# Dashboard Design Notes

**1. Define the Purpose and Audience**

**Goal:** Know exactly *who* you're designing for and *why*.

* **Ask:**
  + Who will use this dashboard? *The dashboard will be used by pharmaceutical industry experts who want to gain insights on FDA-approved drugs market, specially on patents and exclusivities granted by the FDA: pharmaceutical business strategists, sales representatives, regulators and other industry experts.*
  + What key questions should it answer? *It should offer a general overview on the FDA-approved drug market volume, the top firms holding active patents and specific trends on patents and exclusivity grants.*
  + How often will they check it? (daily, weekly?) *The dashboard will not be updated periodically because I have not yet configured an ETL connection with the FDA Orange Book database. However, ideally, it would be checked yearly to take the temperature on the situation regarding patents and exclusivities granted by the FDA.*
  + What actions will they take based on the dashboard? *Insights extracted from the dashboard will serve as a starting point to build robust and intelligent business strategies or to refine the existent ones. The dashboard will be intended to offer, at a glance, the current situation regarding patents and exclusivities, in comparison to the historical data.*

**2. Collect and Prioritize Metrics**

**Goal:** Focus on *what matters most*.

* **Gather** all possible metrics (KPIs, performance stats, trends, etc.).
  + *Total number of drug applications at the FDA Orange Book*
  + *Total number of FDA-approved drugs at the FDA Orange Book*
  + *Total number of firms with FDA-approved drugs at the FDA Orange Book*
  + *Total number of patents at the FDA Orange Book*
  + *Total number of active patents at the FDA Orange Book (vs last year)*
  + *Total number of patents expiring this year (vs last year)*
  + *Total number of exclusivities at the FDA Orange Book*
  + *Total number of active exclusivities at the FDA Orange Book (vs last year)*
  + *Total number of exclusivities expiring this year (vs last year)*
  + *Innovators vs generic distribution*
  + *FDA approval tendency over the last years*
  + *Top Ingredients in FDA-approved drugs*
  + *Top firms with more approved drug applications*
  + *Top Dosage Forms*
  + *Top Administration Routes*
  + *Top firms with active patents*
  + *Patent submission/expiration trend*
  + *Top firms with active exclusivities*
  + *Top patent uses*
  + *Top exclusivity types*
  + *Co-occurrence matrix for patent use codes*
  + *Co-occurrence matrix for exclusivity types*
* **Prioritize** by importance to the user goals.
* **Group** similar metrics into logical categories.

*General Overview*

*Patents Analysis*

*Exclusivities Analysis*

**3. Choose the Right Layout**

**Goal:** Organize information to *match how the brain processes* it.

* Follow **Information Hierarchy**: Important stuff at the top or top-left.
  1. *KPI cards (Top)*
  2. *Pie distribution (Middle left)*
  3. *Historical trends (Middle right)*
  4. *Bar charts (Bottom right)*
  5. *Co-occurrence matrix (Bottom left)*
* Use the **Z-Pattern** or **F-Pattern** reading habits. *Z pattern will be the one used.*
* Group related info **together** with proximity and whitespace

**FDA Orange Book |** Overview

*1,987*

*3,987*

*23,987*

*Firms with FDA-approved drugs*

FILTERS

*Distribution of NDAs vs ANDAs*

*Drug applications*

*FDA-approved drugs*

*FDA Approval over the last years*

Innovator, Generic

OTC, Prescription



*Top Ingredients, Top Routes by Approved Drugs*

*Top Firms, Top Dosage Form by Approved Drugs*

**FDA Orange Book |** Patents

*13.9 years pasyear*

*3,987*

*23,987*

*Average Patent Duration*

FILTERS

*Total Patents*

*Active Patents*

-15% YTD

*Patent submission over the last years / Patent expiration for the next years*

Innovator, Generic

OTC, Prescription



Dosage Form

Route

*Top Ingredients, Top Dosage Forms and Top Routes*

*Top Firms*

**FDA Orange Book |** Exclusivities

*1,987*

*3,987*

*23,987*

*Firms with FDA-approved drugs*

FILTERS

*Distribution of NDAs vs ANDAs*

*Drug applications*

*FDA-approved drugs*

*FDA Approval over the last years*

Innovator, Generic

OTC, Prescription



Dosage Form

Route

*Top Ingredients*

*Top Firms*

**4. Pick the Right Visualizations**

**Goal:** Show each type of data in the clearest way possible.

* **Trends over time?** → Line Chart
* **Comparing categories?** → Bar/Column Chart
* **Parts of a whole?** → Pie Chart (sparingly) or Donut Chart
* **Performance against a goal?** → Bullet Chart, Gauge, or KPI Card
* **Maps/geography?** → Heatmaps or Geo Charts

✅ **Action:** Match each metric to its ideal chart type.

**5. Apply Visual Design Best Practices**

**Goal:** Make it clean, easy to scan, and beautiful without distractions.

* **Keep it simple**: Avoid 3D effects, fancy fonts, unnecessary colors.
* **Use consistent colors**: E.g., blue for neutral, red for bad, green for good.
* **Emphasize critical info**: Bigger, bolder, or different color.
* **Limit colors**: 4–5 max per dashboard.
* **Align everything** perfectly: Use grids.

✅ **Action:** Create a color and typography guide for your dashboard.

**6. Optimize for Interactivity (if needed)**

**Goal:** Let users explore without overwhelming them.

* Add **filters** (date ranges, categories). *Filters: Product type (OTC, Prescription and Discontinued), Application type (Innovator and Generic).*
* Add **drill-downs**: Click on a chart to see more details.
* Add **tooltips**: Hover to get more info without clutter.

✅ **Action:** Map where interactivity will improve user experience.

**7. Test and Refine**

**Goal:** Make sure it *works for real users*, not just for you.

* Share early drafts with users (or people similar to them).
* Watch them use it (even 5–10 minutes can reveal issues).
* Ask:
  + Is anything confusing?
  + Can you find [specific KPI] easily?
  + What do you want to click on?

✅ **Action:** Iterate based on feedback — clean, tweak, simplify.

**8. Launch and Monitor Usage**

**Goal:** Ensure the dashboard stays relevant and useful.

* Track:
  + Are people using it?
  + Which sections are most/least used?
* Plan periodic reviews (every 3–6 months) to update metrics or visuals.

✅ **Action:** Set a reminder for dashboard review sessions.