Many IDRC staff and grantees have commented that it is useful to refer to good design models when deciding what types of visualizations to apply to their work. It can also be extremely useful to see how designers interpret and adapt designs based on their experience with data visualizations. Based on this rationale, this study took the opportunity to use Amanda Cox’s extensive knowledge to redesign four of the reviewed examples to demonstrate good practice. The final example in this series takes on a different form than the original example, and is meant to highlight the potential uses for applying more interactive designs to communicate research findings.

### Rationale for Redesigns

**Amanda Cox:** The following examples demonstrate ways to use color, sorting, and charting forms to visualize data effectively. In each of the redesigns, I tried to stay reasonably faithful to the original visualizations. For example, the overall sizes of static graphics were not changed. In three of the four cases, I used the typography and color palettes from the original designs. My assumption was that the visualizations would remain parts of larger reports or Web sites, so I did not worry about sourcing or deep explanations of methodology.
Example 1: Incidence, gender and environment in methodological proposals

(See original design on page 1)

The first redesigned version of this table makes only simple, cosmetic changes (see above). Most importantly, I updated the colour scheme so it is more intuitive. I moved the key so it is closer to the corresponding information and easier to reference. I removed duplicate country labels and used the rules in the table to separate the countries. This makes patterns by country easier to see. For example, the proposals from Brazil are much more likely to strongly address gender, incidence, or environmental perspectives than those from Peru. I adjusted the language in the precede to address the findings of the study, and the actions taken as a result of the data.
The second version is a Venn-diagram (see above). This version drops the weak presence indicator and the country names from the table. If either of these columns is critical, this is a bad idea. But removing some information can make patterns easier to see. For example, it is now immediately obvious that gender is addressed less frequently than environment. A text call-out emphasizes this point. Different types of overlap (e.g., which proposals address incidence and environment, but not gender?) are not immediately obvious.

Example 2: Summary scorecard on budget transparency

(See original design and redesign on page 4)

In this redesign, I sorted the states by average budget transparency score, not alphabetically. This means the order of the table corresponds to the value of interest; alphabetical sorting rarely reveals patterns. Vertical text is difficult to read, so I replaced it with horizontal text. I removed the decimal from the average score.
Example 2: Original design

Summary Scorecard on Budget Transparency in Selected States

<table>
<thead>
<tr>
<th>Transparency Parameters</th>
<th>Andhra Pradesh</th>
<th>Assam</th>
<th>Chhattisgarh</th>
<th>Gujarat</th>
<th>Jharkhand</th>
<th>Madhya Pradesh</th>
<th>Maharashtra</th>
<th>Odisha</th>
<th>Rajasthan</th>
<th>Uttar Pradesh</th>
<th>Average for Selected States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of Budget Documents</td>
<td>65</td>
<td>65</td>
<td>64</td>
<td>67</td>
<td>60</td>
<td>67</td>
<td>66</td>
<td>65</td>
<td>68</td>
<td>60</td>
<td>64</td>
</tr>
<tr>
<td>Completeness of the Information</td>
<td>73</td>
<td>71</td>
<td>72</td>
<td>75</td>
<td>76</td>
<td>76</td>
<td>75</td>
<td>73</td>
<td>79</td>
<td>75</td>
<td>77</td>
</tr>
<tr>
<td>Facilitating Understanding and Interpretation of the Information</td>
<td>50</td>
<td>50</td>
<td>49</td>
<td>48</td>
<td>50</td>
<td>49</td>
<td>50</td>
<td>49</td>
<td>50</td>
<td>48</td>
<td>50</td>
</tr>
<tr>
<td>Timeliness of the Information</td>
<td>71</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>71</td>
<td>72</td>
<td>71</td>
<td>72</td>
<td>71</td>
</tr>
<tr>
<td>Audit and Performance Assessment</td>
<td>30</td>
<td>29</td>
<td>30</td>
<td>30</td>
<td>29</td>
<td>29</td>
<td>30</td>
<td>30</td>
<td>29</td>
<td>30</td>
<td>29</td>
</tr>
<tr>
<td>Scope for Legislative Scrutiny</td>
<td>55</td>
<td>55</td>
<td>54</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
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<td>55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Practices relating to Budgeting for Disadvantaged Sections</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>Overall Budget Transparency Score (in %)</td>
<td>51.8</td>
<td>50.1</td>
<td>55.1</td>
<td>61.7</td>
<td>48.4</td>
<td>60.2</td>
<td>48.3</td>
<td>52.6</td>
<td>44.0</td>
<td>43.5</td>
<td>51.6</td>
</tr>
</tbody>
</table>

Example 2: Redesign
Because of the way the data was collected (i.e., using “A”, “B” or “C” grades and a corresponding value for each), this amount of precision is unlikely to be meaningful. I made the map of India smaller so its size is consistent with the amount of information it contains. I slightly shortened some of the labels, so they can be closer to the data. Most importantly, I added shading to the table, so patterns are easy to see. The breaks in the key correspond to grades in the original evaluation. Without studying the table, it is now obvious that document availability and completeness had high scores, while fiscal decentralization had low scores. The highest-scoring states generally had high scores for timeliness. Given its overall score, Odisha’s audit and performance assessment score is very low, as is Rajasthan’s score of timeliness. In the previous version of the chart, seeing these sorts of patterns and outliers requires close study.

Example 3: Trinidad and Tobago Trade Report

(See original design on page 6)

For inexperienced developers, Tableau can be a very useful tool for adding basic interactivity to charts. Recognizing this, I wanted to leave this chart in Tableau, but redesign it, so that it is better suited for sharing with a broader audience (see page 7). I removed unnecessary legends, and labeled the lines directly so understanding the chart is less of a decoding exercise. I changed the colours of the bar charts so they are linked to the top charts in a meaningful way. I re-named the variables so they are easier to read. For example, it is unnecessary to state that the data is shown in US dollars in eight unique places, including rollover. I made the initial view more informative by removing unnecessary interactivity. I added simple sentences describing what the data shows to take some of the burden off of the reader. With more data, I would have liked to have taken advantage of some more of Tableau’s strengths. For example, including charts over time for each industry might help explain why the overall changes are happening. An option to show the trends in either U.S. dollars or local dollars would help explain how much of the changes are simply due to currency fluctuations.
Example 3: Original design
Example 3: Redesigned

Trinidad & Tobago Trade Report

In US$: Exports rose in 2007, while imports were flat.

Trade Surplus

Exports
Imports

Top industries in 2007
Transportation products, including oil, accounted for half of all exports in 2007.

Transportation 60% 46%
Travel 25% 25%
Government services 15% 15%
Other business services 5% 14%
Communications services 4% 0%
Insurance services 2% 0%

% of Exports % of Imports
Example 4: Minutes of Prepaid Mobile Talk Time per Litre Cooking Oil

(See original design above)

In this case, I attempted to use strengths from two very different visualizations of the original data. One, a video of rotating numbers, is friendly, but it does not reveal any patterns within the data. After watching the videos for two different time periods, it is nearly impossible to know what has changed. The second, a bar chart, conveys relative magnitudes well, but it is perhaps less engaging than the video.
The redesign has two basic modes (see above). The first, a play button, is similar to the video. But because the numbers change in a way that is linked to the data, it is easier to see that there are clusters of countries.

The shape of the chart, and how fast it moves, reflects the data. While the chart is playing, users can interact with the arcs, but this form could be turned into a straight video, which would make it compatible with older versions of Internet Explorer. A slider could also be provided for further control.

The second mode is better suited for exploratory use. It shows two time periods, literally highlighting countries that have changed. Outliers are easy to identify, and explanations for some countries are provided when a user interacts with an arc. For example, text is shown clarifying that, in Namibia, the dominant provider, MTC, cut prices, while in Ethiopia, prices are politically determined. The chart anticipates questions that readers are likely to have.

Unlike a bar chart, this chart exploits qualities that are unique about the data: most notably, the data is measured in units of time. Using what is unique about your data is a good way to make the visualization memorable.