Part 1 – Design critique

Problem domain

The weekly box office revenue for different films is depicted. They visualise for all movies in a year:

- The time a movie is in theatre
- The revenue per week
- Total revenue

Tasks achieved

With this visualization the following tasks are achieved:

- A high amount of data can be depicted
- Extreme values can be highlighted with colour
- Using volumes, you can see a total value and a value per time unit (or any 2 variables)
- Using scroller for the x axis you can see a large span of data in high detail
- Using the interaction, you can highlight one movie easily
- The graph looks aesthetically pleasing
- You can easily see periods where a lot of movies with a high revenue are shown in cinema

Tufte's integrity of graphical design

Scale labelling:

- The X axis is very clear, though there are no clear time units, because they say weekly revenue but show a flued line per month
- The Y axis the height shows the revenue per week. They lay un top of each other which makes it hard to read the revenue per week.

Lie factor:

- By layering the movies on each other it gives the impression that they have a high revenue
- Even the volume is hard to guess because of the shape
- Above and beneath X axis give the impression of a negative
- By colours the viewer is guided toward extremes but the colour scheme is decided by the designer

Design variation

We think all the changes in design show a variation in the data as well

Tufte's design principles

Data-ink ratio:

We think all the ink that is used to depict data. Using an area efficiently depicts 3 variables: total revenue, weekly revenue and time. So very efficient ink ratio.

Chart junk:

The X axis is not a straight line, which has no purpose but just looks nice. This makes it harder to read the absolute values.

Increase data density:

We think the data is already really dense. We think it is rather too high than too low. You already need some time to understand the graph. The scaling makes the data density seem really high, but shows the periods of high revenue really clearly.

Layering of data:

The used layering of data makes it easy to see the high extremes but really hard to distinguish the movies with a lower total revenue.

Graphic design principles

The colour pallet and **contrast** make it easy to see the contrasts but only show 3 categories. So it is used to highlight the extreme values. They didn't use a lot of **repetition**, but chose to put everything in one graph. However, the scroll bar indirectly puts a **repetition** of graphs in one graph. We think the **alignment** of the movies either above or below the X axis is kind of arbitrary. Otherwise the alignment of the shapes is dependent on the time axis and weekly revenue. Physical **proximity** is dependent on the start of the period a movie is shown in the theatre. The colour **proximity** is dependent on the total revenue of a movie.

Visual encodings

They used three types of visual encodings:

- Colour: showing the total revenue
- Volume: to show the total revenue
- Shape: to show the relation between weekly revenue and the time in the theatre
- Position: the start of the period a movie is shown in a theatre

For the goal of this visualization these encodings are good. Because the periods where there is a lot of revenue of movies is really clear. However, it is really hard to compare individual movies because the shapes are totally different depending on the period they aired and there are only 4 colours used.

Subjective dimensions

This visualization has a very high "hang it above your bed" factor. So it is aesthetically nice. For the **playfulness** we think it would be nice if the absolute revenue would pop-up when selecting a movie. We think it is a **style** for a populistic scientific magazine. We think the **vividness** is really good. It is a graph you would easily remember.
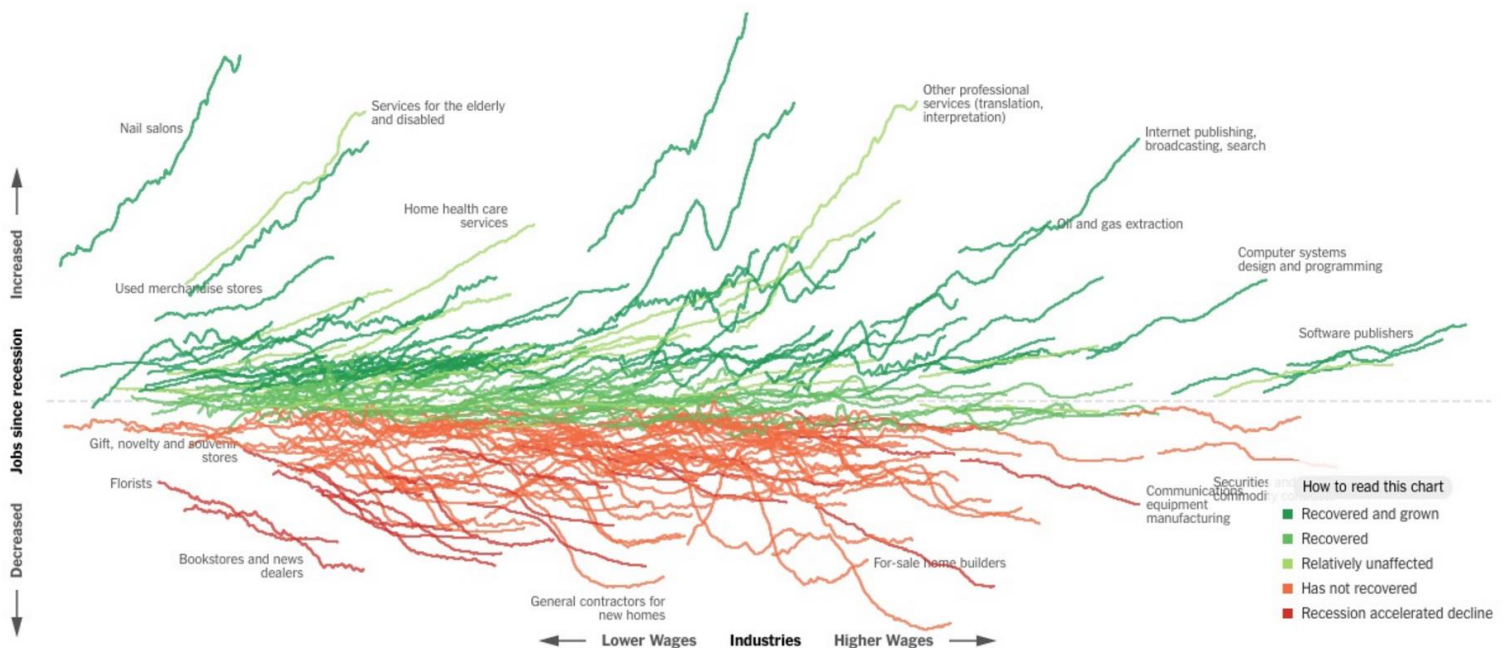
Goal

To show the periods when a lot of high revenue movies air. This goal is achieved very well. However, this could be done in a clearer way. We think they still want to show the attributions of different movies. So they show simultaneously the periods of high revenue and the independent movies. However, it is hard to read the revenue of the independent movies.

Changes

The interaction could be higher. We would like to see the revenue per movie when we click on the movie and some additional information. Because the title is ebbs and flows of ….. we would have used blue shades for the visualisation.

The New York Times

http://www.nytimes.com/interactive/2014/06/05/upshot/how-the-recession-reshaped-the-economy-in-255-charts.html?abt=0002&abg=0

Evaluating visual variables colour and position

This is a composition of different line graphs with a certain colour and position. The **position of the independent line graphs** on the Y axis shows how strong the amount of jobs has decreased or increased since the recession. The **position of the independent line graphs** on the X axis is dependent on the average wage of an industry. Per line graph we see two **positions:**

-   on the X axis the time a
-   on the Y axis the percentage of increase in amount of jobs since 2004

The **colour** of every line graph depicts what the influence of the regression was on the amount of jobs. Green is increased since the regression, red declined since the regression. **Dark red** was already declining, but the decline accelerated since the regression. Where **orange** means that the regression has not recovered to the same amount of jobs since the regression. **Light green** is unaffected by the regression so they keep increasing. **Medium green** recovered to the same level of jobs as during the regression. **Dark green** reached a higher amount of jobs compared to the regression.
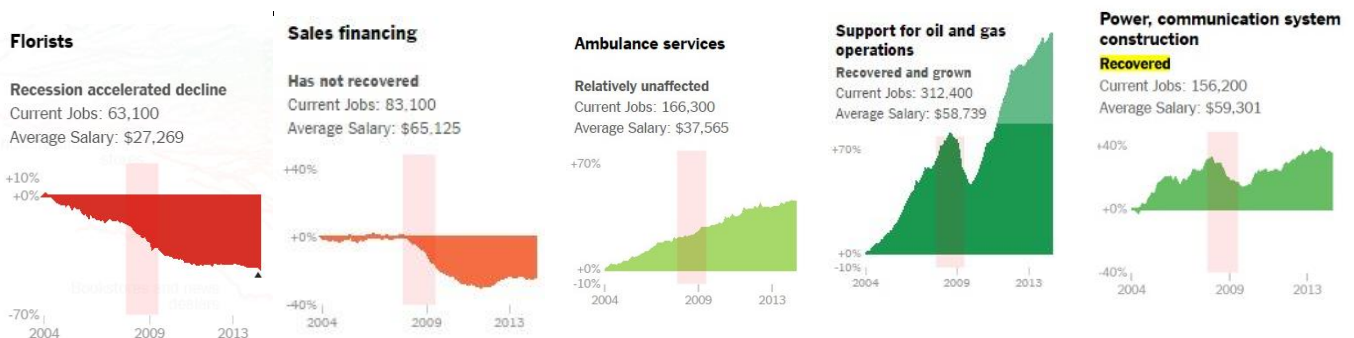
Tasks

Trying to convey:

Visualizing the effect of the regression on the amount of jobs in different industries.

Tasks:

- Show the difference in amount of jobs before and after the regression
  They used colours to visualize this tasks, which shows the contrast really clearly. However, it takes a lot of time to understand the different categories.
- After the regression, did the amount of jobs go up or down?
  This is visualized in both the individual line graphs and the colours. However, these line graphs don't have any axis so you need the interactive aspect or the graphs below the big graph to know the absolute numbers.
- Show these differences in amount of jobs per industry
  This visualization shows the differences per industry, however it is not easy to find the different industries. This would be easier when every line graph was a dot, but then you lose the variable time.