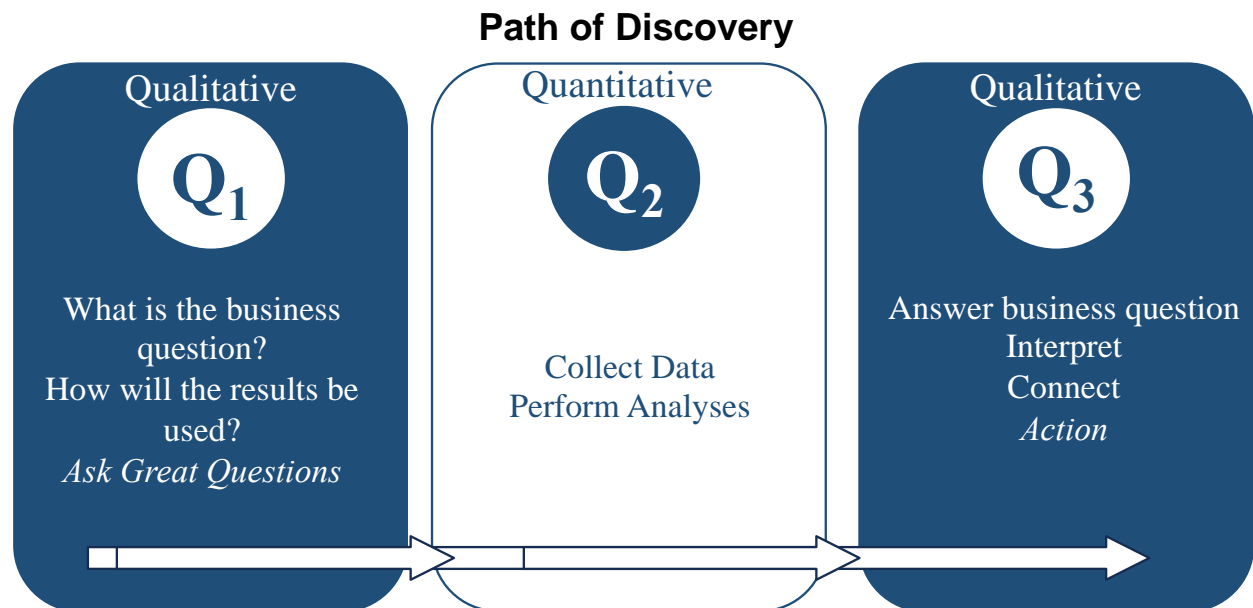
Only after the audience has understood your Q_3 recommendations should you talk about the Q_2 methods that produced the findings (i.e., the quantitative/statistical results that are translated back into the language of the domain context). And an effective presenter will go into as much detail about the Q_2 quantitative methods as the audience desires. Some audiences will want to dive deep into the methods. Others will not care about them at all. After all, the statistician/data scientist is being paid because they are an expert in Q_2 . The audience might not be interested in the statistical or computational details and discussing them would be a waste of the audience's time.

A complicated analysis might generate several Q_3 recommendations. We recommend a statistician/data scientist present them one at a time in a logical sequence. If the Q_2 details have been discussed to the audience's satisfaction, the presenter should summarize the Q_3 conclusions/recommendations on that topic before moving on to the next set of Q_3 findings, conclusions, and recommendations, followed by a dive into the Q_2 details only as deep as the audience desires and another summary of those Q_3 conclusions/recommendations before moving to the next Q_3 topic.

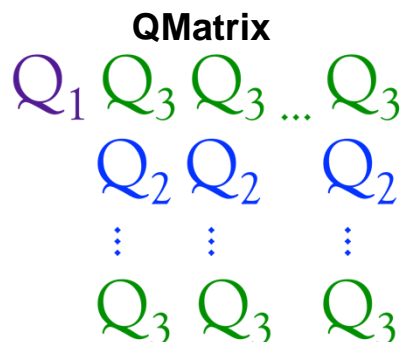
QMatrix, Not the Path of Presentations

Statisticians and data scientists conduct a project following the general order of Q_1 , Q_2 , and Q_3 with some iteration between them. We consider Q_1 - Q_2 - Q_3 to be the proper path of discovery. Start with the Q_1 context, conduct Q_2 analyses, and then translate the statistical results into Q_3 findings, conclusions, and recommendations for action.

However, a C-Suite audience will not care about the Q₂ analyses until they understand the Q₃ findings, conclusions, and recommendations. Presenting along the path of discovery by talking about methods before results will annoy the audience.



Our recommended alternative is to use the “QMatrix” method. Starting left to right and going from top to bottom, the QMatrix presentation method starts with Q₁, moves to Q₃, goes as deep into Q₂ as desired, finished that topic with a summary of Q₃, and then repeats this with the next Q₃ topic. When the final Q₃ conclusion/recommendation is summarized, the formal presentation is over. An optional final slide could summarize all of the Q₃ conclusions/recommendations.



Another Way to Think about Presentations: Scuba Diving or Snorkeling

Whoever has attended enough statistics or data science presentations (or any quantitative presentations in general), will have had the experience of not understanding much of a talk past the first few minutes of the introduction. Speakers often think that they can impress the audience by diving deep into the technical details of the analysis, before even motivating what the problem is, why it’s relevant, or using plain language, diagrams, analogies, or examples to explain what they did.

I think of presentations that spend too much time describing inscrutable (hard to understand) technical details as being on a scuba dive. You need specialized equipment (i.e., a tank of air for breathing) to scuba dive in the same way that you almost need to be an expert in the topic being presented to understand the deep technical details. Most of the audience will not already be an expert in the technical details discussed and will “drown” during the presentation, i.e., they will get lost, fail to understand, and stop paying attention.

An alternative to this scuba diving style of presenting is snorkeling. If a presenter is “snorkeling” they can still dive deep into the technical details of their project, but they must come back up for air. So a “snorkeling” presentation talks about Q_1 and Q_3 at the surface, in such a way that the audience can breathe and understand the material. Then the presenter can dive deep into the technical details but comes up for air to summarize why those details are important. After summarizing the previous deep dive, the presenter can dive down deep again and then come back to summarize the Q_3 point of that topic. The audience can follow the presenter deep into the details or remain at the surface and move along from one Q_3 summary to the next.

Additional Presentation Tips (not exhaustive)

- If you worked with a team, give your team proper credit.
- Do not act as if you are the smartest person in the room.
- Be confident that you are in the room because the audience has confidence in your technical ability. Impress them with your ability to communicate complex concepts.
- Present with the attitude of collaborating with your audience. You will succeed if your audience understands your presentation and can act on it.
- Your primary job is to help the C-Suite (CEO, CFO, CIO, CDO, COO) make a good, data-driven decision.
- A common strategy for effective presentations is BLUF: Bottom Line Up Front

This is based on work by Eric Vance, Ilana Trumble, and Gregg Macaluso
Last updated by Prof. Eric Vance on April 6, 2024