

Designing Analytics Projects - Cheat Sheet

1. THE ANALYTICS PROJECT BRIEF

Purpose: Prevent failure (Wrong problem/metric/stakeholders/scope). **“Why Now”:** Context/Urgency.

#	Section	Key Question & Notes
1	Problem	Decision? Who asks & why now? Ultimate decision maker?
2	Metrics	Primary: Precise def (SQL-ready). Counter: Guardrails (Hard stop) vs Tradeoffs.
3	Stakeholders	Power-Interest Grid. Champions (Advocates) & Blockers (Resistance).
4	Methodology	Analyses? Data availability? Validity Checks (Stop/Go gates).
5	Scope	In Scope vs. Out of Scope (prevents scope creep).
6	Success	Analytical (Stat sig) vs Business (Action). Decision Criteria Table (Pre-commit).
7	Timeline	Key milestones.
8	Risks	Assumptions made.
9	Ethics	PII, Bias risks.
10	Pre-Mortem	“It failed. What happened?” Causal story from future. Surfaces hidden risks.

2. STAKEHOLDER MANAGEMENT & INFLUENCE

Power-Interest Grid: Hi/Hi=**Manage Closely**; Hi/Lo=**Keep Satisfied**; Lo/Hi=**Keep Informed**; Lo/Lo=**Monitor**. **Blockers:** Identify motivation (Budget, Ego, Workload). **Pre-brief privately** (No surprises).

The Influence Compass (4 Strategies): * **Authority (North):** Leverage hierarchy. *“The CEO asked...”* (For: Hierarchy-respecting). * **Credibility (South):** Leverage expertise. *“Data Science validated...”* (For: Technical/Skeptics). * **Social Proof (West):** Leverage data/peers. *“70% of peers do...”* (For: Risk-averse). * **Consistency (East):** Leverage alignment. *“Aligns with Q2 goals...”* (For: Strategy-focused).

3. KEY CONCEPTS & DEFINITIONS

- **Goodhart’s Law:** “When a measure becomes a target, it ceases to be a good measure.”
- **Counter-Metrics: Guardrail:** Hard stop (Fraud). **Tradeoff:** Acceptable cost (Short-term rev). **“What Breaks”:** Direct neg, Quality, Segments.
- **Selection Bias:** Sample != Population (e.g., analyzing only onboarded users).
- **Processing Fluency:** Simple = Trustworthy (30s rule). **Message Theory:** “To [Person] about [Topic], rec is [Action].”

4. ACQUISITION ANALYSES (“Getting Customers”)

Analysis	Core Question	Key Concepts & Notes	Common Pitfalls / Counter-Metrics
Funnel	Where do they drop?	Events: Define precisely. Views: Abs vs %. Segment: Device, Source.	Pitfalls: Missing events, cross-device. CM: AOV, Fraud Rate, Support Tickets.
Attribution	Who gets credit?	Models: First (Aware), Last (Close), Linear, Time-Decay, U-Shaped. Windows: 7d vs 30d.	Pitfalls: No “right” model. Find disagreements. CM: Brand Awareness, Lead Quality.

Analysis	Core Question	Key Concepts & Notes	Common Pitfalls / Counter-Metrics
Campaign	Did X cause Y?	Counterfactual: What happened w/o campaign? Methods: Holdout (Gold), Geo-Match, Synthetic.	Pitfalls: Corr != Causation. Pull-forward. Contamination. Confounds: Competitor actions.
CAC / LTV	Unit Economics	CAC: Cost/Acq. LTV: Rev * Margin * Life. Ratio: > 3:1 (SaaS). Payback: Months to recover.	Pitfalls: Blended CAC hides poor channels. LTV on rev not margin.

5. RETENTION & GROWTH ANALYSES (“Keeping & Growing”)

Analysis	Core Question	Key Concepts & Notes	Common Pitfalls / Counter-Metrics
Retention	Do they return?	Active: Strict def. DN vs Rolling . Curve: Flattens = PMF. Cohorts: Compare trends.	Pitfalls: “Sugar Diet” (Growth masks churn). Driver Trap: Corr != Causation. Test mandates! CM: Signup completion, “Zombie” retention.
Power User	Who matters?	Pareto: Top % drive value. Conc: Gini. Strategy: Optimize Power OR Broaden Base.	Pitfalls: Alienating casual majority. CM: Casual user satisfaction, Content diversity.
Failure	What’s broken?	Exploratory. Manual sample. Taxonomy: Categorize. Size: By Impact (\$) not Vol.	Pitfalls: Skipping manual review. Bad taxonomy. CM: Relevance (bad results < zero results).
Expansion	Why pay more?	Freemium: Limits=triggers. Drivers: Limits, Discovery. Dilemma: High limit (no conv) vs Low.	Pitfalls: “High-value” free != ready. CM: Free user retention, Brand trust.
Ecosystem	1+1 = 3 or 1.5?	Complements: A helps B. Substitutes: A hurts B. Selection Bias: Multi-prod users engaged.	Pitfalls: Assuming causation. Use holdouts/natural exp. CM: Cannibalization.

6. APPLIED SCENARIOS & TIPS

- **Red Flags:** “Explore data”, No decision, No hypothesis, “Why now?” undefined.
- **B2B Attribution:** Long cycles. Last-touch undervalues content. Use Multi-touch/Time-Decay.
- **Zero Results Search:** High impact (\$). Counter-metric: Relevance (don’t show junk).
- **Pre-Mortem Strategy:** Write a **causal story** from the future. “We did X, Y happened, because Z.”
- **Validation:** Stop/Go gates, Inter-rater reliability (>80%), A/B Tests / Holdouts.