Here's a link https://docs.google.com/presentation/d/1sZGjr5xWGKj57Hx0J2ZgSvE2MTzG29wYcJDedNWktbc/edit?usp=sharing to the lecture notes used in the video.

Defining success is a crucial part of managing a data science experiment. Of course, success is often context specific. However, some aspects of success are general enough to merit discussion. My list of hallmarks of success includes:

1. New knowledge is created.
2. Decisions or policies are made based on the outcome of the experiment.
3. A report, presentation or app with impact is created.
4. It is learned that the data can't answer the question being asked of it.

Some more negative outcomes include: decisions being made that disregard clear evidence from the data, equivocal results that do not shed light in one direction or another, uncertainty prevents new knowledge from being created.

Let's discuss some of the successful outcomes first.

New knowledge seems ideal to me (especially since I'm an academic). However, new knowledge doesn't necessarily mean that it's important. If it produces actionable decisions or policies, that's even better. (Wouldn't it be great if there was an evidence-based policy like the evidence-based medicine movement that has transformed medicine.) That our data science products have great (positive) impact is of course ideal. Creating reusable code or apps is great way to increase the impact of a project.

Finally, the last point is perhaps the most controversial. I view it as a success if we can show that the data can't answer the questions being asked. I am reminded of a friend who told a story of the company he worked at. They hired many expensive prediction consultants to help use their data to inform pricing. However, the prediction results weren't helping. They were able to prove that the data couldn't answer the hypothesis under study. There was too much noise and the measurements just weren't accurately measuring what was needed. Sure, the result wasn't optimal, as they still needed to know how to price things, but it did save money on consultants. I have since heard this story repeated nearly identically by friends in different industries.