Assignment 2 – Graphics

PART 1 – FAULTY GRAPHICS

GRAPHIC 1 – THE SKILLS OF A HISTORIAN

Figure 1: Graphic from The Past Today depicting the skills of a historian.

Shown here is a flow chart displaying the various skills a historian should possess. It was sourced from a Junior Certificate History textbook (Lucey, 2009, p.9). The graphic appears at the beginning of the book and is intended to provide first-year secondary school students an introduction to what historians do. Several elements of the chart have been identified which make it ineffective at this purpose:

- The colours used are inconsistent. As opposed to grouping activities together, the colours used on the labels seem to be chosen solely for aesthetic purposes. Consequently, they serve only as distractions to the reader because there is such a variety on display. In particular, the branching activities "WRITTEN" and "ORAL" should be the same colour to indicate they are linked to their parent node in the chart.
- This use of colours could be considered an example of excessive use of data-ink (Tufte, 2001), as the colours add little to the chart's meaning.

- The chart is poorly structured and has a weak flow. The reader is drawn in several directions and is required to read upward and downward on the chart as opposed to a single logical path.
- The use of white text on light coloured backgrounds in the labels for "ORAL" and "RESEARCH" makes the chart less accessible to the visually impaired because the colours lack contrast (Tufte, 2001; Few, 2008).

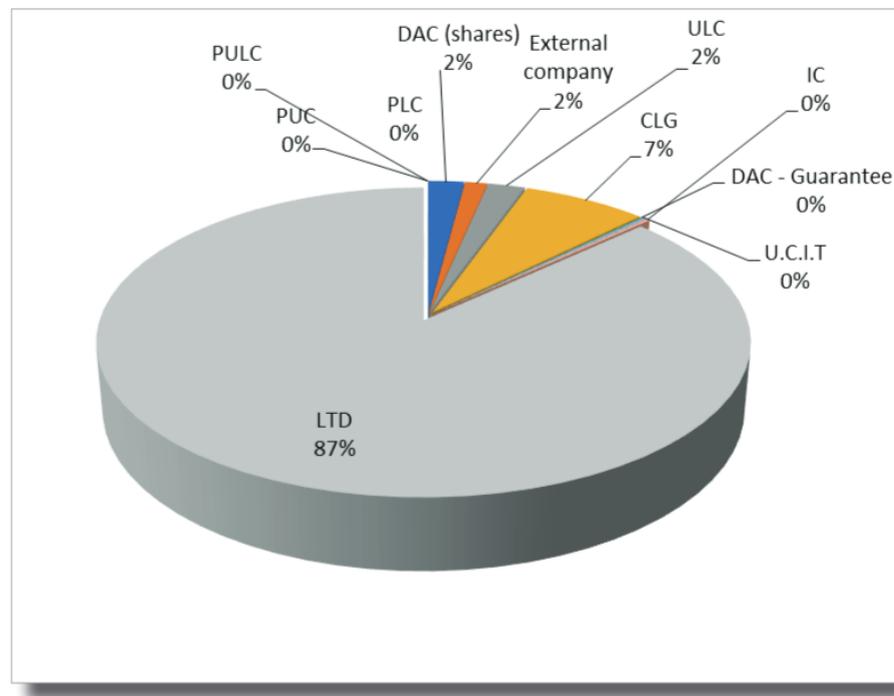## GRAPHIC 2 – COMPANIES REGISTRATION OFFICE PIE CHART

Present Make up of the Register:

Figure 2: Pie chart representing the makeup of companies currently registered with teh Companies Registration Office.

This chart, included in the Companies Registration Office Annual Report (Companies Registration Office, 2019, p.2), depicts the company types on the register. The audience for this information would be researchers, government officials or journalists, as these data are relevant to their decision making and reporting processes. The graphic exhibits deficiencies which impact its' usefulness:

- The largest segment does not begin at the twelve o'clock position, as best practice recommends (Markel, 2012).
- The graph is in 3-D and does not sit flat on the page, which results in data distortion, whereby segments of equal value look larger than others (namely DAC (shares), External Company and ULC). This illustrates Tufte's (2001) lie-factor and contradicts a principle that graphics should be "simple and uncluttered" (Markel, 2012, p.308).
- The types comprising 0% are split across two segments as opposed to grouped in one "miscellaneous slice" as suggested by Markel (2012, p.332). This creates unnecessary confusion. Markel (2012) also recommends showing both the percentage and raw data. It would be useful to know the figures which generated 0% entries. We are left to guess whether they were rounded down or had no registrations.
- No legend is provided outlining to what the various abbreviations refer. The chart seems to rely on assumed knowledge of the reader. As Nussbaumer Knaflic (2015) outlines, where possible your chart should be accessible to those who do not have the same level of knowledge as the designer.
- The line connecting PUC to the chart bisects the PULC label, which is careless design.
- The shadowed border is an example of chart-junk (Markel, 2012) as it is a superfluous element which adds nothing to the graph's meaning.
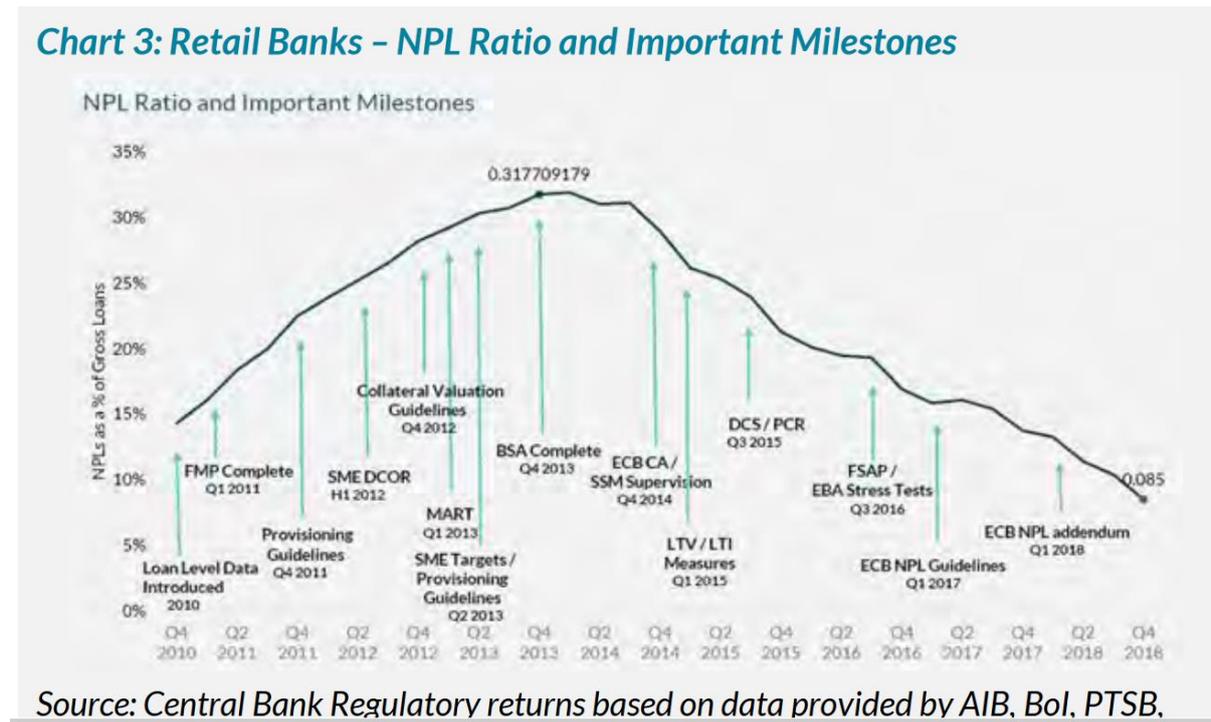
GRAPHIC 3 – CENTRAL BANK OF IRELAND LINE GRAPH

Figure 3: Line graph representing the NPL ratio of the Irish banking sector from the 2018 Annual Report of the Central Bank of Ireland.

This line graph from the 2018 Annual Report of the Central Bank of Ireland (Central Bank of Ireland, 2019) presents the ratio of non-performing loans to gross loans and significant milestones. The ratio is meant as an indicator of the banking industry's health. The audience for this information is bank officials, government, investors and business leaders who require such information for making financial decisions. The issues which detract from this graphic's effectiveness are as follows:

- The chart lacks gridlines, which makes it difficult to track where the data lies on the axes (Markel, 2012).
- The data are represented inconsistently across the chart. Two ratio values are represented by dots on the line combined with a text label. The others have neither, further exacerbating the difficulties determining the data's position on the axes. Giving only two raw figures has the consequence that it is impossible to discern anything more than the overall trend taking place, rather than being able to analyse the data in detail.
- Like Graphic 2, the chart's abbreviations are not explained to the viewer, which is again an example of reliance on assumed knowledge (Nussbaumer Knaflic, 2015) and unfriendly design (Tufte, 2001).
- The labels for important milestones are densely packed. Half fall between the x-axis tick marks. Both of these characteristics suggest that the chart would benefit from expanding its' width to have each quarter represented on the x-axis. Less tightly packed text would increase the chart's readability (Tufte, 2001).
- The chart presents a lot of data. Arguably, it would be better to separate the milestones and NPL data into two distinct tables or charts to increase clarity (Markel, 2012; Coles, 1997).

PART 2 – REDESIGNED GRAPHIC

Below is a redesigned version of Graphic 2. This revision addresses the issues which were highlighted in Part 1 in the following ways:

- The largest segment now begins at the twelve o'clock position and the segments decrease in size clockwise (Markel, 2012).
- The chart is 2-D to avoid data distortion (Tufte, 2001).
- The chart now shows a more detailed breakdown of the data which was previously located in "Appendix 1: Detailed Statistics" of the report (Companies Registration Office, 2018, p.16). The previous zero values are now more meaningful and illustrative of the real data.
- An extra "Miscellaneous" section has been added to represent the other types of companies which were previously not represented on the graph.
- A legend is provided so that viewers are not required to consult elsewhere in the document to determine the meanings of abbreviations, which is keeping with Nussbaumer Knaflic's (2015) advice dsiscussed previously.
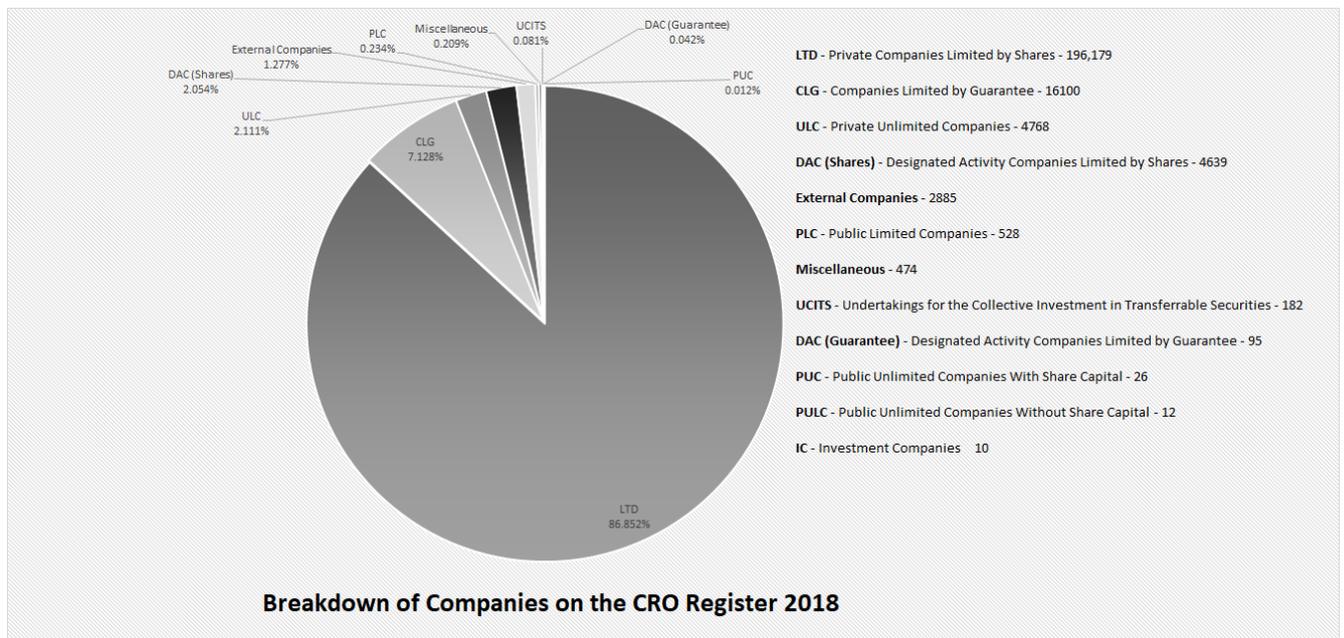- The unnecessary border element has been omitted.

Breakdown of Companies on the CRO Register 2018

Figure 4: Redesign of the pie chart from the Companies Registration Office Annual Report 2018

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