Design For Impact

A practical model for maximizing and communicating impact in statistical collaboration.

Traditionally, statisticians have often been brought into interdisciplinary projects as technical experts: here is the dataset, now tell us something interesting. Yet our training positions us to contribute well beyond the analysis itself. When we understand the domain, its stakes, and the people our evidence will serve, we can help our collaborators frame better questions, make more intentional analytical choices, and use the findings to move the domain forward. As AI lowers the barriers to programming and routine data analysis, we think statisticians should embrace this broader role as strategic collaborators and decision-makers.

Design For Impact is not a replacement for the collaboration frameworks you may already know. The ASCCR framework (Attitude, Structure, Content, Communication, Relationship; Vance & Smith, 2019) captures important dimensions of excellent statistical collaboration. Within its Content component, the $Q_1Q_2Q_3$ framework (Qualitative-Quantitative-Qualitative) describes the organic life cycle of a project: learn the domain and its problem (Q_1), carry out an appropriate analysis (Q_2), and interpret what the results mean (Q_3). Design For Impact adds three guiding principles: alignment in Q_1, intentionality in Q_2, and translation in Q_3. It encourages us to establish a shared understanding of the broader goal and intended stakeholders, select an analysis pathway that actually serves those goals, and communicate the findings in terms of the decisions or actions they enable. In other words, we want to connect the why, how, and so-what of a statistical engagement.

We call Design For Impact a process model: a structured way to think about maximizing and communicating impact in statistical collaboration. Its companion, the one-page Design For Impact Tool, turns that model into five fillable components: Vision, Impact, Partnership, Analysis Pathway, and Narrative. These ideas come from collaboration research, our own experiences, and feedback from students and practicing statisticians. The tool is meant to support conversation and reflection, not create extra paperwork for its own sake. You might share the Tool with a domain expert, use it privately to prepare for a meeting, or simply carry its principles as a mental model. The two pages that follow are a companion to the Implementation Guide: use them to understand what each component is meant to capture, see a full example, and decide how you will make Design For Impact your own.

Three principles, five components

- **Q_1 — ALIGNMENT:** Vision, Impact, Partnership. Establish the big picture, intended stakeholders, and expectations.
- **Q_2 — INTENTIONALITY:** Analysis Pathway. Choose an analytical approach that enables the intended impact.
- **Q_3 — TRANSLATION:** Narrative. Explain the findings in terms of what they mean and what they enable.

Let’s explore these components in greater depth and see how they fit into the $Q_1Q_2Q_3$ framework.

Q_1 | Align with the domain and with one another

This is the impact-planning stage. Rather than jump straight into the requested method, use the first three components to develop a shared understanding that will serve as your basis for action.

Vision

Capture: The long-term goal this collaboration will help advance for the organization or team.

Consider: If this work was exceptionally successful, what contribution will you have made to society or to the bottom line? What purpose, cause, or belief motivates this project? What long-term outcome will serve as our guiding light?

Impact

Capture: The people this work will serve and the decisions or actions the evidence will enable.

Consider: Who will be affected by this work other than the collaborators? How will stakeholders use the evidence we provide?

Partnership

Capture: The expectations and motivations each collaborator will bring to a successful working relationship.

Consider: What does each collaborator hope to gain and contribute? What are the expectations for scope, timeline, or compensation?

Q_2 | Be intentional about the analysis

The statistical approach should follow from the impact you hope to enable. Sometimes one clear visualization is more useful than a complicated model; sometimes the client needs inference, and other times prediction. These preferences may be known to a domain expert even when they do not use statistical terminology.

Analysis Pathway

Capture: A shared plan for gathering evidence that will enable the intended impact.

Consider: What do the stakeholders seek to understand, compare, explain, or predict? Which study design, dataset, model, or visualization would best meet those needs?

Q_3 | Translate evidence into action

One of our central responsibilities as statisticians is to translate data-derived insight into something both empirically accurate and relevant to the audience. You may need a different narrative for researchers, managers, or other stakeholders.

Narrative

Capture: The concise, evidence-based story of how the analysis contributed to the vision, impact, or partnership.

Consider: What is the key takeaway of the analysis? Who are your intended audiences and how will the Narrative be tailored to them? How do the findings enable a decision or action? Who are the direct and indirect stakeholders?

Use the prompts as guides, not a script

Make the model your own. The “consider” questions are guides and examples, not a script for a client meeting. Learn what each box is meant to capture and adapt your questions to the client and the domain.

If a question falls flat

A client may not know how to answer “What contribution will this make to society?” on the spot. Try a more specific question like, “Who needs these results and to make what decision?” Return to the topic later if needed. Our goal is deeper understanding, not simply a completed worksheet.

A complete example: Marketing campaign

Imagine a company wants to improve the performance of its digital advertising. The marketing team asks a statistician to examine conversion data (i.e., when a user is shown an advertisement and decides to buy the product and, in other words, is “converted”). Here is how the five components could connect in this fictitious example.

- **Vision:** Maximize customer engagement and lifetime value through more personalized marketing strategies.
- **Impact:** Help the marketing team allocate budget across customer segments to maximize conversion.
- **Partnership:** Deliver within two weeks, before the next campaign planning cycle begins.
- **Analysis pathway:** Fit a logistic model to estimate conversion probability across customer segments, with interpretable visualizations that guide budgetary decisions.
- **Narrative:** The model identified a customer segment with a significantly higher likelihood of conversion. Marketing shifted its budget toward this segment, increasing overall conversion from 8% to 14% and generating $86,000 in additional revenue.

Notice the Narrative progression: the statistician presents a useful analysis, that leads to a particular decision or action, and we tell the story about what changed as a result.

Make Design For Impact your own

- **Use it together.** Share the Tool with the domain expert to build common understanding.
- **Use it as a personal guide.** Prepare, take notes, and reflect; confirm your understanding with the client.
- **Use it as a mental model.** Pursue alignment, intentionality, and translation without a worksheet.

To think about before class

For one past or future project: who will use the findings, which decision will they make, and how might that change your analytical approach as the statistical collaborator?

For the Design For Impact Tool, Implementation Guide, and more examples, visit: jettpalmer.github.io/design-for-impact