Team Project

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$ echo "Data Sciences Institute"
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Yesterday

1. Team Project guidelines
2. Developing a project idea
3. Git review

Goal

Develop a program that uses data creatively to solve a problem or provide insights that have a positive business impact.

Learning Outcomes

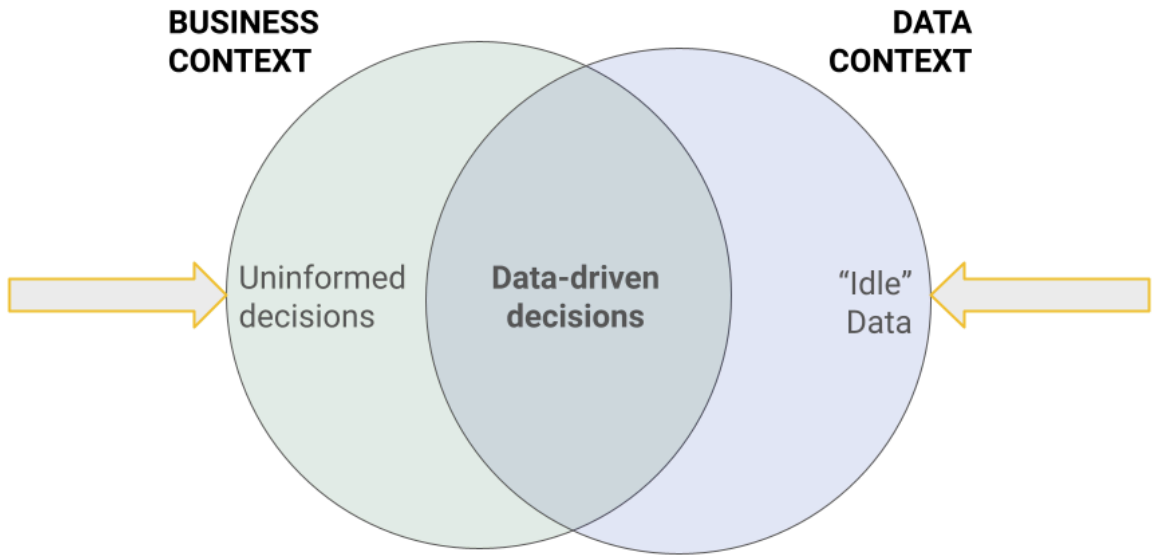
1. Resolve merge conflicts.
2. Describe common problems or challenges a team encounters when working collaboratively using Git and GitHub.
3. Create a program to analyze a dataset with contributions from multiple team members.

See Team Project Part 1 for requirements.

Developing a project idea

How can we get the most value out of our data, and use it to better inform business decisions?

- We want these contexts to overlap!



Developing a project plan

1. Understand the business context.
2. Identify an opportunity.
3. Develop your analysis.
4. Present your results.

Developing a project plan

Check: are your insights actionable?

Check: how robust is your analysis?

Check: what are the caveats or unknowns?

See repository for detailed requirements.

Today

1. Presenting your work and sharing it with others
2. Rules of engagement and strategies for effective teamwork

Presenting your work

1. Understand your target audience

- What knowledge do they have about your project?
- Provide the necessary context.
- Reinforce the insights that **they** can act on.

1. Understand your target audience

Example: We are presenting our analysis of office space usage to the department heads who assign seating. They are not technical, but understand the problem and are looking for a solution. Furthermore, they have their own prior perspectives on office space utilization.

2. Clearly articulate the takeaways

- Make sure your audience understands the most important information.
- Don't add unnecessary detail, but be prepared to speak in depth if asked.

2. Clearly articulate the takeaways

Tips for Amazon Writers:

1. Make sentences clear and concise (less than 30 words).
    - "Due to the fact that..." -> "because".
2. Replace adjectives with data.
    - "We improved performance" -> "we reduced latency from 10ms to 1ms."
3. Eliminate weasel words.
    - "Nearly all customers." -> "87% of Amazon Prime members."
4. Reply to questions with one of four "Amazon answers":
    - Yes / No / a number / I don't know (and will follow up when I do)

2. Clearly articulate the takeaways

Example: Our company could reduce real estate overhead, while maintaining productivity and employee comfort, if we removed the assigned seating for 10% of teams but updated 25% of our office space to be flexible seating.

3. Highlight the value added

- Quantify as much as possible.
- Indicate how your work improves over previous work or the status quo.

3. Highlight the value added

Example: Updating the office spaces would add 5% to our real estate costs over the next year, but would save 10% per year once the new seating is implemented.

Rules of engagement and strategies for effective teamwork

Think about: how did yesterday go?

Do you think your team functioned well?

What could be improved?

Would the others on your team agree with you?

Rules of engagement

Successful teams:

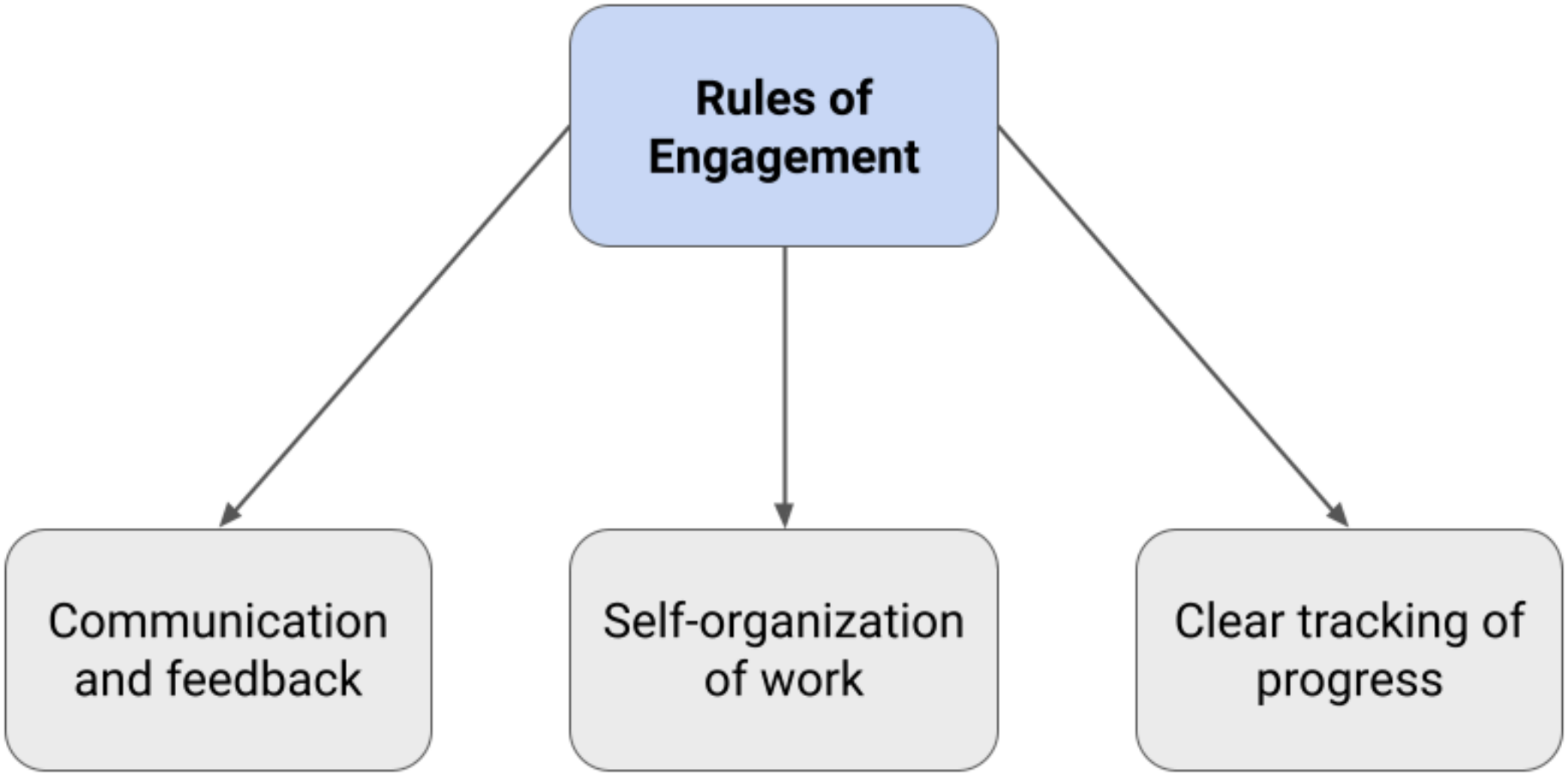
1. Have strong communication.
2. Have a clear undertanding of everyone's role on the team.
3. Work collaboratively towards a common goal.

Rules of engagement

- Every time will land on slight different rules of engagement!
- The key is to be aware of what works and what doesn't, and adjust accordingly.

Rules of engagement

- However, **rules must be explicit**.
- Miscommunication happens when rules are left up to individual interpretation.


Rules of Engagement
Communication and feedback
Self-organization of work
Clear tracking of progress

Communication and feedback

1. **Feedback as a habit**. A feedback framework helps teams focus on improving processes instead of laying blame.
2. **Respectful and honest communication**. For discussions to be productive, team members must feel able to both speak their minds and discuss their mistakes without judgement.

A self-organizing team

1. **Clear accountability and ownership of tasks**. Every action item should have someone assigned. Of course, the assigned person can change if workloads become unbalanced.
2. **Be solution-oriented**. Instead of only presenting problems, try to always suggest a possible solution along with a problem.

Clear tracking of progress

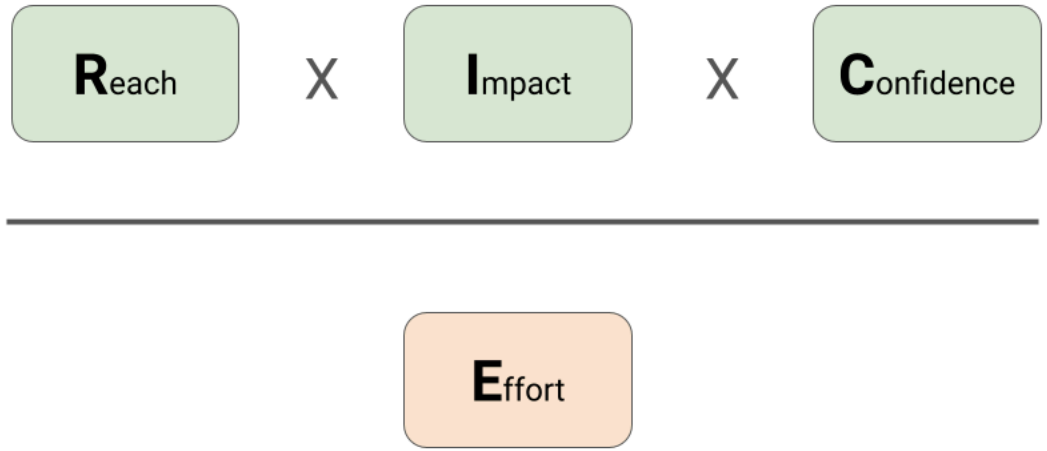
1. **Communication of roadblocks**. It is just as important to communicate roadblocks and failures as successes. The faster problems are identified, the faster they can be addressed.
2. **Track all of your tasks**. Tracking is necessary to objectively assess your progress as a team. The data-driven mindset applies here too!
3. **Documentation of work**. The level and type of documentation should be agree upon as a team, and included in the rules of engagement. Team members should be able to understand and continue each others' work.

Prioritization

Many different frameworks exist.

The **RICE** prioritization framework is an example, in which we try to quantify the:

1. Reach of a project (how many people it will affect).
2. The impact that it will have.
3. The confidence that we have in our ability to deliver.
4. The effort that it will take.

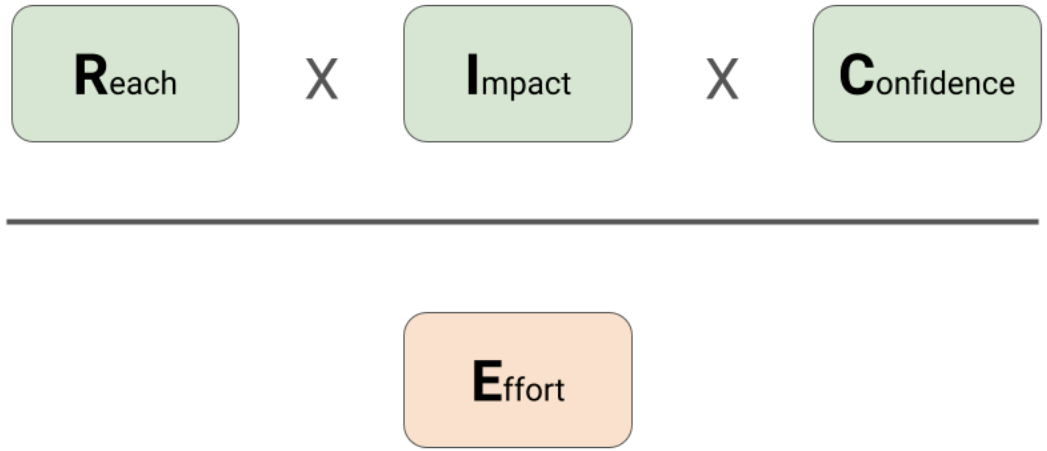


Prioritization

Example

Reach: Our project will affect the real estate costs of the entire company, however real estate costs are only 5% of the company's overhead costs. 3/5.

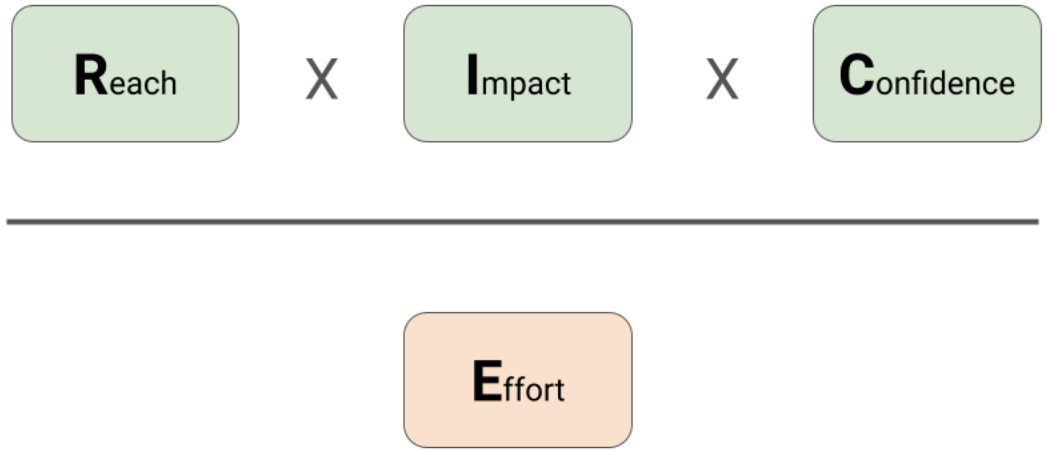
Impact: This project has the potential to reduce real estate costs by a significant fraction. 4/5.



Prioritization

Example

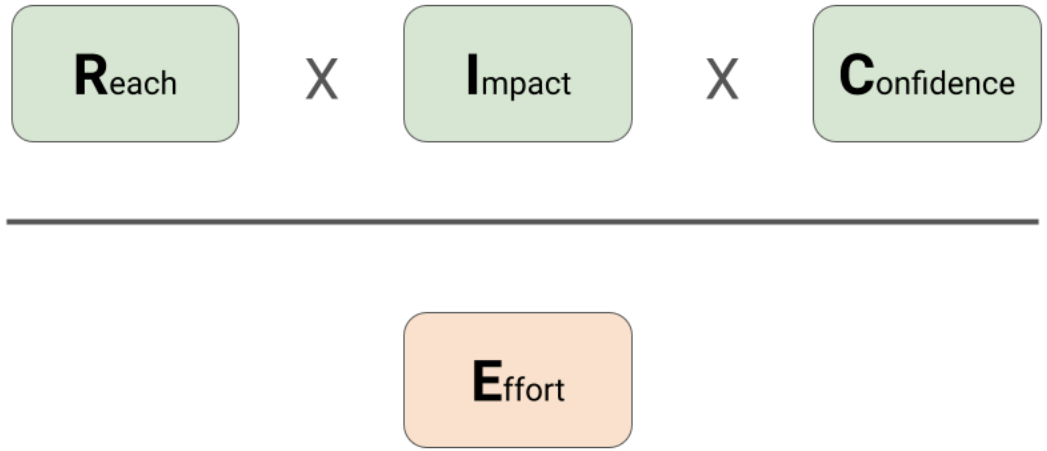
Confidence: Prior to starting this project, we have anecdotally seen how office space is used, however we are unsure of the specific usage metrics. We're also unsure whether we can accurately get the data on how frequently individuals or teams use office space. 2/5.



Prioritization

Example

Effort: Integrating internal company data will be challenging, but the number of datasets and systems should not be large. Analyzing against standard office costs, renovation costs, and floor capacities will be more complex. 4/5.

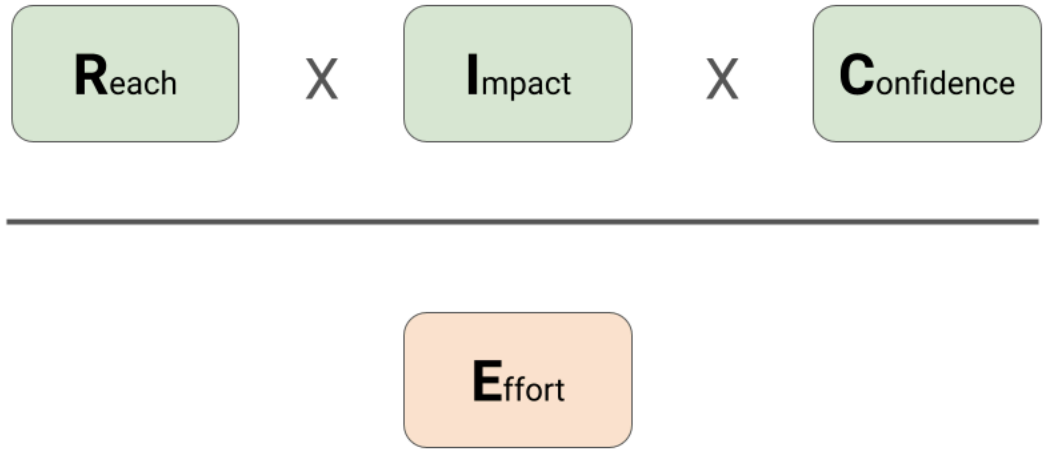


Prioritization

Example

TOTAL SCORE: 3 x 4 x 2 / 4 = **6**

It is important to set a relative scale for these numbers.



Prioritization

It is important to limit unimportant "busy work"; we want to be working on projects that will deliver the most long-term value.