B1: Pricing Management Information in the London Market

Matthew Evans
Insight Risk Consulting

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Pricing MI in the London Market

Using pricing data to improve underwriting decision-making and profitability

06 June 2016

Agenda

- Problems and excuses

- A poor first effort

- Some glimmers of hope

- New MI platforms

- What makes pricing MI useful?

- Questions and Comments

- References

Problems and excuses

- A lack of data

- Heterogeneous risks

Statistical

- Operational overheads

- Market practice

Practical

- IT & development expense

Financial

A poor first effort

- MI used by underwriters to assess class performance

|	1	2	3	4	5	6	7	8	9	10
1	7%	22%	33%	43%	53%	64%	67%	69%	74%	75%
2	7%	24%	41%	64%	72%	79%	89%	94%	102%	
3	7%	31%	53%	77%	95%	98%	110%	117%		
4	7%	32%	49%	84%	90%	98%	102%			
5	5%	13%	25%	34%	40%	45%				
6	6%	21%	34%	47%	58%					
7	6%	19%	35%	51%						
8	6%	24%	49%							
9	8%	28%								
10	8%									

Is there a graph?

Do we get this by sub-class?
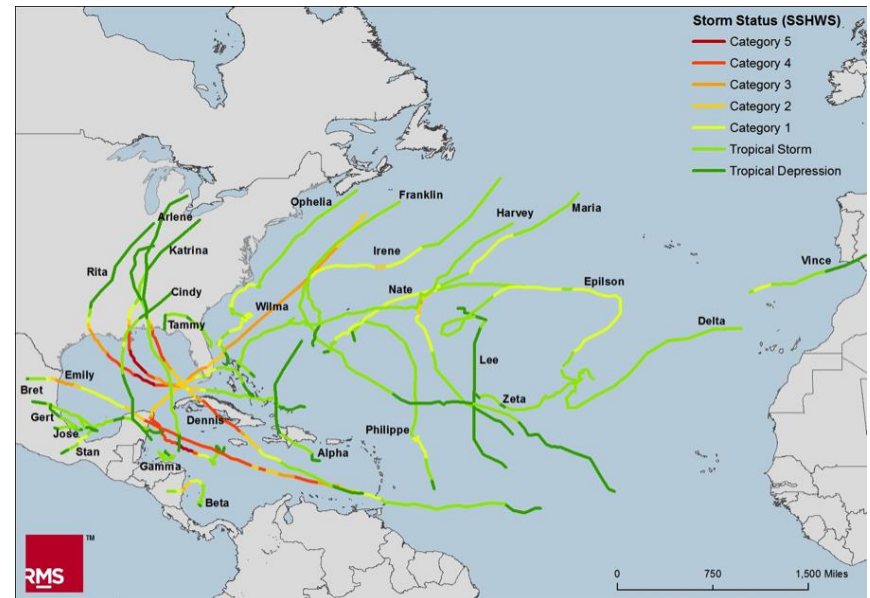
Do we get this by Broker?

- All too often, not even the easy stuff is done...

- MI lacks granularity and only informs long after the horse has bolted.

Some glimmers of hope

- Exposure modelling is more developed for nat cat

- *Sophisticated MI is available when a business case can be made*
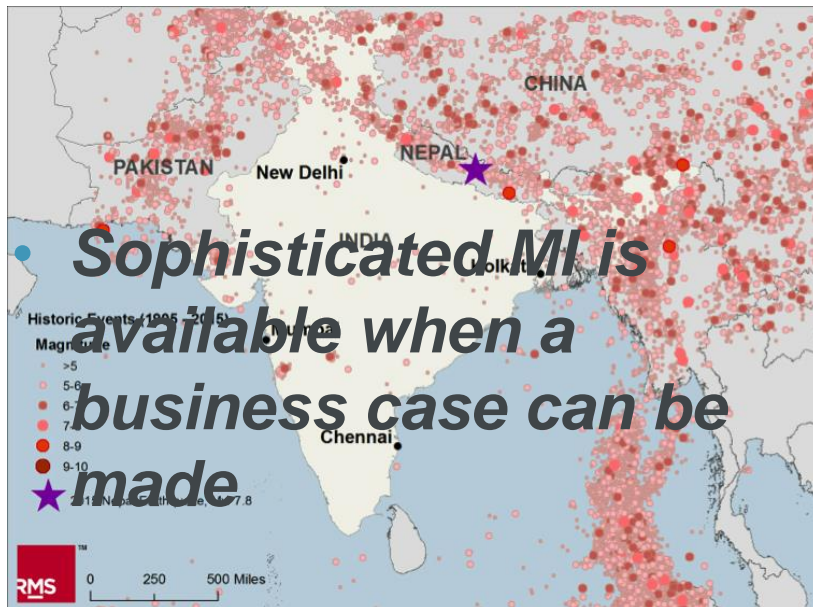
- Graphics: RMS

New MI platforms

- Excel-based solutions not robust or scalable

- In-house development can be expensive

- New online platforms have emerged to bridge the gap:
  - R/Shiny, Plotly and Google Charts
 - Tableau
  - Microsoft Power BI

Practical

Financial

New platforms: R & Shiny

- Open source stats package R talks to excel and databases

- Online graphics package Shiny allows R graphics to be deployed using a web browser

- Combination offers a cost-effective way of getting actuarial work out into the business without reliance on internal IT.

New platforms: R/Shiny & Plotly

- Plotly charts running in Shiny

- Charts are interactive, allowing underwriters **controlled** access to data
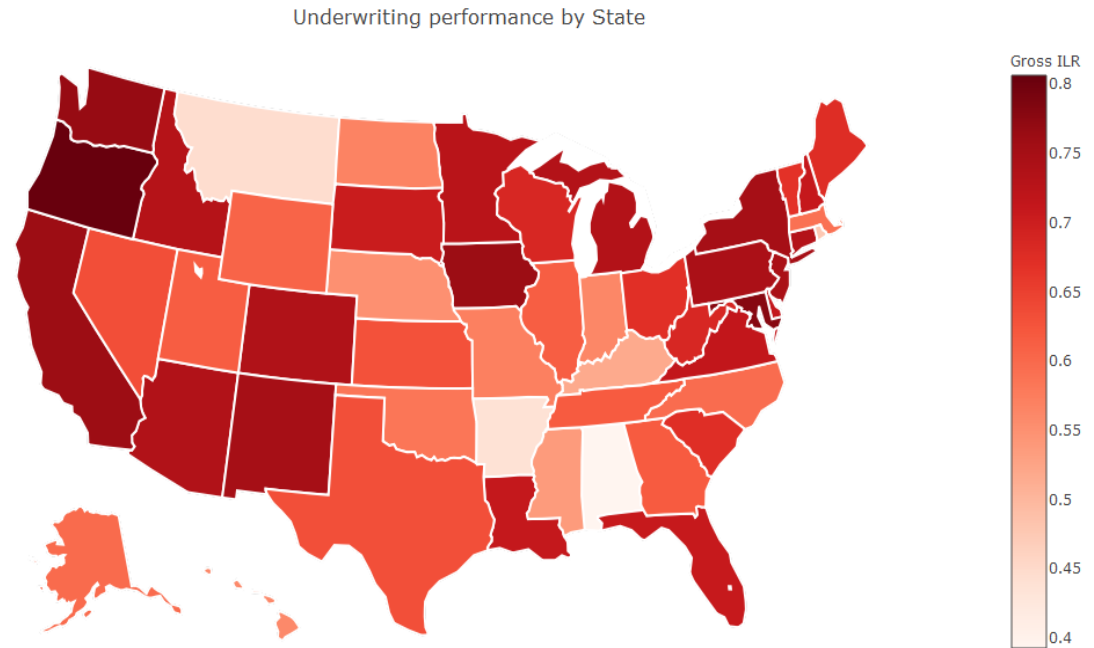
Statistical

- *Dummy Marine data shown here uses actual underwriter and broker names but is randomly generated.*

New platforms: R/Shiny & Plotly

- Plotly charts running in Shiny

- Charts are interactive, allowing underwriters **controlled** access to data

Underwriting performance by State
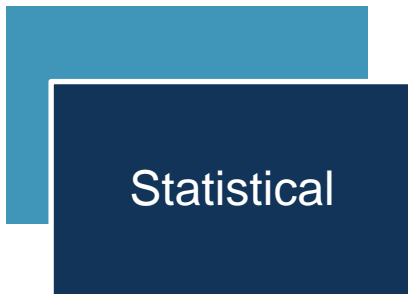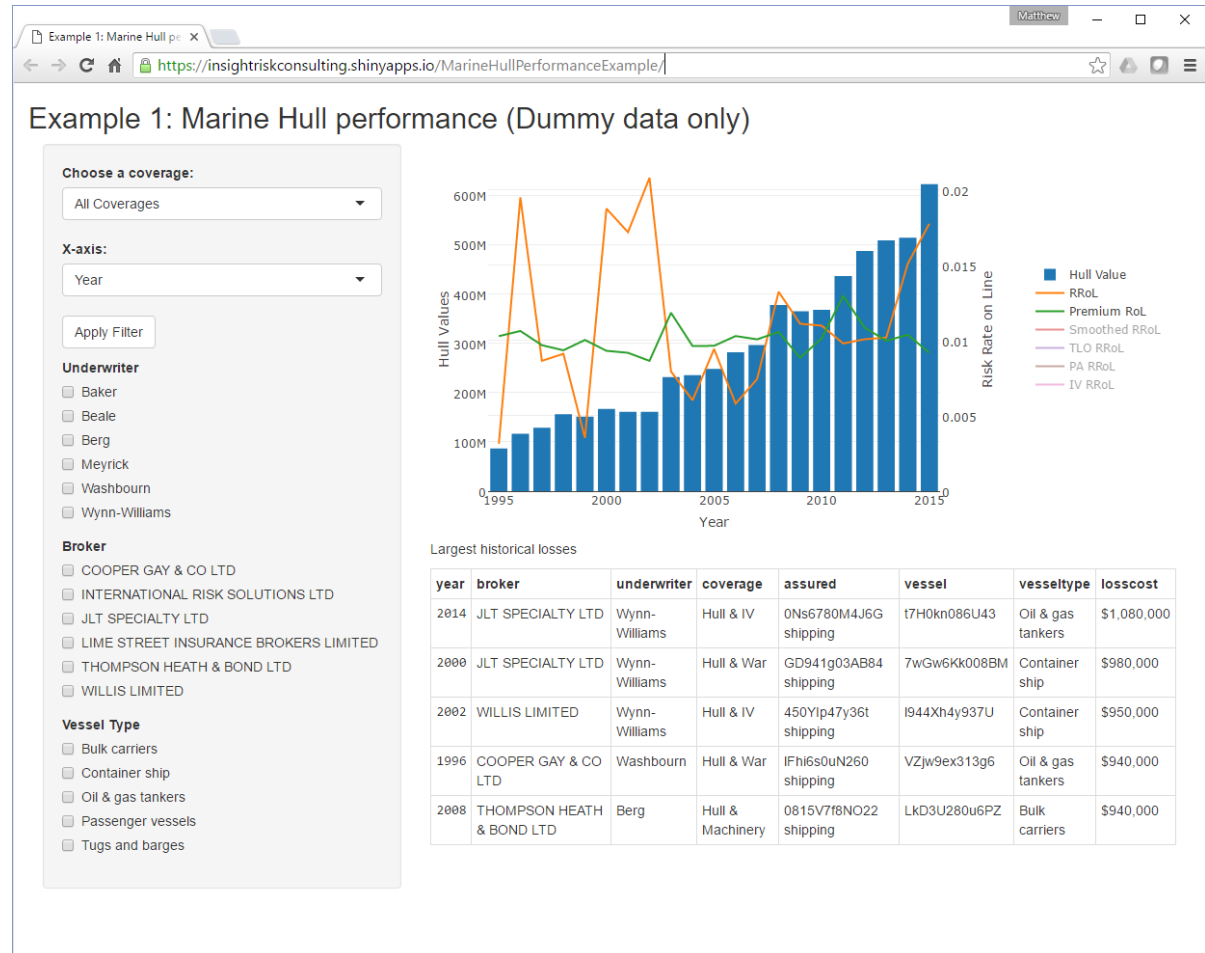
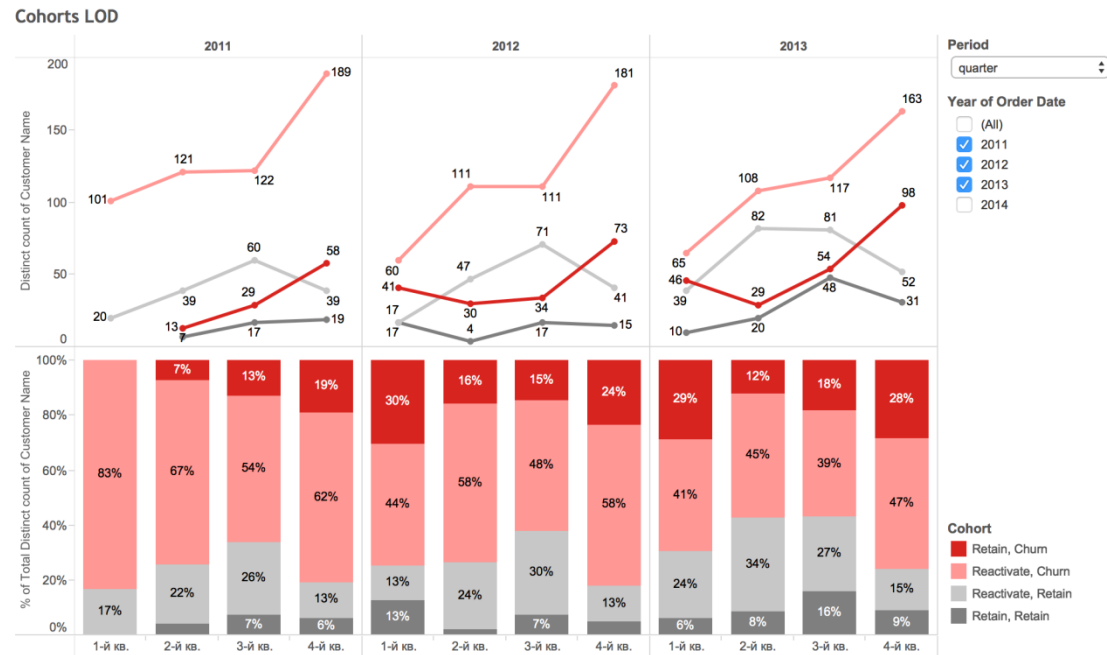- *Dummy underwriting data shown here.*

New platforms: R/Shiny & Google Charts

- Animated bubble chart from Google Charts in Shiny

- Popularised by Hans Rosling from WHO

- Used by Lloyd's to show development over time.

- *Dummy Marine data shown here uses actual underwriter and broker names but is randomly generated.*
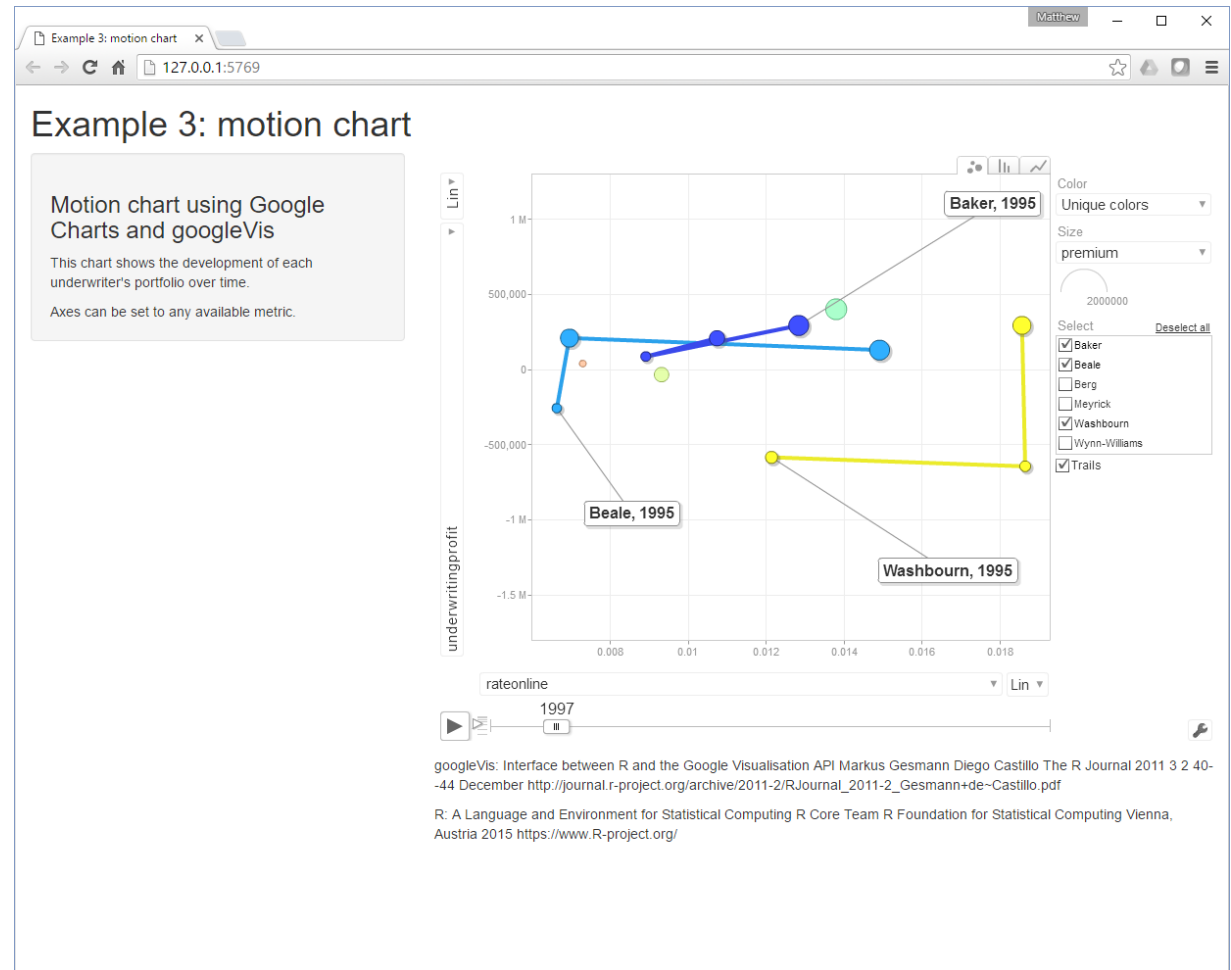
New platforms: Tableau

- Tableau is a package option

- Interactive dashboards

- Connectivity to various data sources

- *Tableau example shown here.*

New platforms: Microsoft Power BI

- Microsoft Power BI has excellent integration with standard tools

- Similar interactive dashboards and data visualisation

- *Dummy Marine data shown here uses actual underwriter and broker names but is randomly generated.*
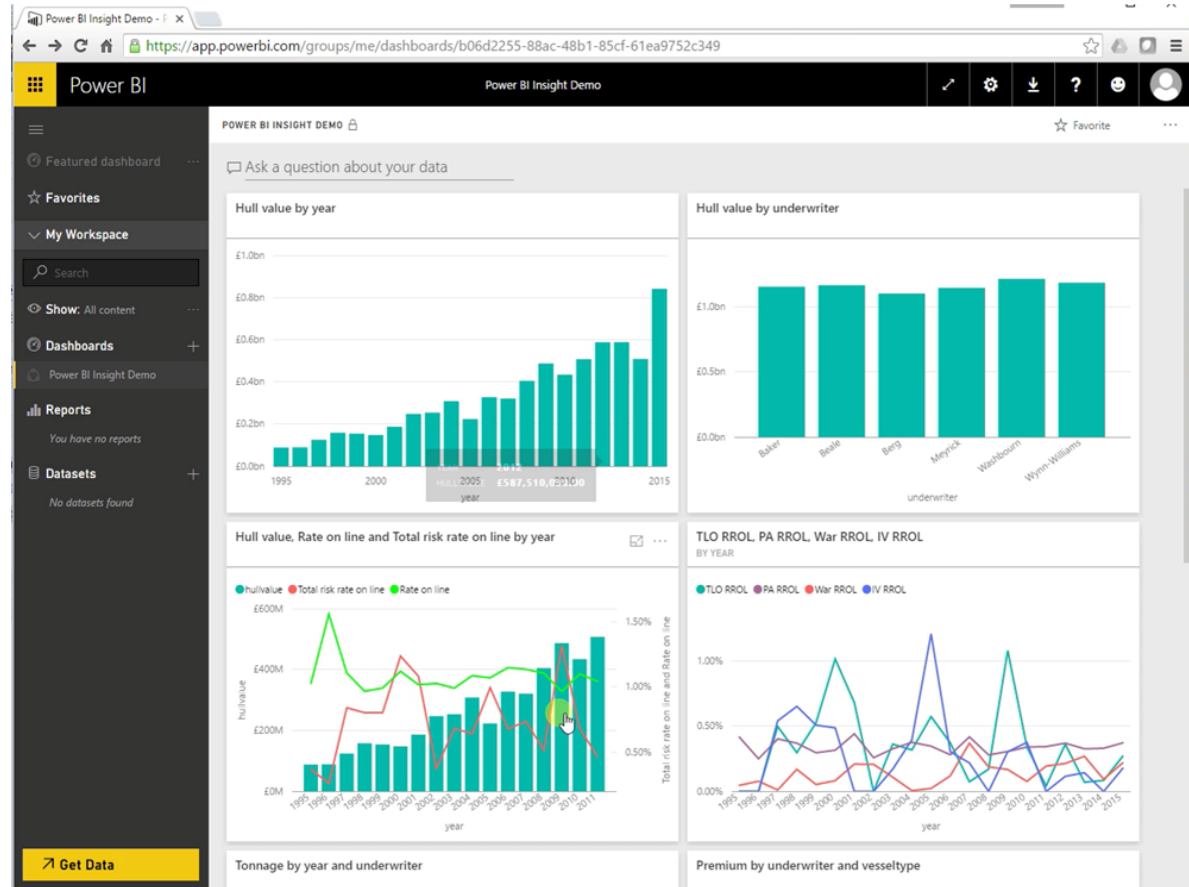
What makes pricing MI useful?

- For analytics to be most useful to underwriters they must be presented in underwriting terms:

  - Show **risk rates on line**

  - Show results by **rating factor**

  - Show results by **segment**

  - Record **exposure**

  - **Benchmark** risks

Statistical

Practical

- By matching the underwriter's own rating process, pricing model data can feed directly into improved insight

- *Loss ratios aren't enough on their own, nor Achieved to Technical.*

What makes pricing MI useful?

- With full underwriter engagement a virtuous circle emerges...
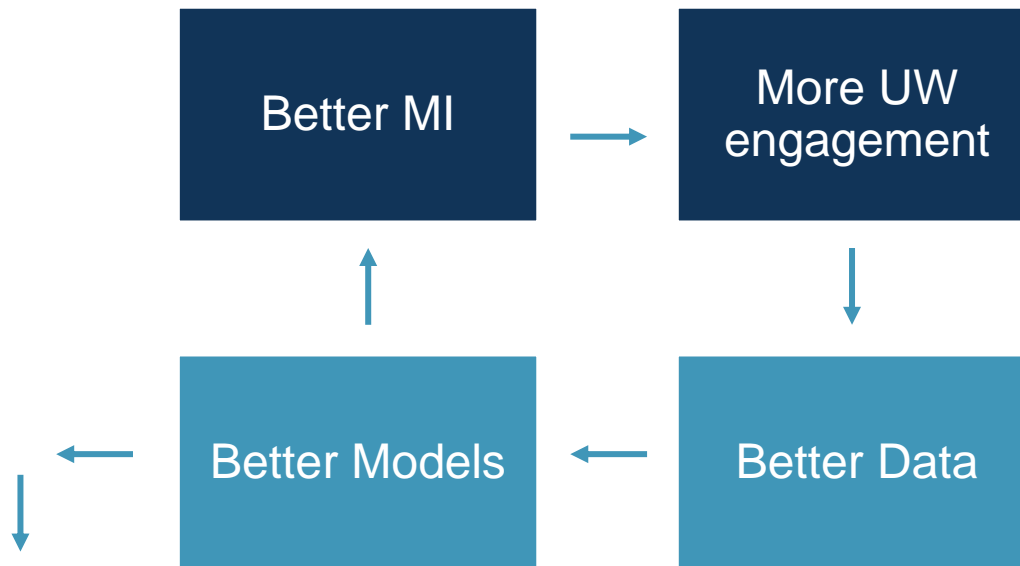
- *Circle feeds improved underwriting decision-making and profitability.*

Questions

Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.

References

- Matthew Evans www.insightriskconsulting.co.uk

- Hans Rosling https://www.ted.com/talks/hans_rosling_at_state

- R Shiny http://shiny.rstudio.com/

- Plotly https://plot.ly/

- Tableau http://www.tableau.com/

- Google Charts https://developers.google.com/chart/

- MS Power BI https://powerbi.microsoft.com/en-us/

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