Behind the Scenes of a Successful Data Analytics Project

Learn the steps to approach any data analytics project like a pro.

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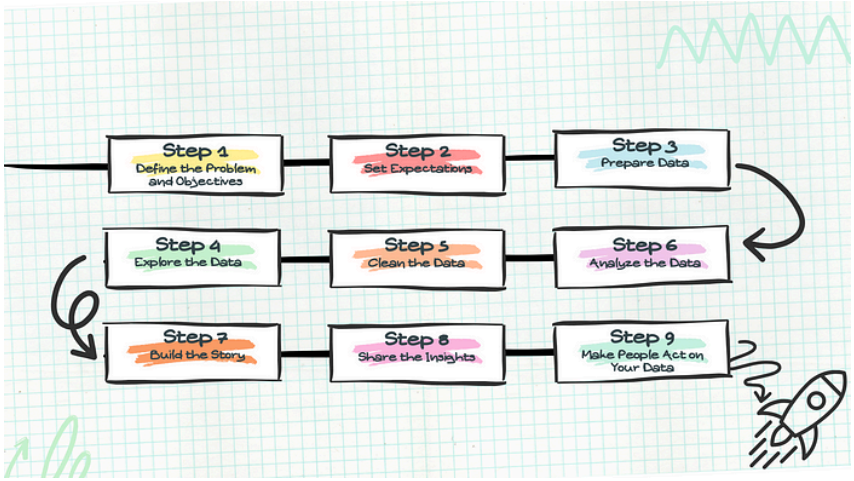
Having worked as a data analyst for a while and tackled numerous projects, I can say that even though each project is unique, there is always a proven way to approach it.

Today, I'll share with you the steps I usually take when working on a data project so you can follow them too.



Step 1: Define the Problem and Objectives

You cannot solve a problem or answer a business question if you do not understand what it is and how it fits into the bigger picture.

No matter how big or complex the task is, you must always understand what your business stakeholders are trying to achieve before diving into data. This is the part where you ask many questions, and before you get at least some answers, you are not diving into any data.

I learned this the hard way early in my career. Back then, when a vague request like *“We saw visitors drop this month. Can you check why?”* came, I would immediately jump into work. But every single time, I wasted hours trying to understand the real problem because I didn’t ask the right questions upfront.

I didn’t ask for context:

I didn’t ask stakeholders what they would do after receiving the data.

This initial first step is important because it affects everything else: from the **data sources** you will use to retrieve the data to the **metrics** you will analyze, the **format** you will use to present the insights, and the **timeline** you need to be ready for.

So don't ever skip it or just partially understand hoping you will figure it out along the way.

Step 2: Set Expectations

Once you've defined the problem, it's time to set expectations.

Stakeholders don't always realize how much time and effort goes into collecting and analyzing data. You are among the few people in the organization who can find the answers, so you receive many requests. That is why you need to prioritize and set expectations.

Understanding the problem, its complexity, how it aligns with the organization's goals from Step 1 helps prioritize and communicate to

stakeholders when the task can be done or why you will not be prioritizing it right now. You want to focus on the most impactful work.

A colleague of mine took a smart approach. They required stakeholders to fill out a questionnaire when submitting a task. This questionnaire included various questions about the problem description, timeline, etc., and it also asked, "*What will you do with the insights?*". This approach not only gathered all the necessary information upfront, eliminating the need for back-and-forth communication, but it also made stakeholders think twice before submitting another *"Can you quickly look at...?"* request. Genius, right?

Step 3: Prepare the Data

Now that you've defined the problem and set expectations, it's time to prepare the data.

This is the step where you ask youself:

Another critical question to answer at this step is **“What metrics should I measure?”**

I always align my metrics with the business objectives. For instance, if the goal is to increase brand awareness, I prioritize metrics like impressions, branded search volume, direct traffic, and reach. If the objective is to drive sales, I focus on conversion rates, average order value, and customer acquisition cost. I also explore secondary metrics (demographics, device usage, customer behavior) to ensure my analysis is comprehensive and paints a complete picture.

Step 4: Explore the Data

Now comes the fun part — Exploratory Data Analysis (EDA). I love this part because it is where all the magic happens. Like a detective, you review the evidence, investigate the case, formulate hypotheses, and look for hidden patterns.

As you explore the data, you:

If the exploration step shows data needs to be cleaned (and believe me, it is more than the case that it is not), you proceed with data cleanup.

Step 5: Clean the Data

No matter how polished a dataset looks at first glance, never assume it's clean. Data quality issues are more common than not.

The most common data quality problems you need to fix are:

1. **Missing values:**

The way you will handle missing data differs from case to case.

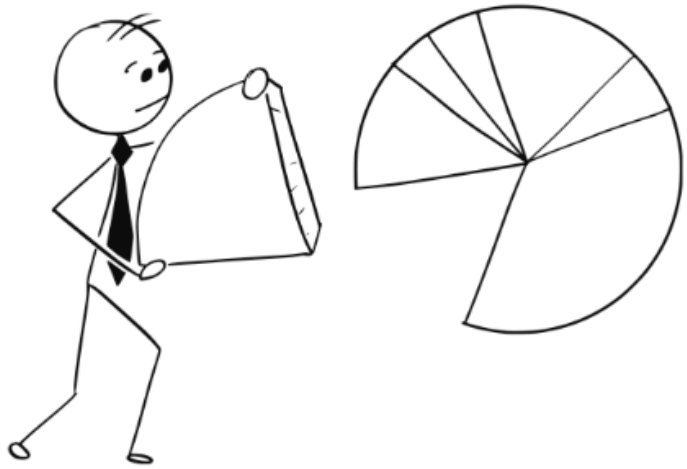
2. **Inconsistent data:** Check data for inconsistent data formats and standardize them.

3. **Duplicate records:** Identify and remove duplicate records to avoid skewing results.

4. **Outliers or errors in data:** Check for outliers or errors in the data. Based on its context, decide whether to remove, fix, or keep it.

Once your data is cleaned, it is time to proceed to the analysis phase.

Step 6: Analyze the Data



This is where your detective work starts to pay off.

The key is to start with a very focused and specific question and not to be biased by having a hypothesis in mind. Using data to tell the story you or your colleagues want or expect to hear might be tempting, but you must let the dataset speak for itself.

I prefer to use the root-cause approach when analyzing data. For example, to answer the

question, *“Why do we see a drop in signups?”* I would follow these 10 steps:

1. **Trend analysis:** When does the drop happen for the first time? Is it seasonal?
2. **Traffic and conversion rates:** Are fewer people visiting the site or fewer visitors signing up?
3. **Offer performance:** Is the decline widespread or isolated to a particular offer?
4. **Website Performance:** Are there any technical issues or broken links?
5. **User insights:** Is the pattern specific to a particular segment or all users?
6. **User journey analysis:** Are there any friction points where potential customers drop off?
7. **Campaign performance:** Have any recent marketing campaigns or changes in strategy, budget allocation, or execution impacted effectiveness?
8. **Competitor activity:** Have competitors launched a marketing campaign, new product, or feature? Have they changed their prices? Is there another reason that might be attracting customers away?
9. **Market trends:** Are there market trends and changes in consumer behavior affecting sales in the industry?
10. **Customer feedback:** Are customers dissatisfied with the offering? Did their needs change? Do we receive more support tickets?

Another important point is that the fastest and most accurate answers aren’t usually the same, and a lot depends on **the context.** That is why you need to collaborate with cross-functional teams and develop strong domain and industry knowledge.

Step 7: Build the Story

This step is my second favorite after data exploration because it is when all the data pieces fall into place, revealing a clear story and making perfect sense.

A common mistake here is including everything you found interesting instead of focusing on what the audience cares about.
I get it. After working hard to get insights, it's tempting to show off all the cool stuff you did. But if you overload your audience with data, you can further confuse them.

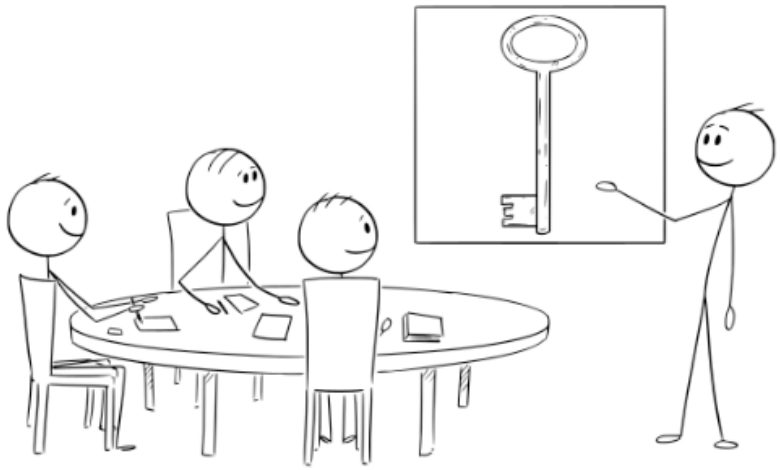
Don't throw every data point at stakeholders; focus on what matters most to your audience instead. Think about their level of seniority, how familiar they are with the topic, their data literacy level, how much time they have, and whether you're presenting in person or sending a report via email. This way you don't waste anyone's time — yours or theirs.

Lastly, always include actionable recommendations to stakeholders in your story.

Your story should guide stakeholders on the next steps, ensuring that your insights drive meaningful decisions.

This brings us to the next point — sharing the insights and recommendations.

Step 8: Share the Insights



As a data analyst, you have the power to drive change. The secret lies in how you share data and tell the story.

First, consider the format your audience expects (see Step 1). Are you creating a dashboard, emailing a report, or presenting in person? Data storytelling becomes crucial for live presentations.

A great data story blends **data, narrative, visuals, and practice:**

Data: Focus only on insights with real business impact. If you can't find a compelling reason why your insight will matter to the audience, if

it’s unclear what they should do with the insights, or if the business impact is minimal, move it to the appendix.

Narrative: Ensure that your story has a clear structure.

This keeps your audience interested and makes your story memorable.

Visuals: The chart that helped you discover an insight isn’t always the best for presenting it. Highlight the key points and avoid clutter. For example, if you analyzed 10 categories but only 2 are critical, focus on those.

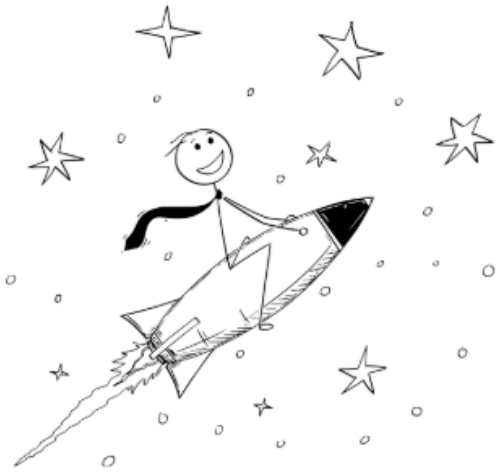
Practice: Practicing helps you feel more comfortable with the material. It also allows you to focus on important things like eye contact, hand gestures, and pacing. The more you practice, the more confident and credible you will appear.

You might think that once you’ve shared your insights, your job as a data analyst is done. In reality you want people not only hear what you’ve discovered but also act on your insights. This leads us to the final step — making people act on your data.

Step 9. Make People Act on Your Data

Seeing my work have an impact and a chance to drive real change brings me the most satisfaction. So don’t let your hard work go to waste either.

I understand that this might feel like a lot right now, but please don’t worry. With practice, it will become easier, and before you know it, these steps will become second nature.



Good luck on your data analyst journey! You’re on the right track!