

Power BI: From Great Report to Golden Dataset

a journey towards “enterprise-grade” BI...

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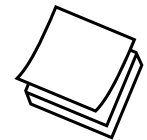
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What to Expect

- A ten-minute PowerPoint intro setting the scene – the Why
- An action packed demo full of Level 100 tips and Level 200 tools and practises in a frenzied data model clean up – the How
- We're going to be using SSMS, Tabular Editor, External Tools, Power Query, VS Code, Source Tree and of course Power BI Desktop
- Also some new External Tools that I hope to release to github.com/bvmather




Get in Touch

Message me at brian@action-bi.uk or @bvmmather:

- Send a vote for what you want to see explained in a detailed how-to blog post
- Powershell skills to help bash the External Tools into a module for release to the world
- Sign up at www.action-bi.uk/blog to stay tuned

Definitions


- For the purpose of this presentation:

 Data source is SQL – Adventureworks2014

- A Great Report is a single  pbix file containing:

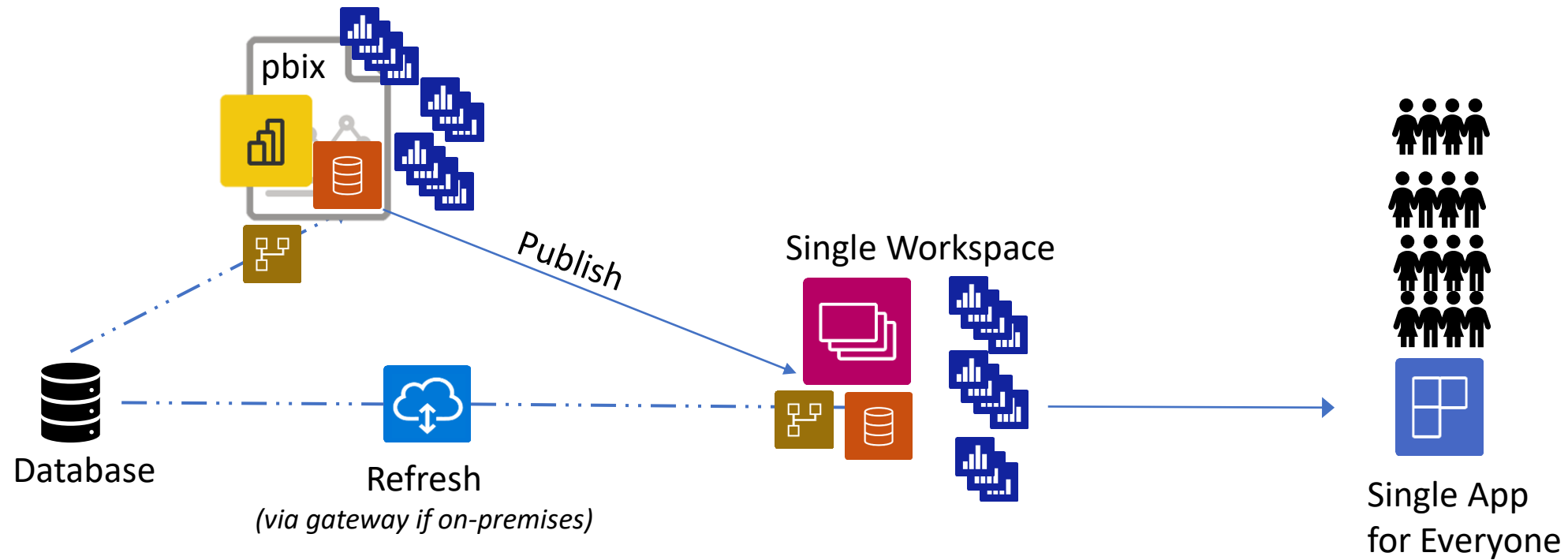
 Power Query – M: Loading and transforming data

 Tabular model – tables, measures, relationships, roles - DAX

 Report pages – the visualisations

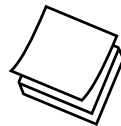
- A dataset is a  tabular model that has been published to a  Workspace in the Power BI Service, with reports being shared with users via an  App

Single pbix file



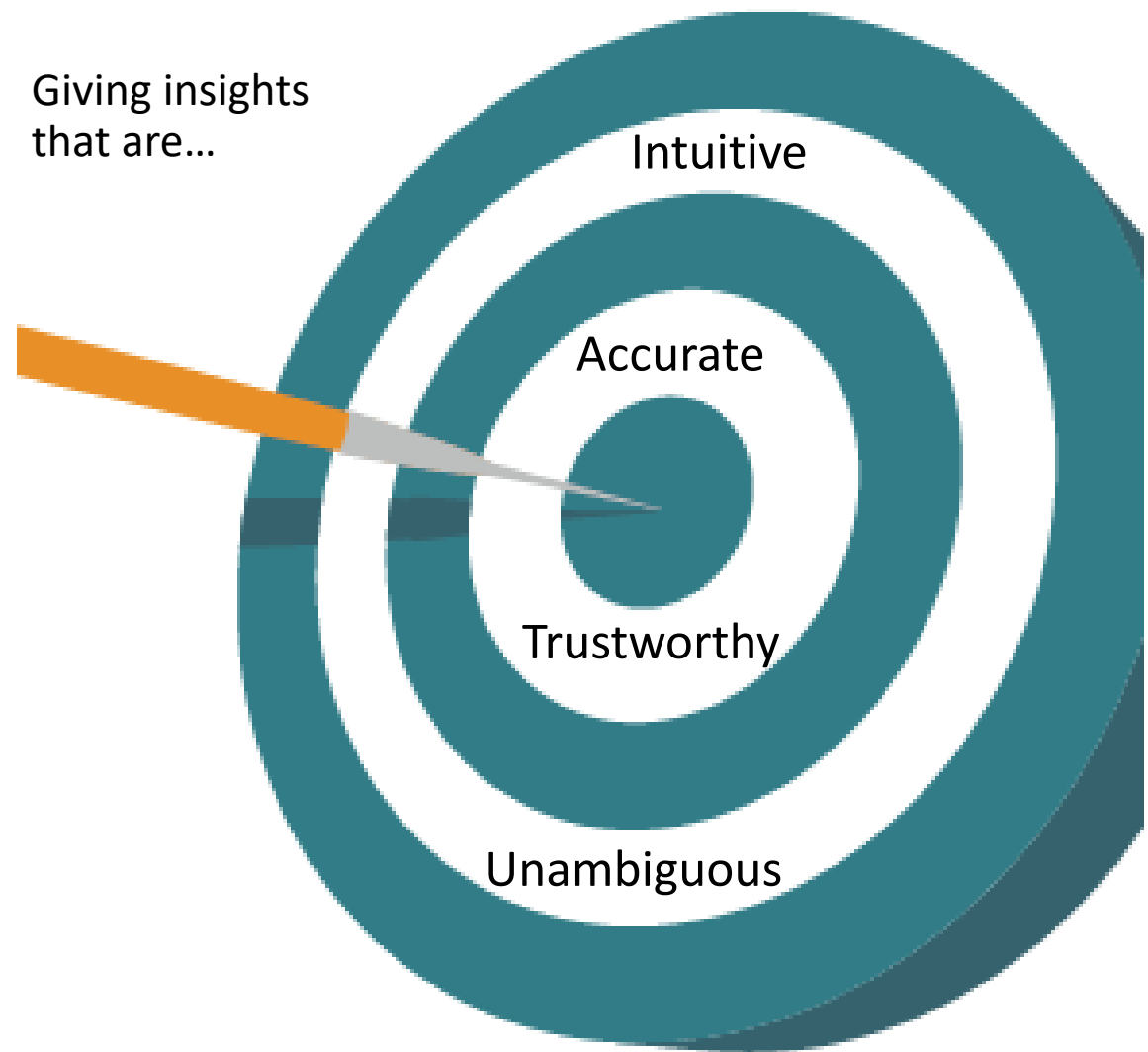
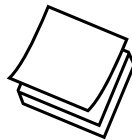
A Great Power BI “Report” will often

- Be developed quickly to meet an urgent need
- Deliver timely insights, transform business, saving huge effort
- Gain the trust of stakeholders
- Generate further demand
- Grow more complex over time



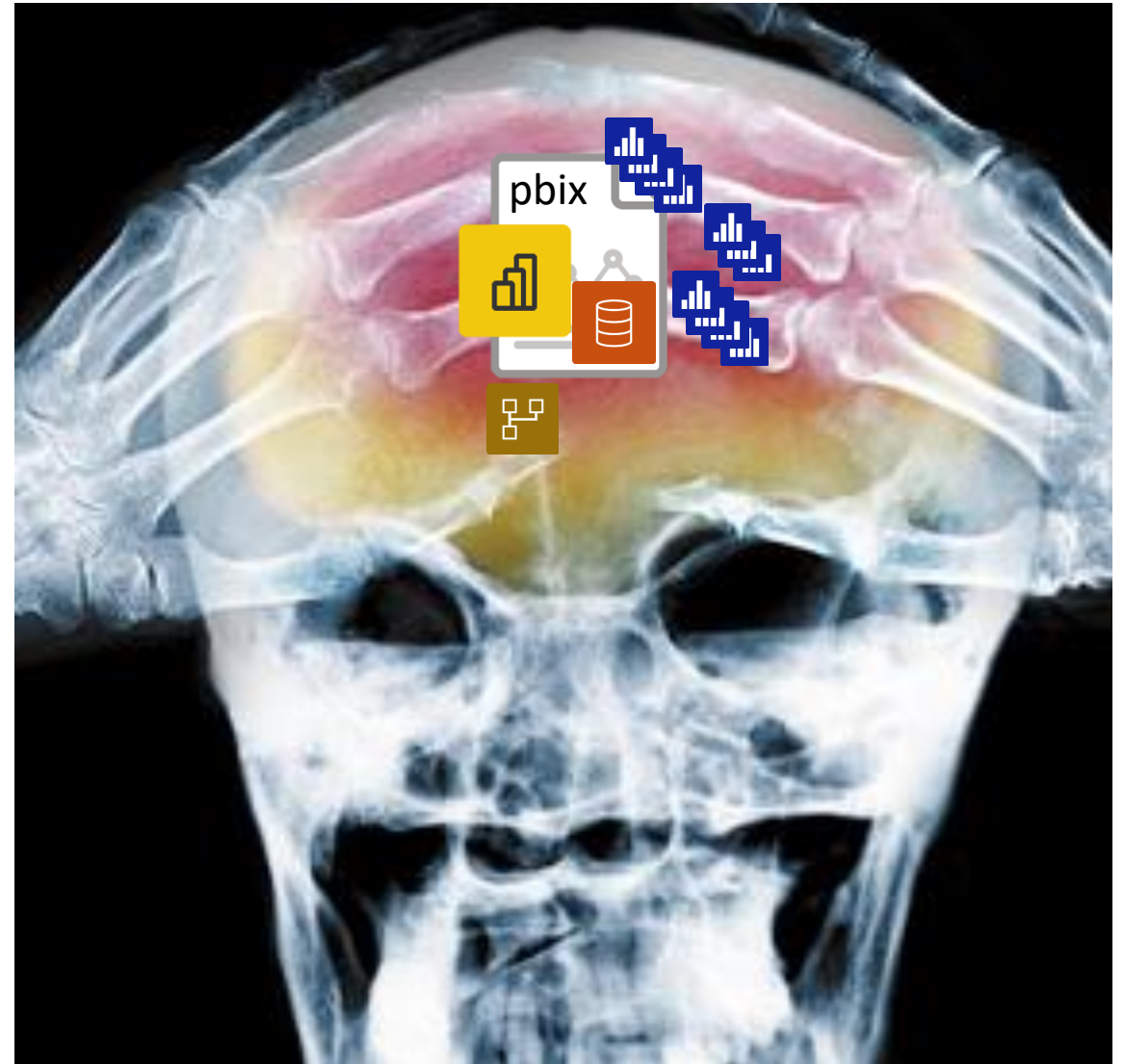
A Great Power BI
“Report” will always

Communicate clearly with
the *end user through data
visualisation*



A victim of it's own success

- Harder to navigate
- Pressure to serve different audiences
- Increasingly complex data model, difficult to troubleshoot/maintain
- Which report might I break if I change this measure?
- Limitations of Power BI tooling



The Business Wants:

- Content grouped into Apps:
 - HR, Finance, Sales, Operations
- Shared with separate audiences
- One version of the truth



The grow-up story?

The Hub:

'Golden Dataset' published to the Power BI.com service

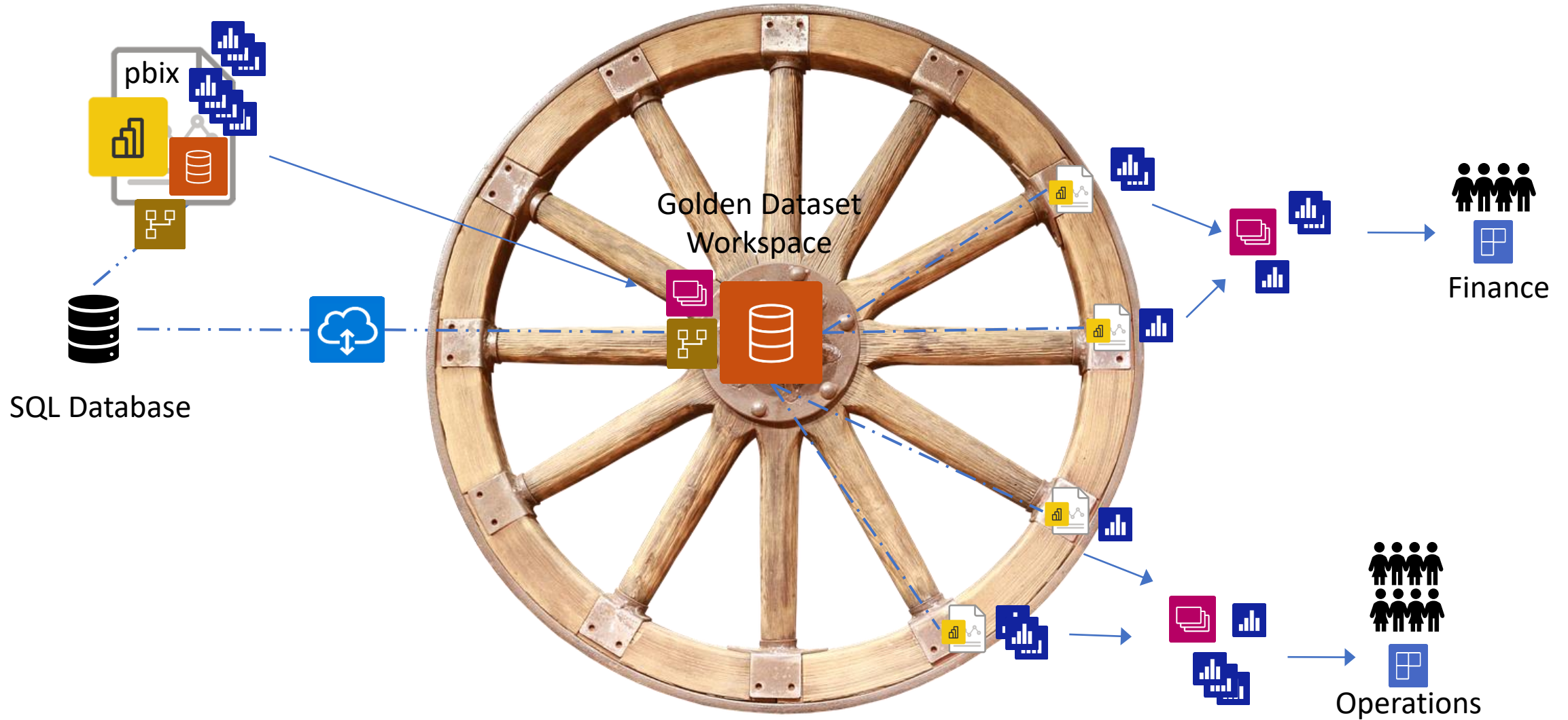
The Spokes:

Separate 'thin reports' pbix files that contain no data model.

Instead they connect directly to the 'Golden Dataset' in the service



Hub & Spoke



pbix file



Report Page



Dataset



Workspace



App

The Dilemma

- The model we've built that we have is not ready to support this architecture
- Hub and spoke architecture - changes we to the Golden Dataset can break thin reports no longer part of our single pbix file
- User requirement solved, but managing or 'fixing' the model even more challenging
- 'Ideal' hub & spoke architecture should allow no changes that could break an existing report
- Technical process requiring a whole new skill set – which we might not have
- ...and an underlying data model that has been designed 'right' in the first place
- We weren't focussed on building that at the time, we were building great reports for users. Now, our mindset might need to evolve.



The Realisation

- A Great Report communicates effectively with Power BI report consumers through data visualisation
- A Golden Dataset communicates effectively with Power BI report designers through a well organised tabular model
- This realisation will forever change the way I build any new Power BI report
- It will prevent me building up the technical debt that I'm going to have tackle in order to transform this Great Report into a Golden Dataset

Some Steps

- Greater transparency & control over data loading and transformation (push Power Query steps to SQL views, combine & rename steps)
- Develop naming strategies that serve report designers instead of report users**
- Begin to build a simplified & decluttered core-model
- Hide unnecessary technical columns such as sortby and relationship-keys
- Utilise Hierarchies to communicate clearly the relationship between columns that can nested within drilldowns
- Move all measures to dedicated measure table
- Use display folders to create logical grouping of measures, instead of over complicated naming conventions to try to achieve measure sorting
- Recognise and segregate nasty little 'report-level' measures that can move out into the individual thin reports, allowing the core model to become simpler

Warning

You're about to see some open heart Power BI surgery





The Demo



Acknowledgements

<https://github.com/marcelijveld/Power-BI-Icons>

<https://www.businessintelligence.info/osbi/adventure-works-2014-full-for-azure.html>

<https://docs.tabulareditor.com/Useful-script-snippets.html#format-dax-expressions>

<https://exceleratorbi.com.au/introduction-to-tabular-editor-for-business-users/>

Further reading

<https://www.coatesdatastrategies.com/blog/5-tips-for-separating-power-bi-datasets-and-reports>

[Checklist For Finalizing A Data Model In Power BI Desktop MelissaCoates.pdf](#)