

ATI-Mirage presents

HYBRID WORKPLACE

OF THE FUTURE SUMMIT 2021

18 AUGUST 2021



ATI-MIRAGE
TRAINING & BUSINESS
SOLUTIONS
Enriching lives, empowering organisations

ATI-Mirage presents

**HYBRID
WORKPLACE**
OF THE FUTURE SUMMIT 2021

Microsoft Power BI

Presented by Steve Atherton

Agenda

- What is Business Intelligence (BI)?
- The workplace of the future
- How does BI Help?
- Overview of Power BI
- The future of Business Intelligence

Strong industry leaders should not bemoan the loss of traditional workplace models.

Instead, they should bristle with excitement at new opportunities awaiting those capable of envisioning broader vistas of possibilities that will unveil through the upending of now-broken business patterns.

- *Forbes, Feb 19, 2021*

Overview of BI

What does it all mean?

What is Business Intelligence?

- We're all collecting LOTS of data, every minute, from all over the place.
- But how many organisations have easy access to insights from that data to help them make better business decisions?
- BI is the process of transforming collected data into actionable business insights.
- Good BI Tools provide up to the minute, easy-to-digest insights about an organization's past and present states, as well as current trends.

It's all been broken!

- It has been 18 months since Covid-19 drastically forced changes in workplace habits and methods.
- In many ways, the old workplace model has been broken.
- Organisations have had to embrace a 'work from anywhere' culture.
- Staff now need to be moved from a 'task focus' to an 'outcome focus'.
- The good news ...
 - One aspect of your operations remains stable and has the potential to help
 - Your data and any BI practices you have developed

How can a BI system help?

- Business Intelligence can provide 'outcome performance' feedback and keep your 'outcome focused' staff on track.
- Business Intelligence dashboards and reports can be accessed securely from anywhere staff are working.
- Save time and frustration by keeping people updated and provide a solid anchor that your staff can depend upon for consistency and guidance.

So why aren't we all doing it?

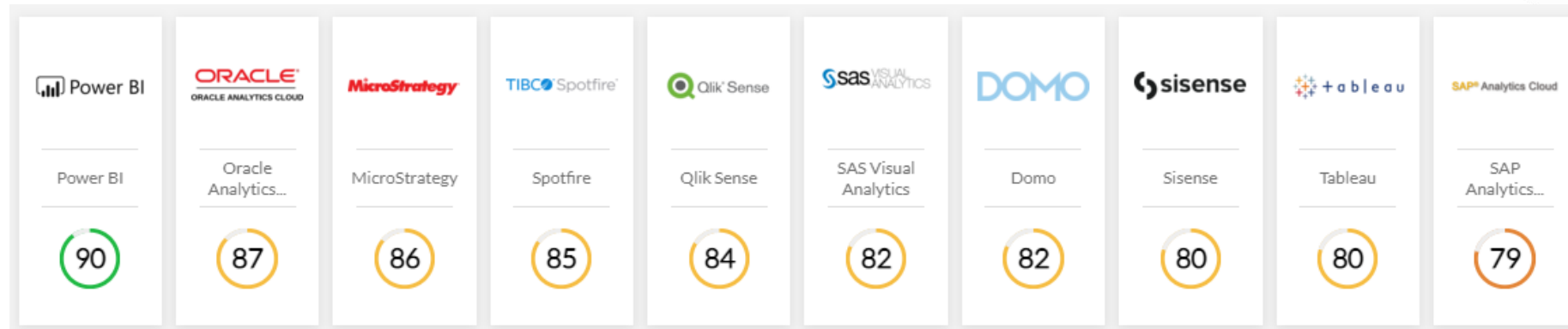
- There are lots of systems out there that deliver various parts of the requirements.
- Some are older legacy systems that can't be easily extended and don't really cut it in the modern business world.
- Most are expensive and often require specialist consultants to create and maintain them.
- Microsoft Power BI has started to become a technology 'disruptor' because it's relatively cheap, easy to set up and intuitive to use.



SelectHub 2021 Scorecard

- Advanced Analytics
- Augmented Analytics
- Dashboarding and Data Visualization
- Data Management
- Data Querying
- Embedded Analytics
- Geospatial Visualizations and Analysis
- Internet of Things (IoT) Analytics
- Mobile BI
- Platform Functions
- Reporting
- Availability & Scalability
- Data Sources Connectivity
- Deployment Options
- Extensibility
- OS Support
- Security
- License Type
- Professional Services and Maintenance
- Training
- User Support
- Vendor Information

2021 Scorecard
Rated against
these factors



 **SelectHub**
Confidence in Software

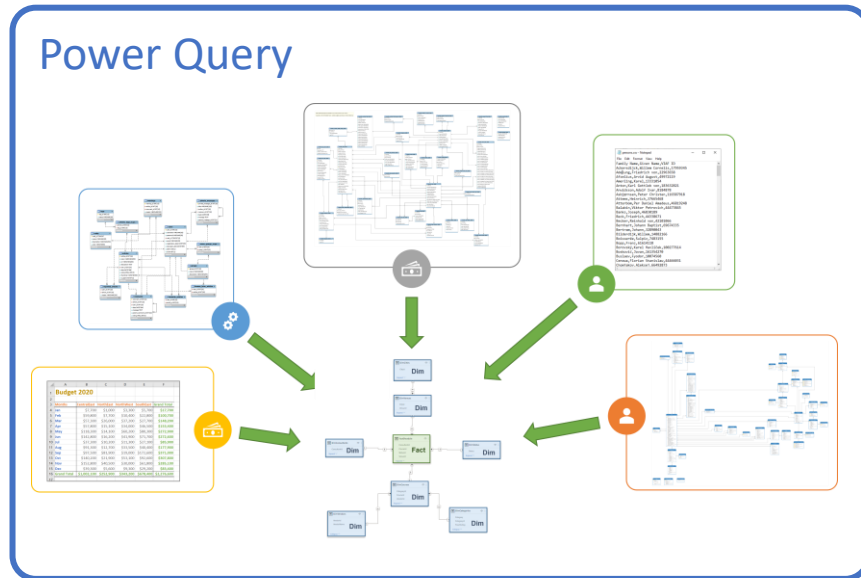
A good BI System needs to be able to ...

- Facilitate **integrating many different types of data sources**
- Transform **Data Storage** structures (can be complex) into a simpler structure (model) for **Data Analysis**
- Enhance the Data Analysis model by adding calculations and creating performance measures which are identified as needed by decision makers
- Easily create reports that **look good, are easy to interpret and make sense**
- Allow **secure sharing and integration with internal systems**
- Ideally, allow report consumers to **serve themselves** rather than running back to designers

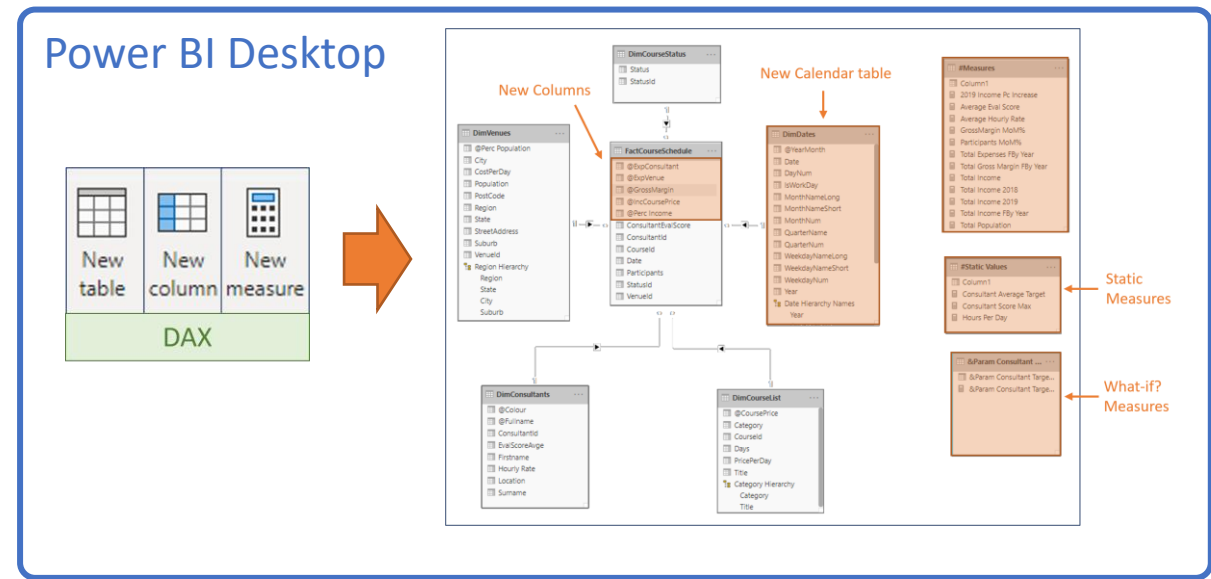
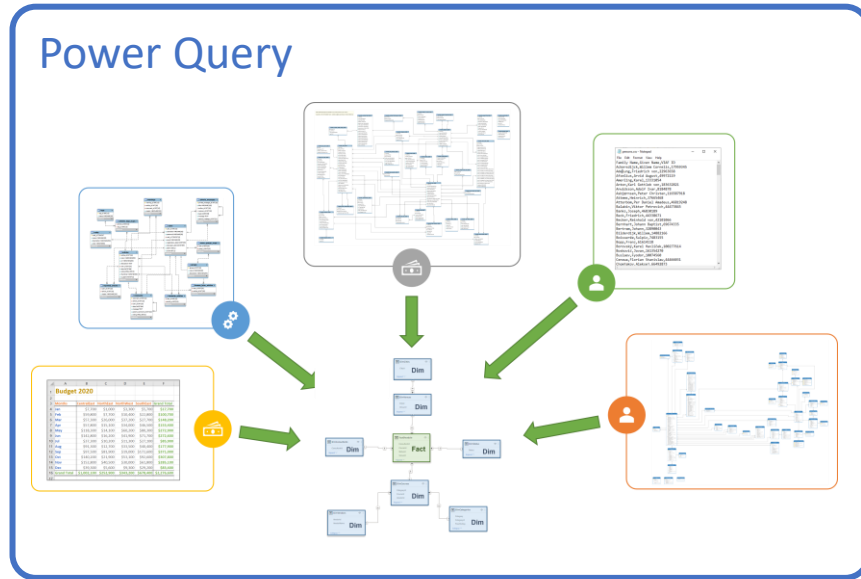
Microsoft Power BI

How does Microsoft Power BI do all of this?

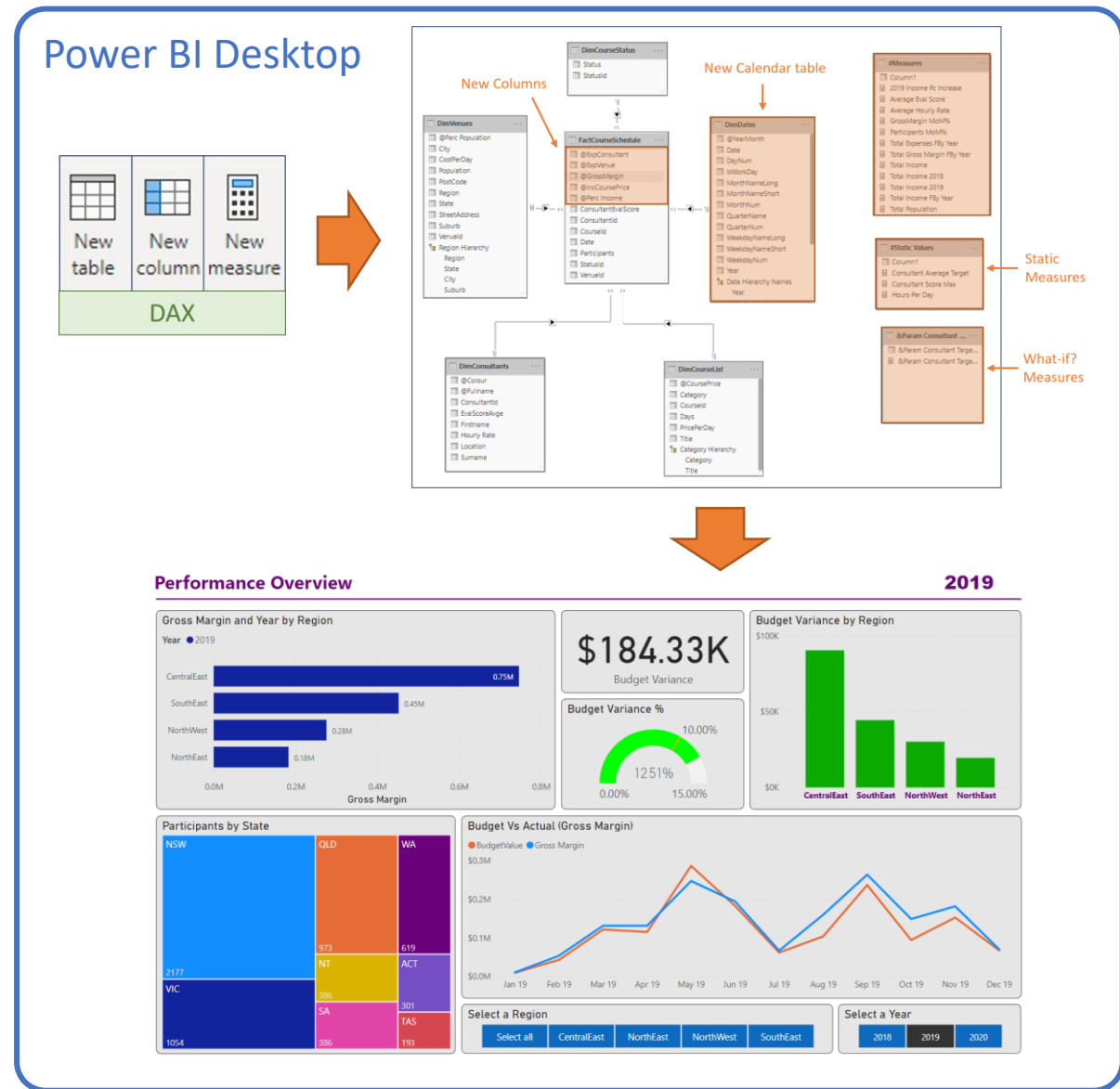
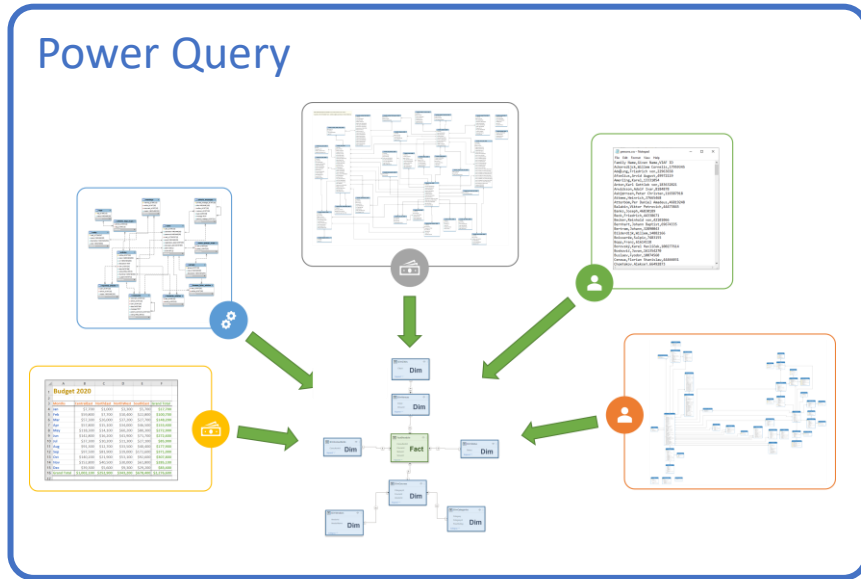
1. Integrate and transform multiple data sources ...



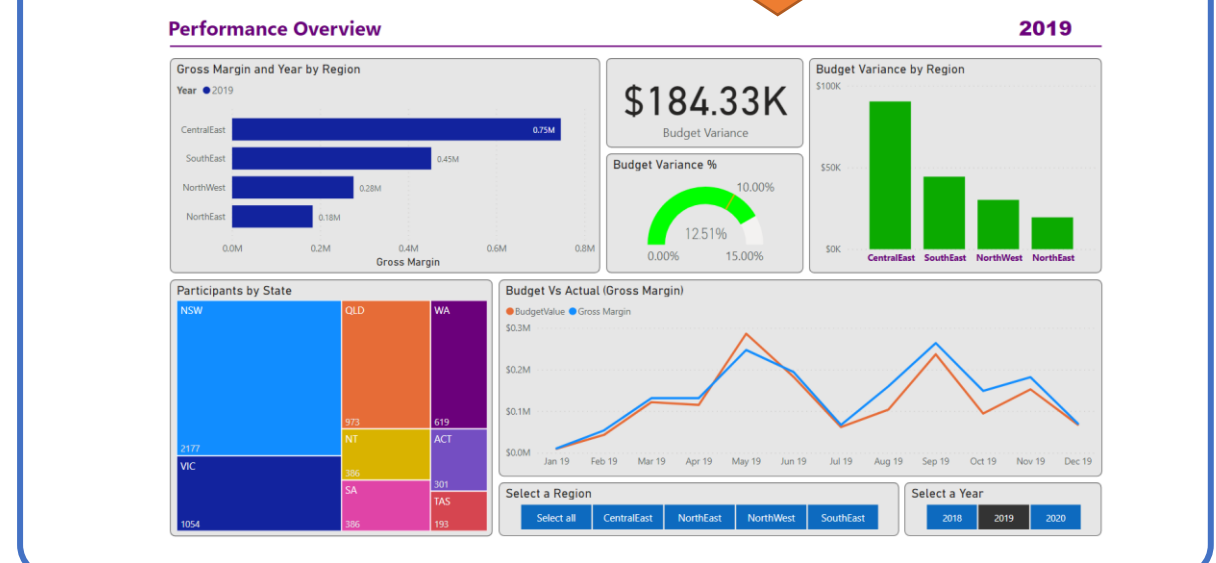
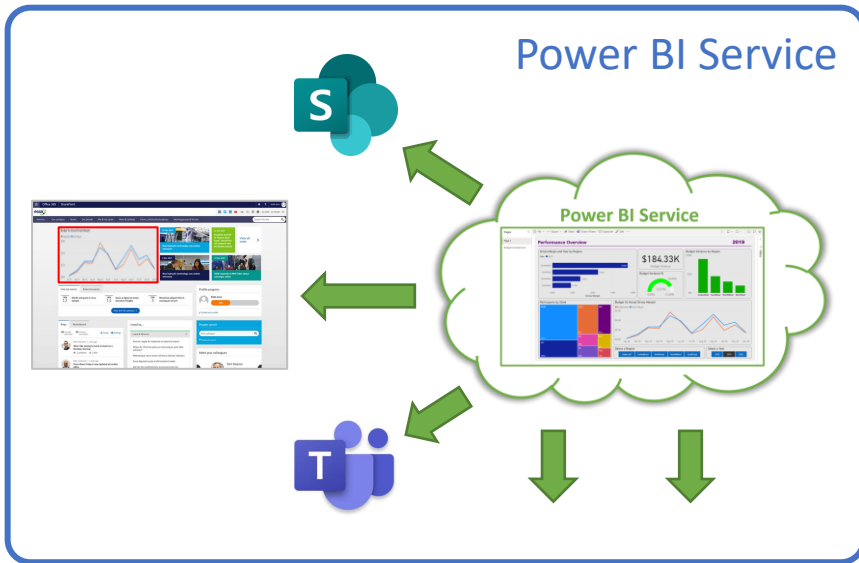
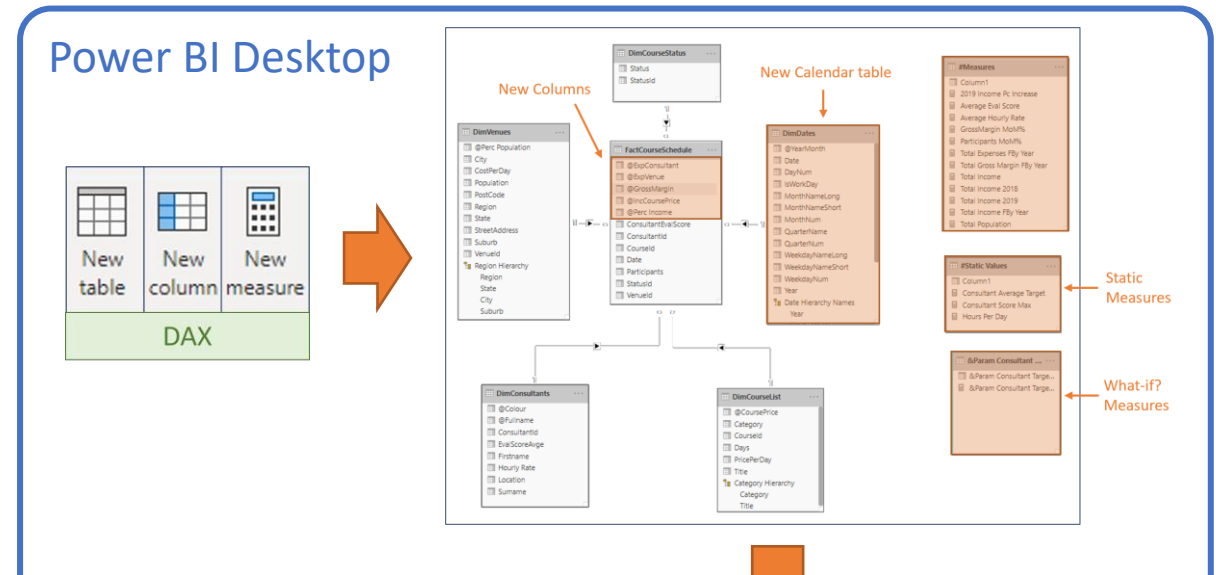
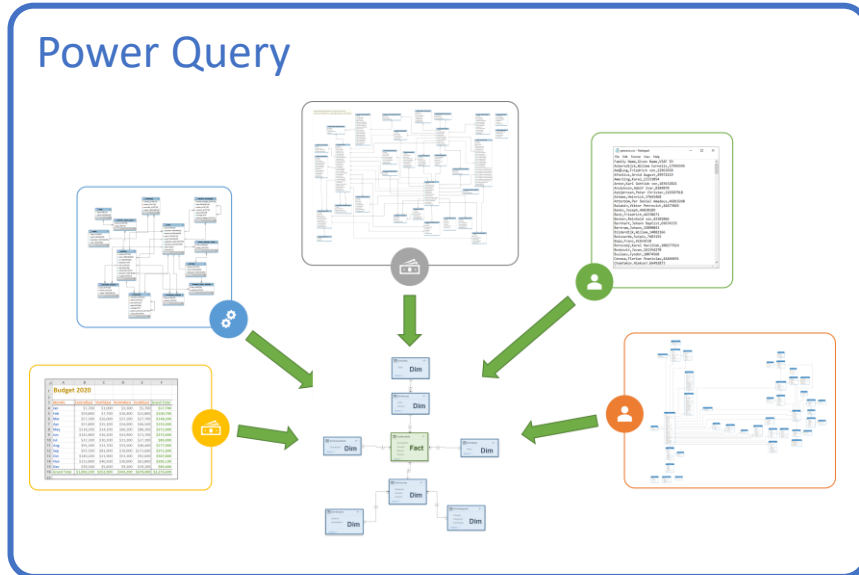
2. Enhance the analysis Model with calculations and measures using DAX



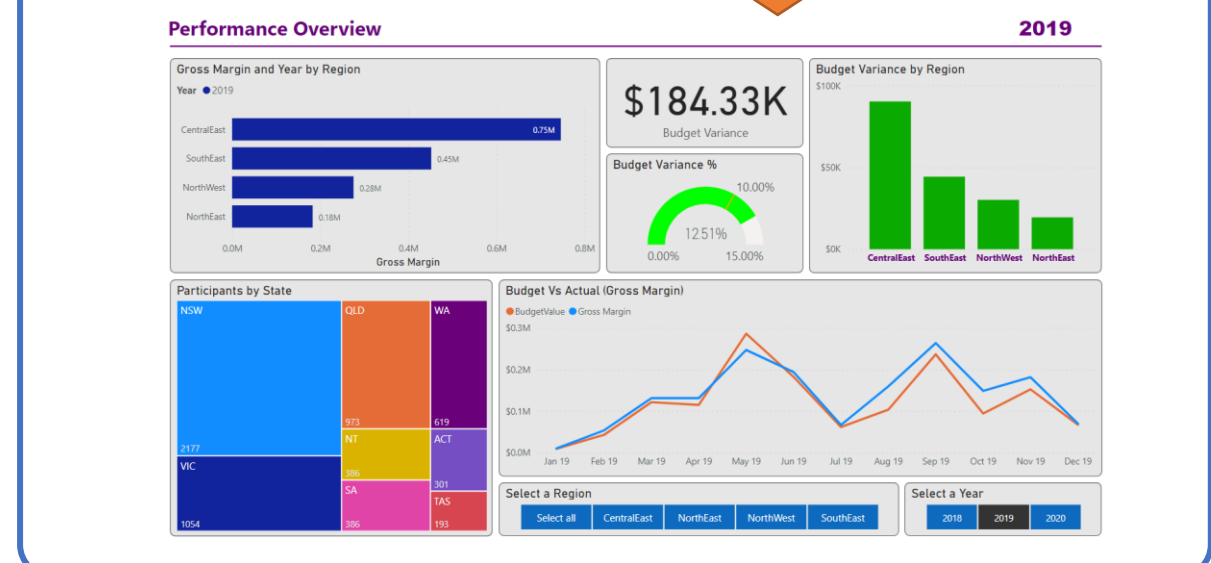
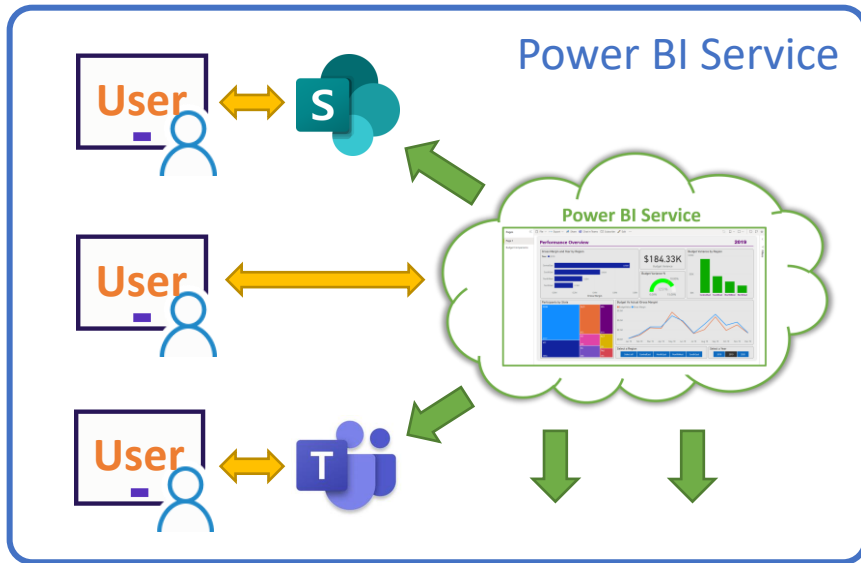
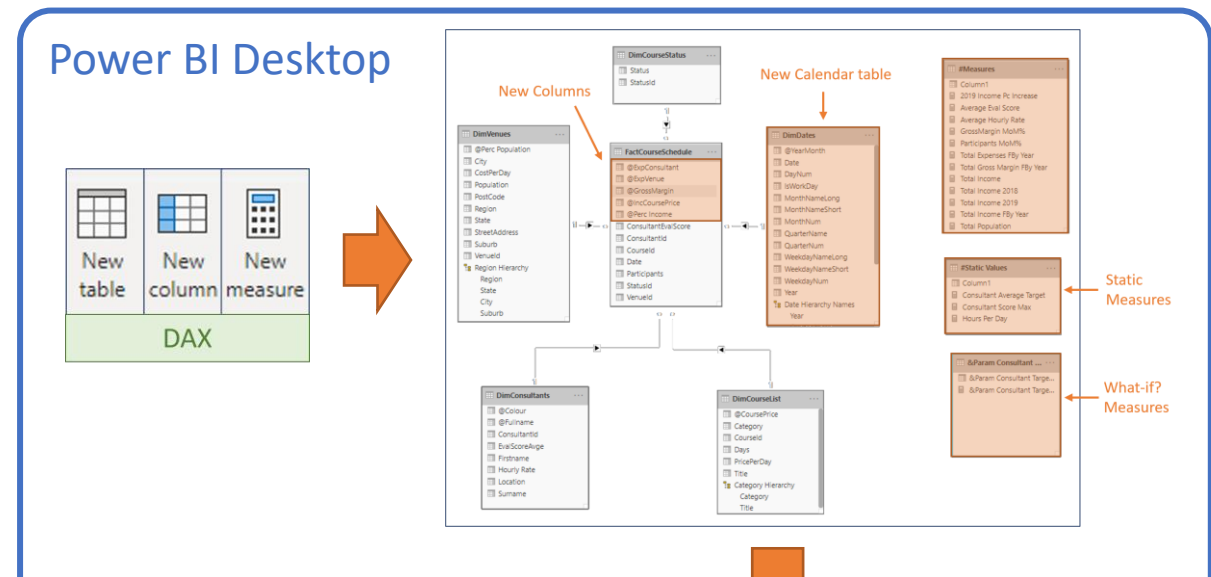
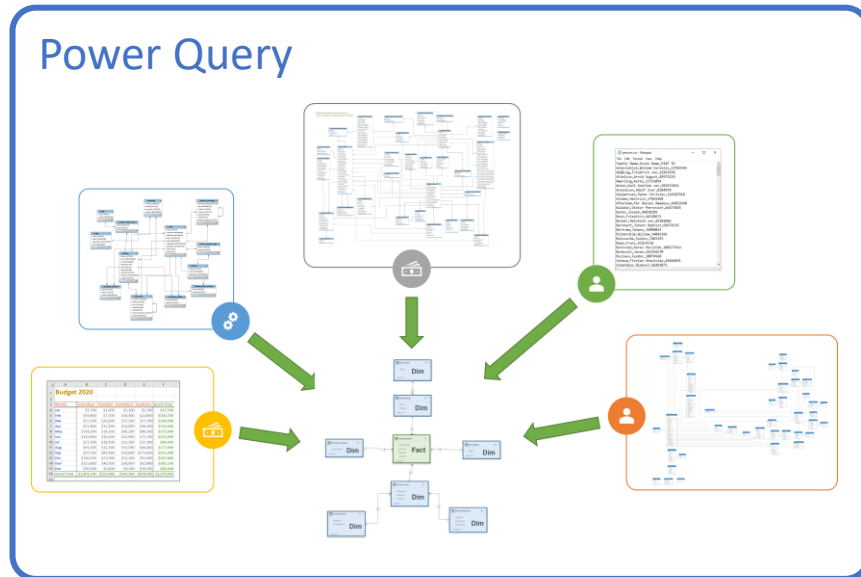
3. Easily create reports that look good, are easy to interpret and make sense



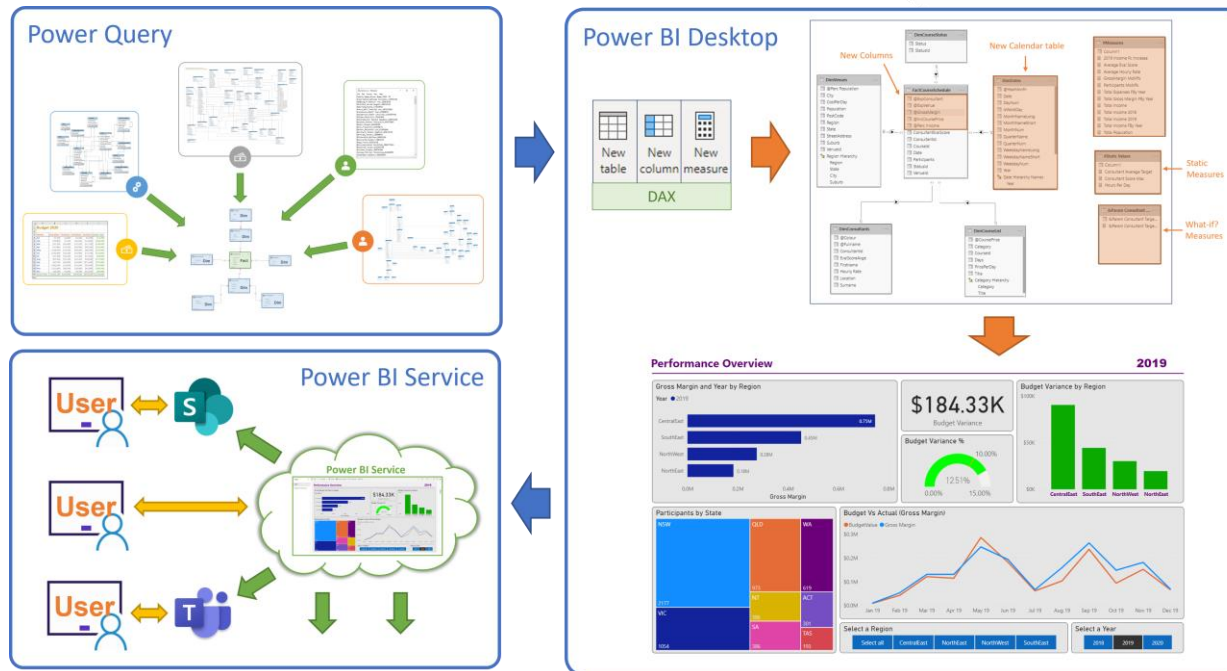
4. Allow secure sharing and integration with internal systems



5. Allow report consumers to 'serve themselves'



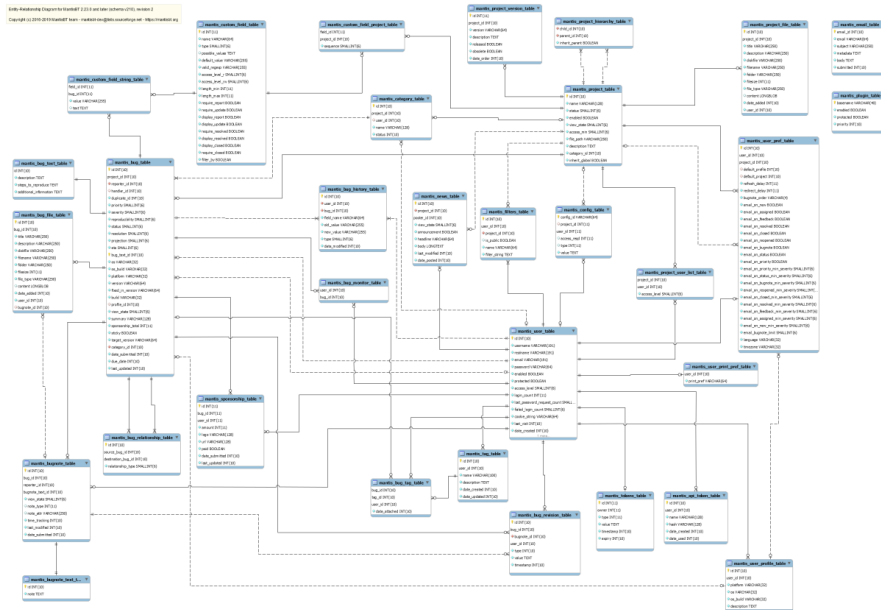
Let's break that down a bit ...



Storage Vs Analysis Structure

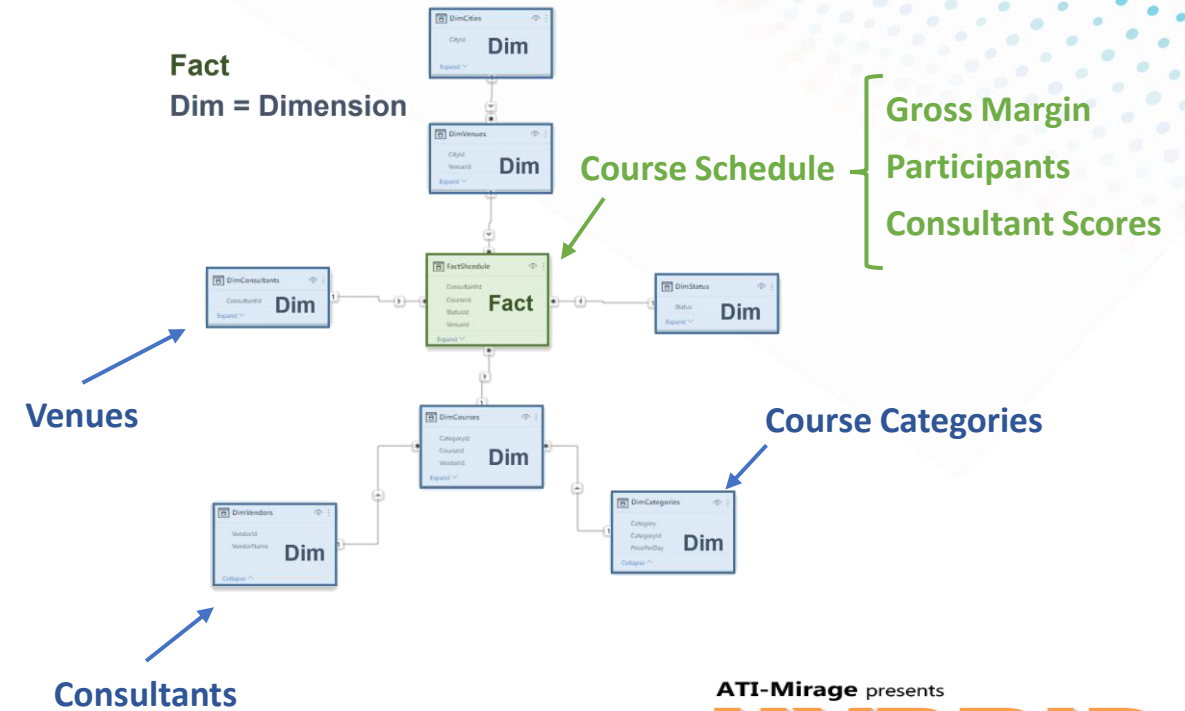
Data Storage

Efficient for storing data but horrible for analysis

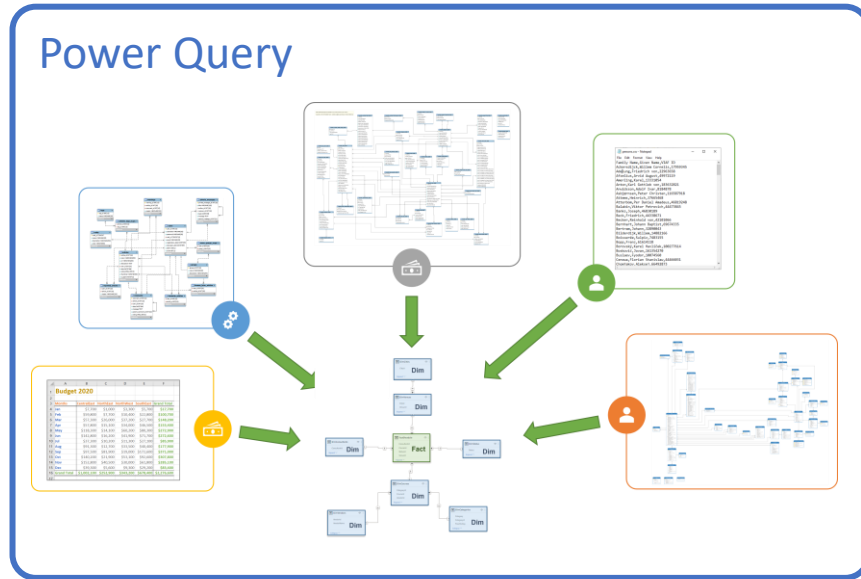


Data Analysis

Fact and Dimension tables in star structure



1. Integrate and transform multiple data sources into a simple model ...



Integrating many Data Sources



ENTERPRISE
MANAGEMENT



FINANCIAL
MANAGEMENT



FACILITIES
MANAGEMENT



EQUIPMENT
MANAGEMENT
SYSTEM



EMPLOYEE
MANAGEMENT



INFORMATION
MANAGEMENT



CUSTOMER
MANAGEMENT



PRODUCT
MANAGEMENT



SUPPLIER
MANAGEMENT



OPERATIONS
MANAGEMENT



SERVICE
MANAGEMENT

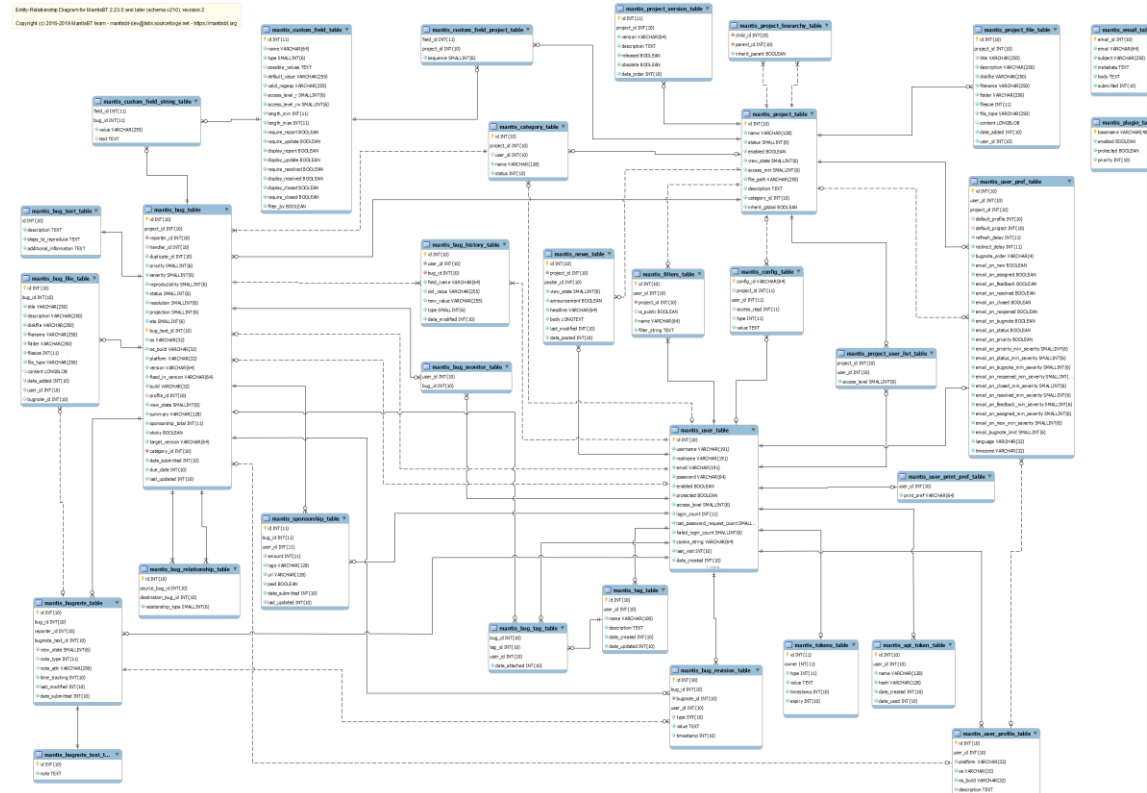


IMPROVEMENT
MANAGEMENT

Data Sources ...



FINANCIAL
MANAGEMENT



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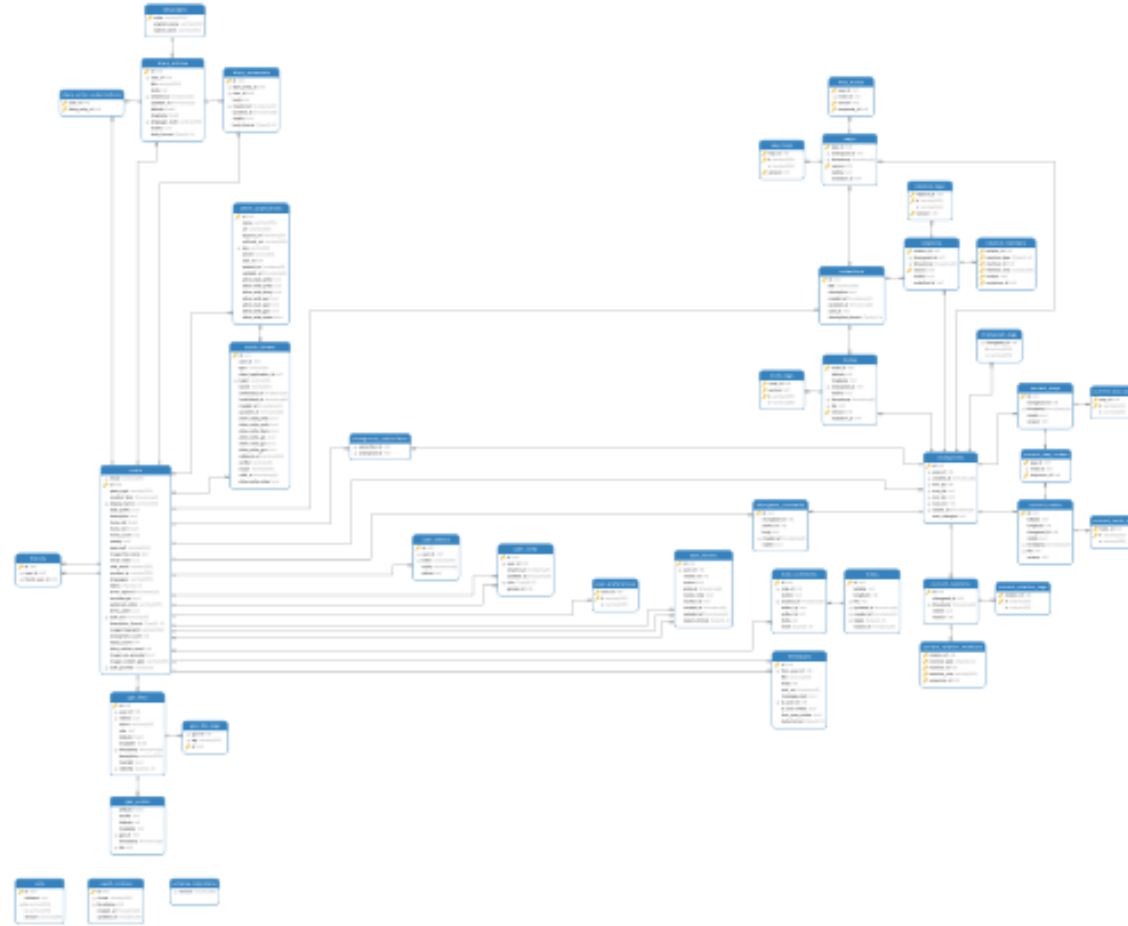
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Data Sources ...



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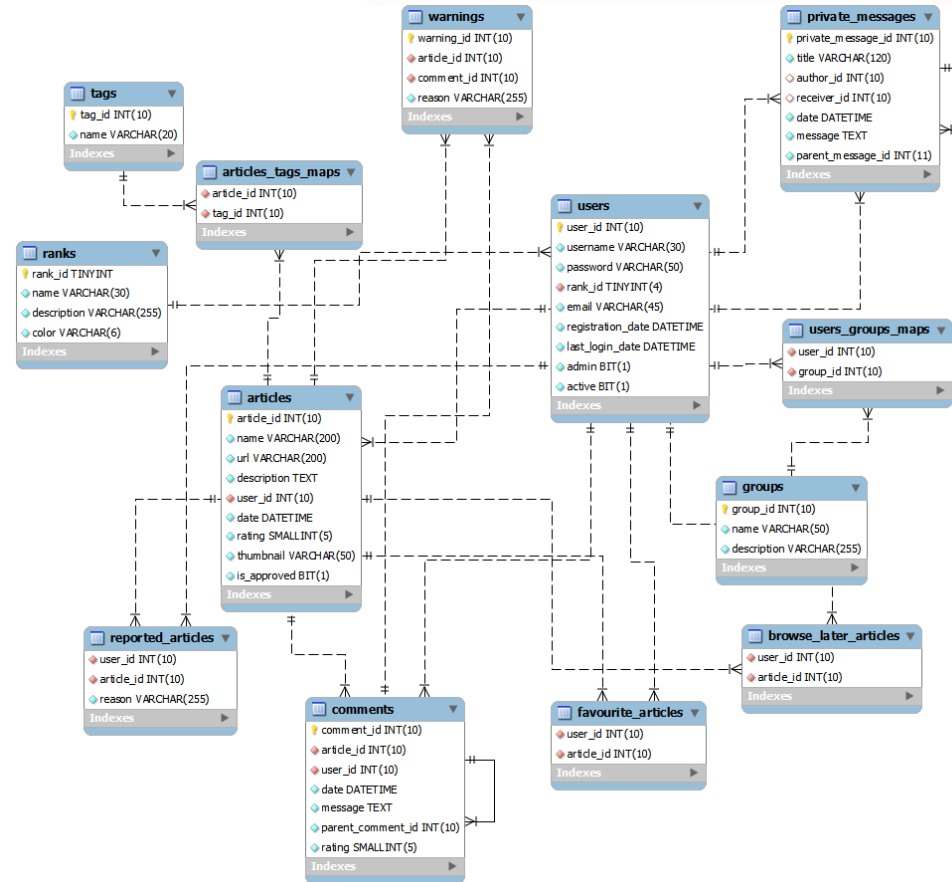
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Data Sources ...



OPERATIONS
MANAGEMENT



Data Sources ...



HUMAN RESOURCE
MANAGEMENT

```
persons.csv - Notepad
File Edit Format View Help
Family Name,Given Name,VIAF ID
Ackersdijck,Willem Cornelis,17959345
AdeLung,Friedrich von,22963658
Afzelius,Arvid August,49972119
Amerling,Karel,13331054
Anton,Karl Gottlob von,183632821
Arwidsson,Adolf Ivar,8184878
Asbjørnsen,Peter Christen,116587918
Attems,Heinrich,37665468
Atterbom,Per Daniel Amadeus,46819248
Balabin,Viktor Petrovich,44473845
Banks,Joseph,46830189
Beck,Friedrich,44338671
Becker,Reinhold von,42101066
Bernhart,Johann Baptist,69674335
Bertram,Johann,32890043
Bilderdijk,Willem,14882166
Boisserée,Sulpiz,7483155
Bopp,Franz,61614118
Borovský,Karel Havlíček,100277614
Bosković,Jovan,161354270
Buslaev,Fyodor,10074560
Cenowa,Florian Stanislaw,44466031
Chomiakov,Aleksei.66492873
```

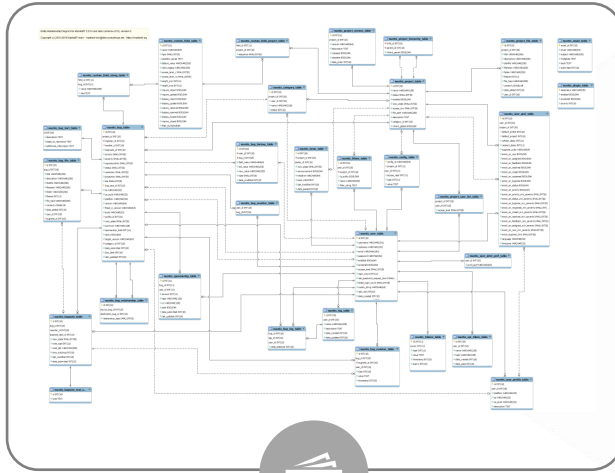
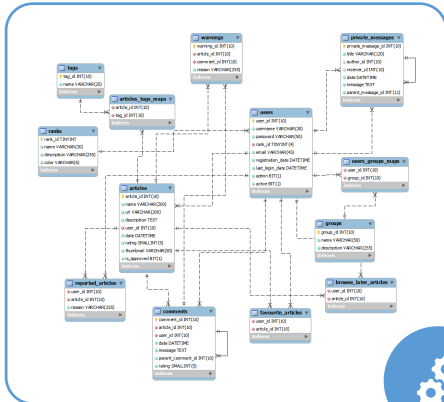

Data Sources ...



BUDGET FORECAST
MANAGEMENT

	A	B	C	D	E	F	
1	Budget 2020						
2							
3	Months	CentralEast	NorthEast	NorthWest	SouthEast	Grand Total	
4	Jan	\$7,700	\$1,000	\$3,300	\$5,700	\$17,700	
5	Feb	\$59,800	\$7,700	\$10,400	\$22,800	\$100,700	
6	Mar	\$57,300	\$26,000	\$37,200	\$27,700	\$148,200	
7	Apr	\$57,800	\$15,100	\$34,000	\$46,500	\$153,400	
8	May	\$118,300	\$14,100	\$60,200	\$80,300	\$272,900	
9	Jun	\$142,800	\$16,200	\$41,900	\$71,700	\$272,600	
10	Jul	\$37,300	\$10,200	\$11,300	\$27,100	\$85,900	
11	Aug	\$91,300	\$12,700	\$33,500	\$40,400	\$177,900	
12	Sep	\$97,500	\$81,900	\$19,000	\$172,600	\$371,000	
13	Oct	\$140,200	\$21,900	\$53,100	\$92,600	\$307,800	
14	Nov	\$152,800	\$40,500	\$30,000	\$61,800	\$285,100	
15	Dec	\$39,300	\$5,600	\$9,300	\$29,200	\$83,400	
16	Grand Total	\$1,002,100	\$252,900	\$343,200	\$678,400	\$2,276,600	
17							

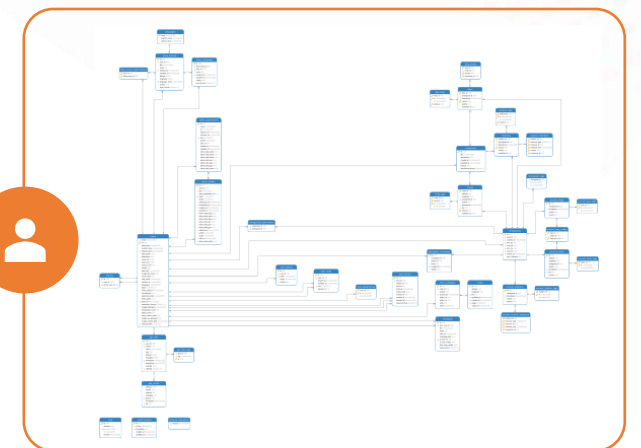
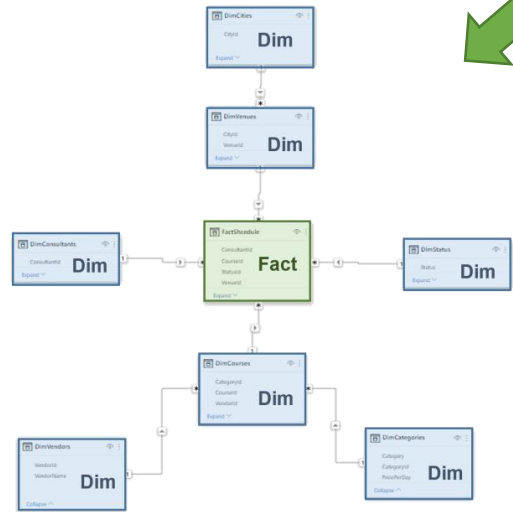
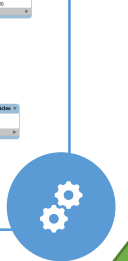
Integrating



```

persons.csv - Notepad
File Edit Format View Help
Family Name,Given Name,VIAF ID
Ackersdijk,Willem Cornelis,17959345
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16	Grand Total	\$1,002,100	\$252,900	\$343,200	\$678,400	\$2,276,600



Transforming Data Sources

1. Use (or hire) a specialised database team:
 - Experts in Database Schemas and Structure Query Language (SQL)
 - Create a Data Warehouse to house the model (complex using SQL)
2. Train up a semi-technical person to use **Power Query**
 - Relatively easy to use – Microsoft ribbons interface
 - No advanced programming skills required (although you can do this too)
 - Create and automates the transformation steps
 - When data changes: one button push to refresh

Power Query ...

Load into the Model

Use the tool buttons to transform your tables

Automate your transformation steps

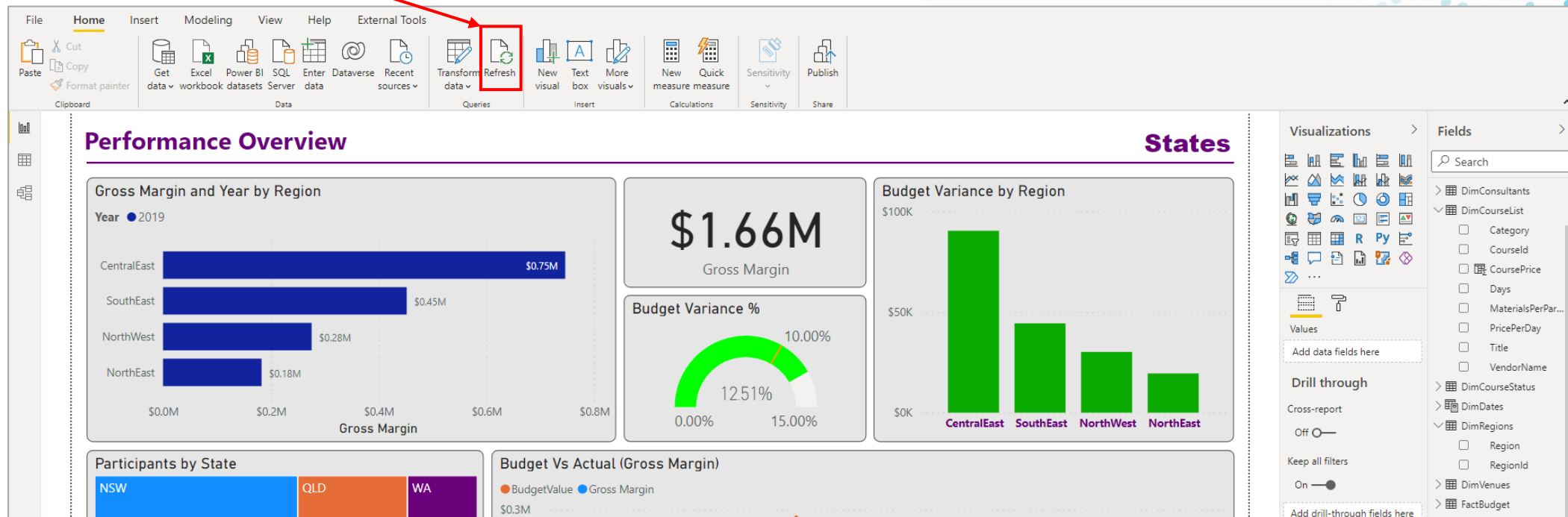
Connect to your Data Sources

The screenshot displays the Microsoft Power Query Editor interface. The ribbon at the top includes tabs for File, Home, Transform, Add Column, View, Tools, and Help. The Transform tab is active, showing various transformation options like Merge Queries, Append Queries, and Combine Files. A red box highlights the 'Merge Queries' dropdown menu. The main area shows a data table with columns: VenueId, StreetAddress, Suburb, PostCode, CostPerDay, Capacity, City, and State. The 'DimVenues' query is selected in the Queries list on the left. The Query Settings pane on the right shows the 'APPLIED STEPS' list, which includes: Source, Navigation, Promoted Headers, Merged Queries (highlighted), Expanded Cities, Removed Columns, Merged Queries2, Expanded CitiesLatLongWeb, Sorted Rows, and Changed Type.

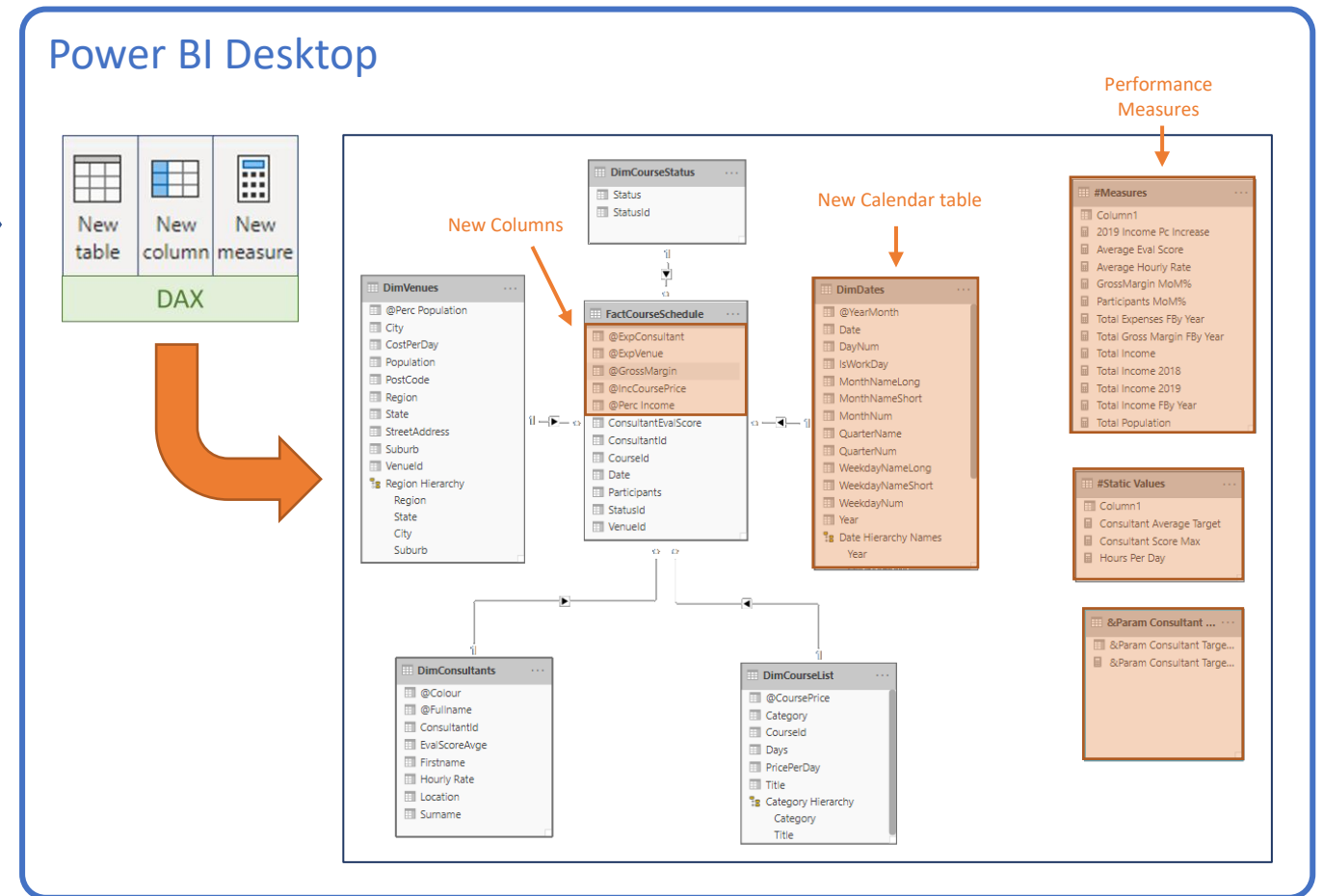
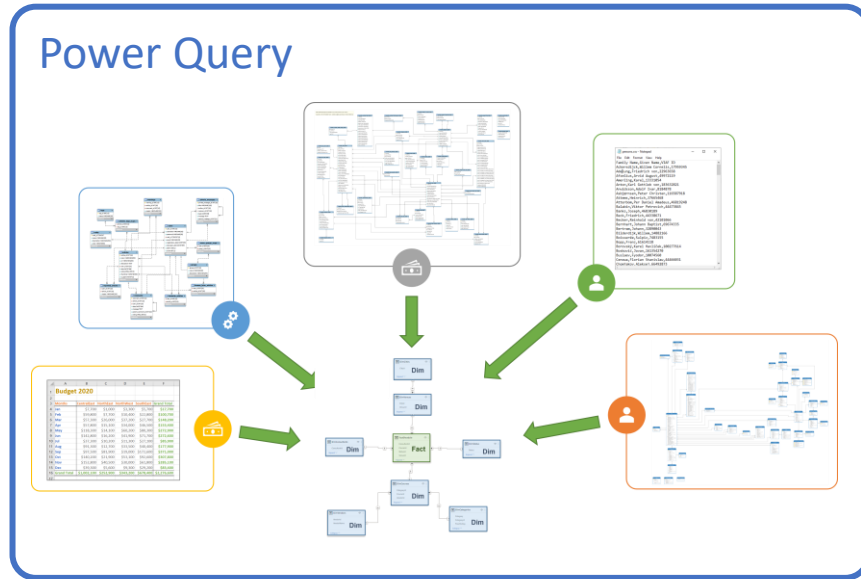
VenueId	StreetAddress	Suburb	PostCode	CostPerDay	Capacity	City	State
1	100 Miller St	North Sydney	2060	870.00		20 Sydney	NSW
2	333 George St	Sydney	2000	860.00		15 Sydney	NSW
3	21 Erskineville Rd	Newtown	2042	1,030.00		10 Sydney	NSW
4	92 Parramatta Rd	Lidcombe	2144	830.00		8 Sydney	NSW
5	160 Swanston St	Melbourne	3000	1,070.00		35 Melbourne	VIC
6	34 Canning St	North Melbourne	3051	800.00		20 Melbourne	VIC
7	670 Chapel St	South Yarra	3141	800.00		12 Melbourne	VIC
8	414 George St	Brisbane City	4000	800.00		15 Brisbane	QLD
9	264 Ipswich Road Buranda	Woolloongabba	4102	1,190.00		8 Brisbane	QLD
10	100 St Georges Terrace	Perth	6000	890.00		25 Perth	WA
11	405 William St	Perth	6000	810.00		14 Perth	WA
12	80 Rundle Mall	Adelaide	5000	990.00		20 Adelaide	SA
13	160 Cotlew St	Ashmore	4214	1,120.00		12 Gold Coast	QLD
14	23 Steel St	Newcastle West	2302	1,010.00		10 Newcastle	NSW
15	40 Bunda St	Canberra	2601	880.00		30 Canberra	ACT
16	40 William St	Gosford	2250	1,080.00		14 Gosford	NSW
17	44 Argyle St	Hobart	7000	950.00		25 Hobart	TAS
18	393 Flinders St	Townsville	4810	900.00		20 Townsville	QLD
19	69 Mitchell Street	Darwin City	0800	920.00		14 Darwin	NT

Power BI Desktop

Refresh to load new data



2. Enhance the analysis Model with calculations and measures using DAX

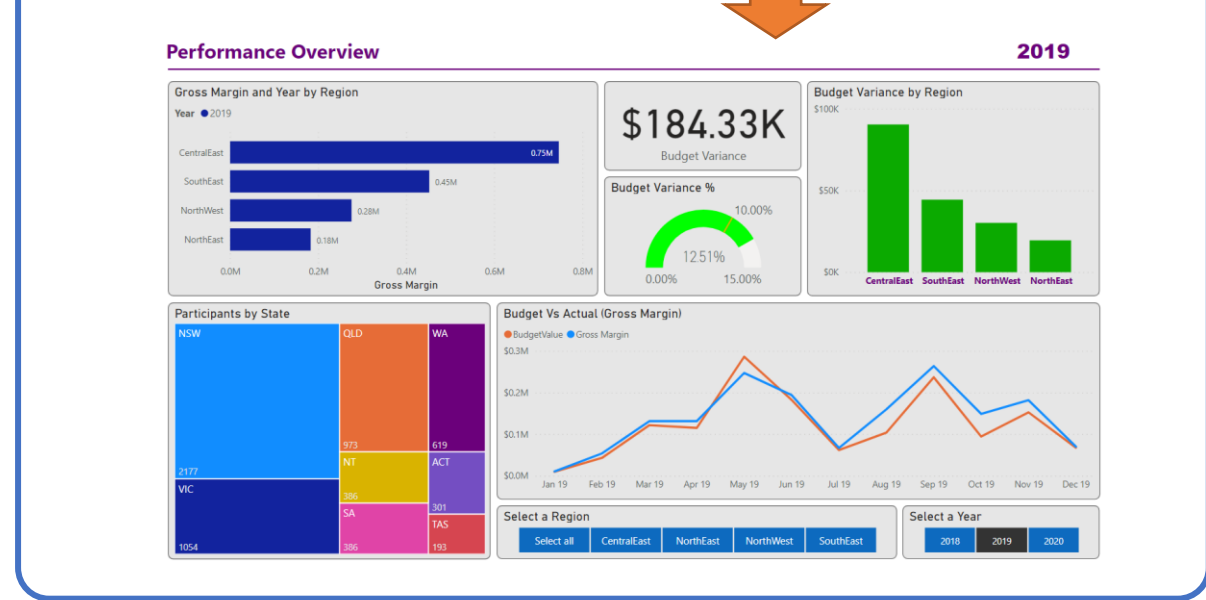
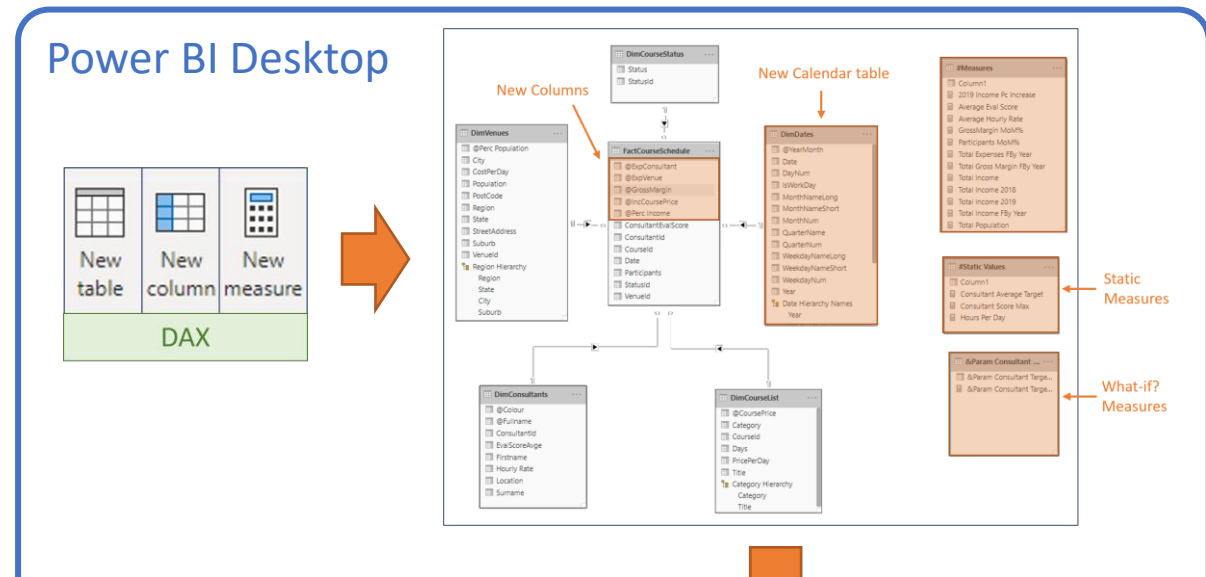
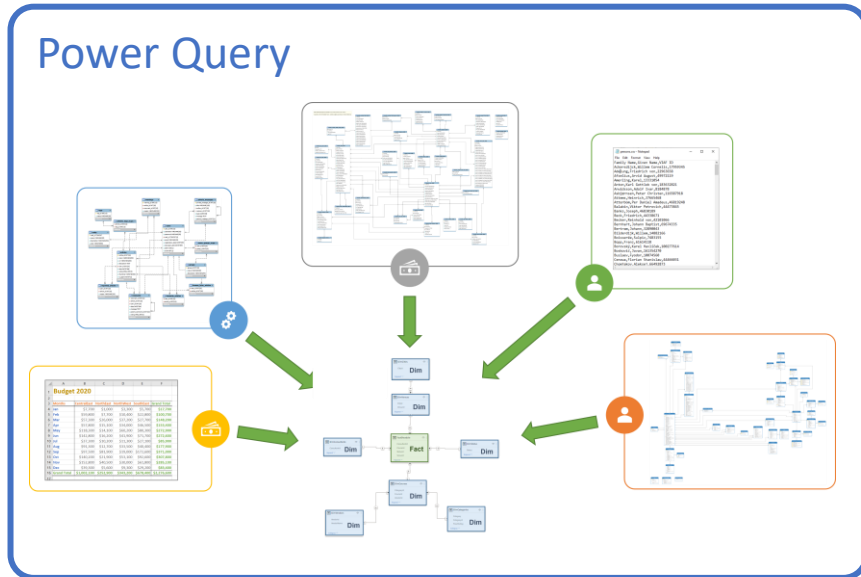


Data Analysis Expressions (DAX)

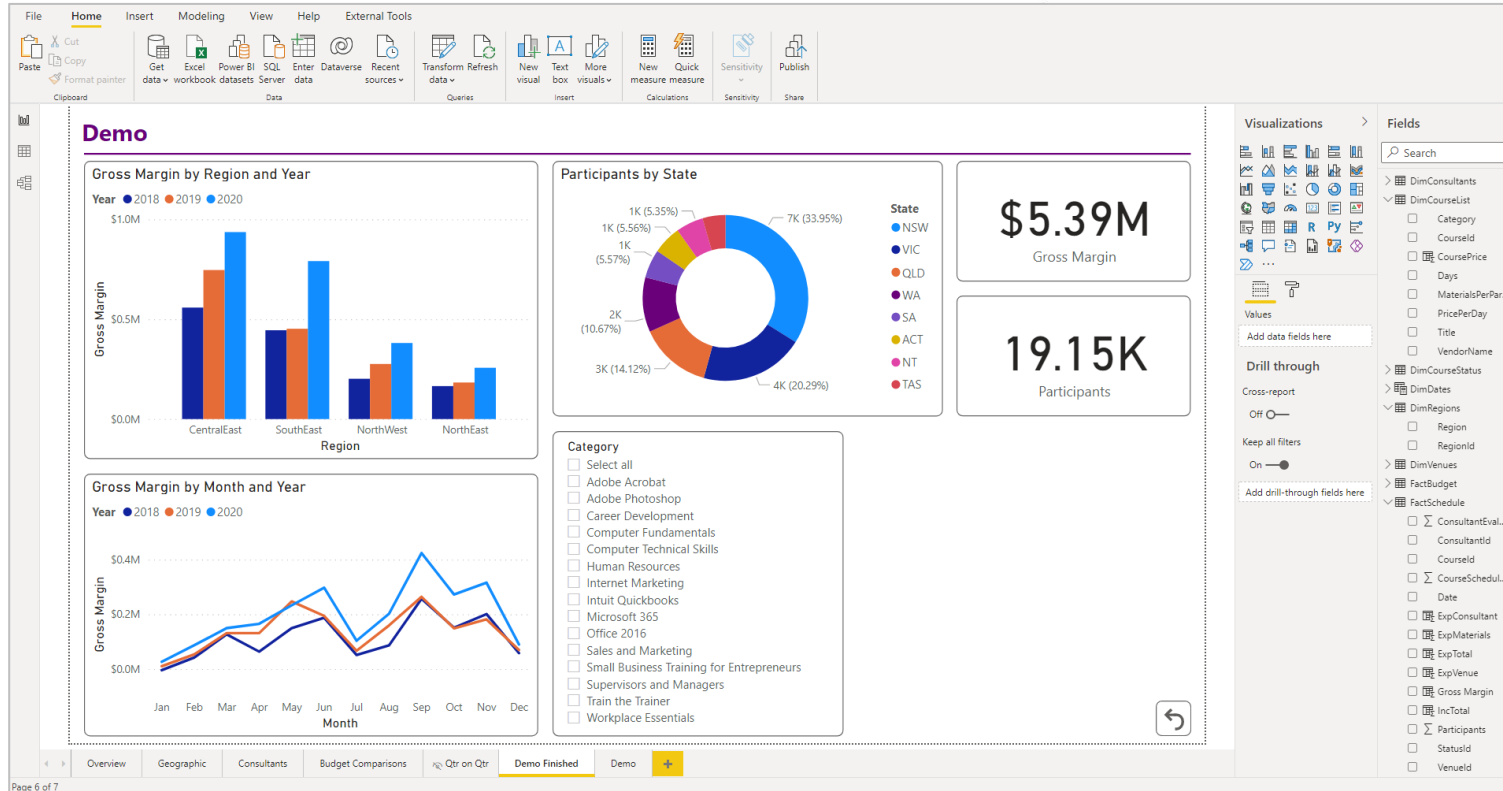
- Excel-like language, focused on working with an Analysis Model
- DAX can be used to:
 - Create new calculated columns in an existing table
 - Create an entirely new table
 - Create complex performance measures accessing the entire model

```
Gross Margin MoM % =  
VAR PREV_MONTH =  
    CALCULATE(  
        SUM( FactSchedule[GrossMargin] ),  
        DATEADD( DimDates[Date], -1, MONTH )  
    )  
RETURN  
    DIVIDE(  
        SUM( [Total Gross Margin] ) - PREV_MONTH,  
        PREV_MONTH,  
        0  
    )
```

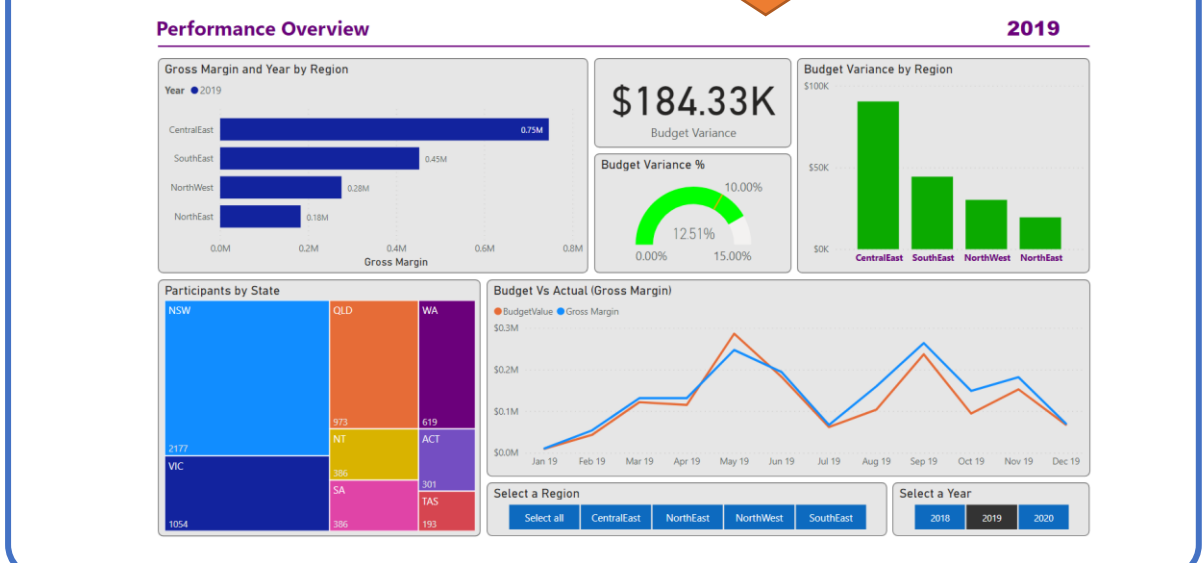
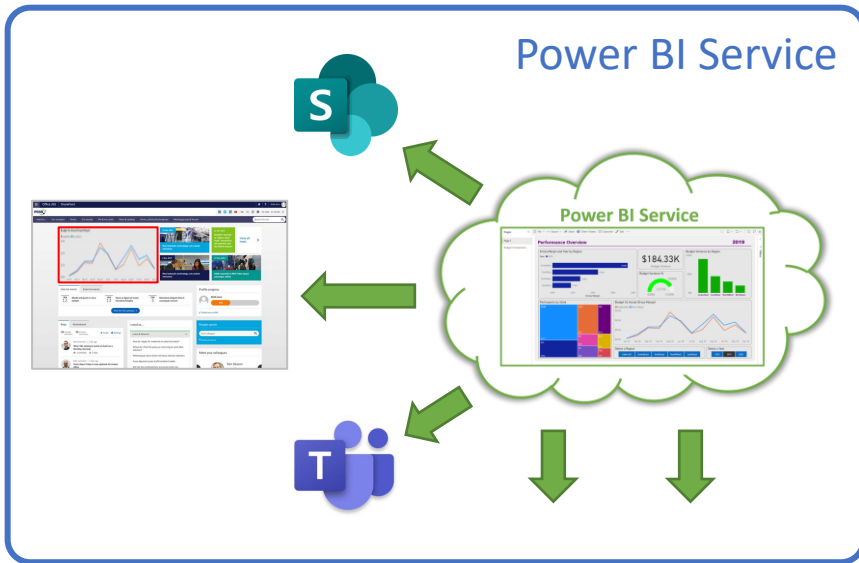
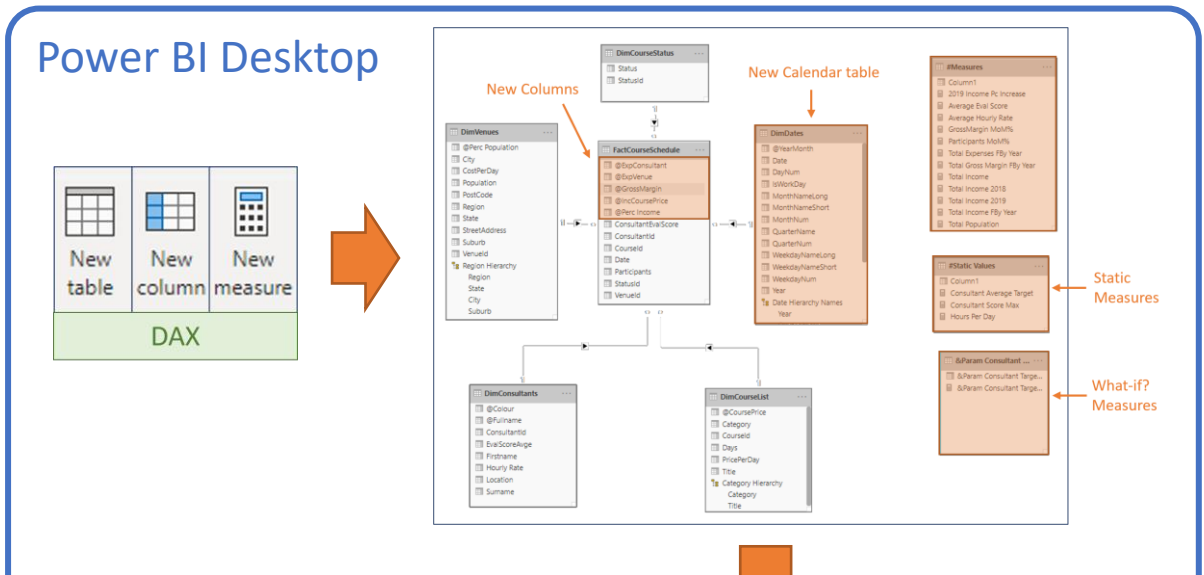
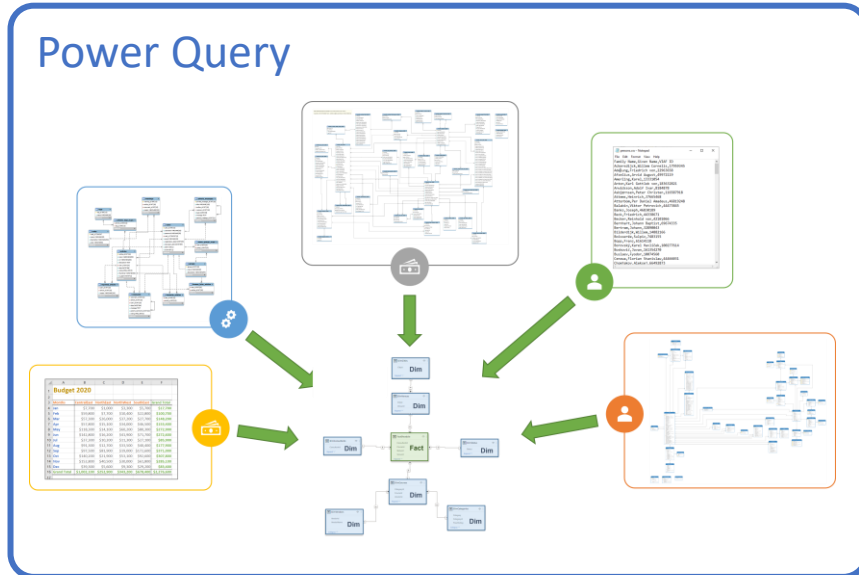
3. Easily create reports that look good, are easy to interpret and make sense



Demo



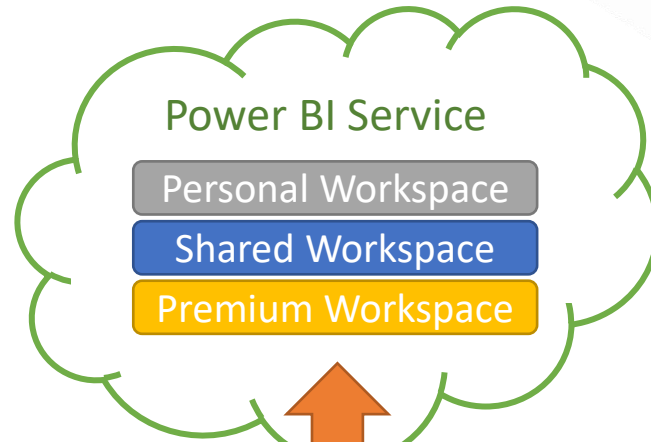
4. Allow secure sharing and integration with internal systems



Sharing Reports

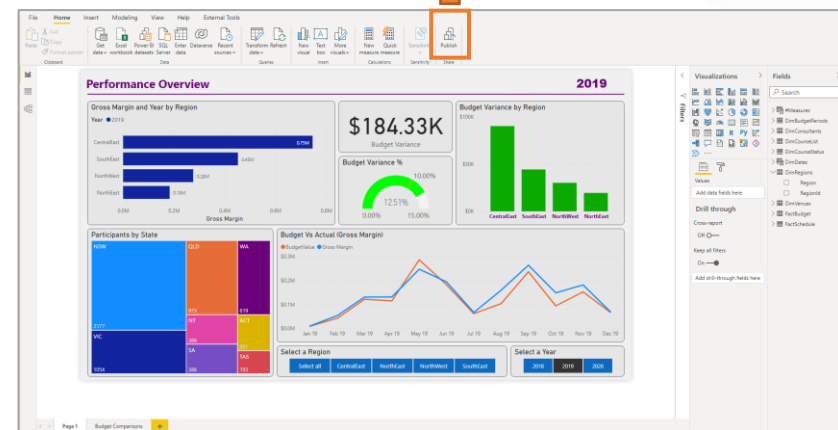
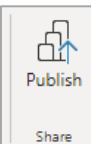
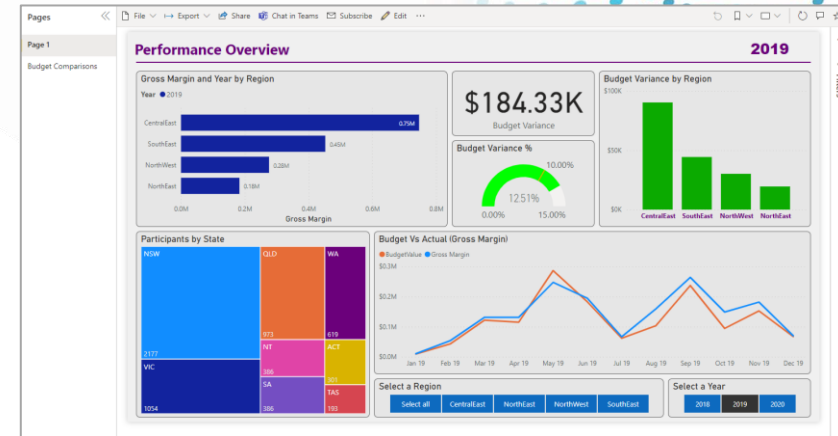
Internet

Local Machine

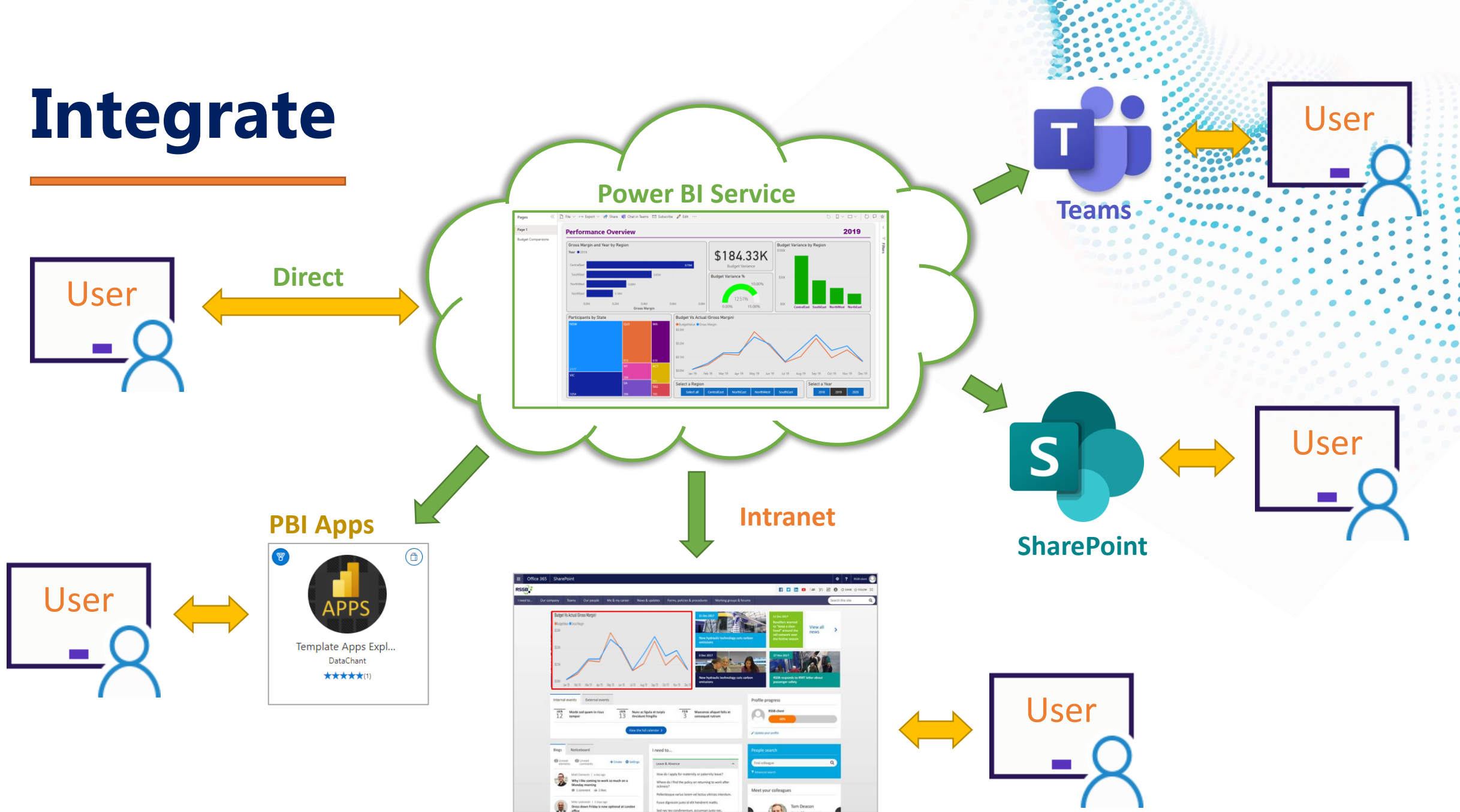


Publish

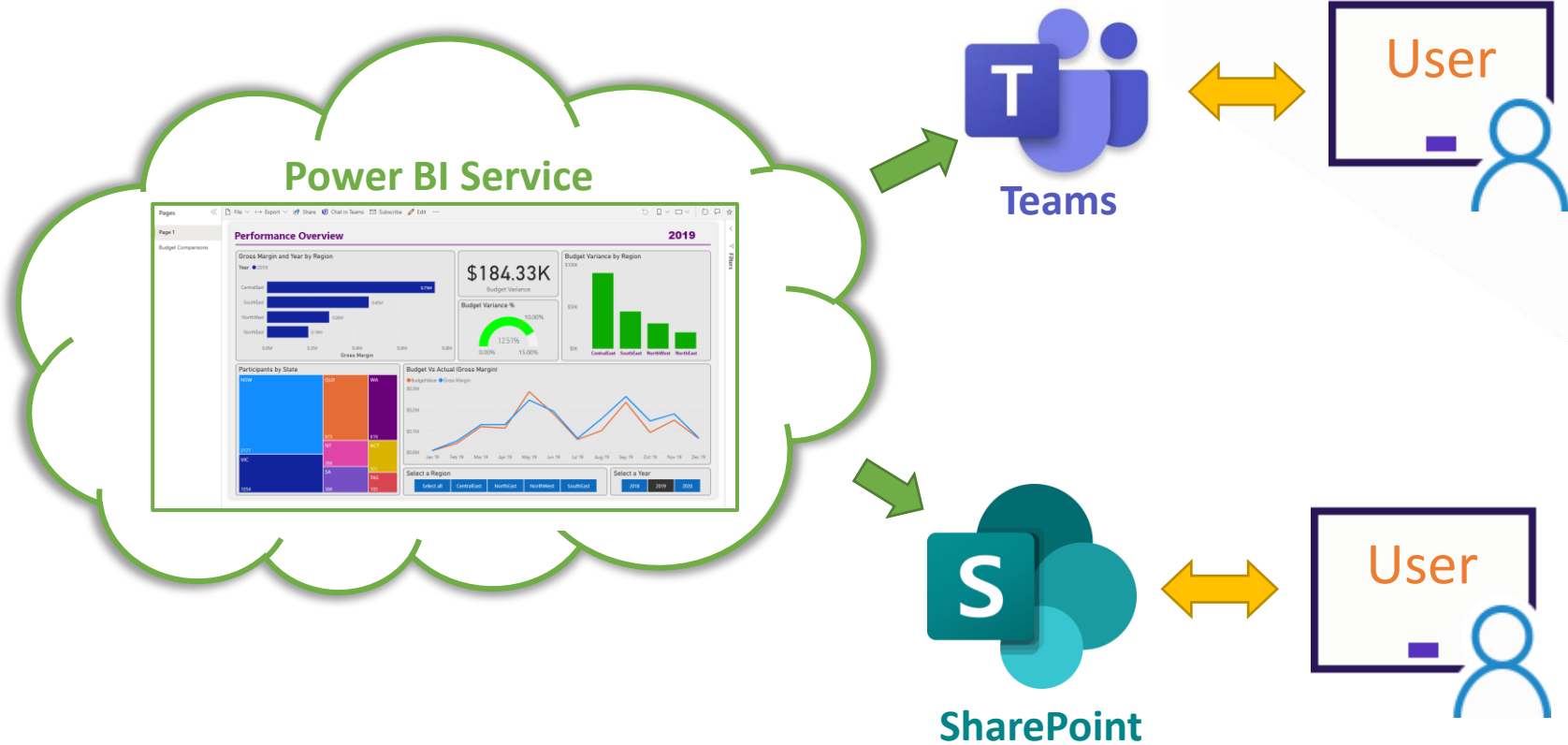
Power BI
Desktop



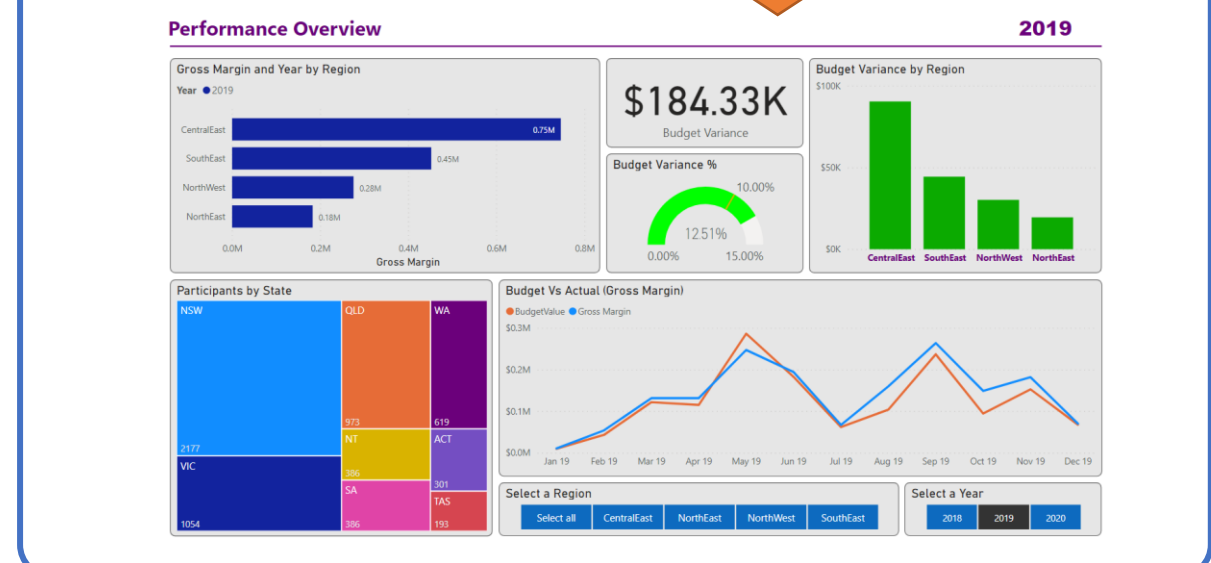
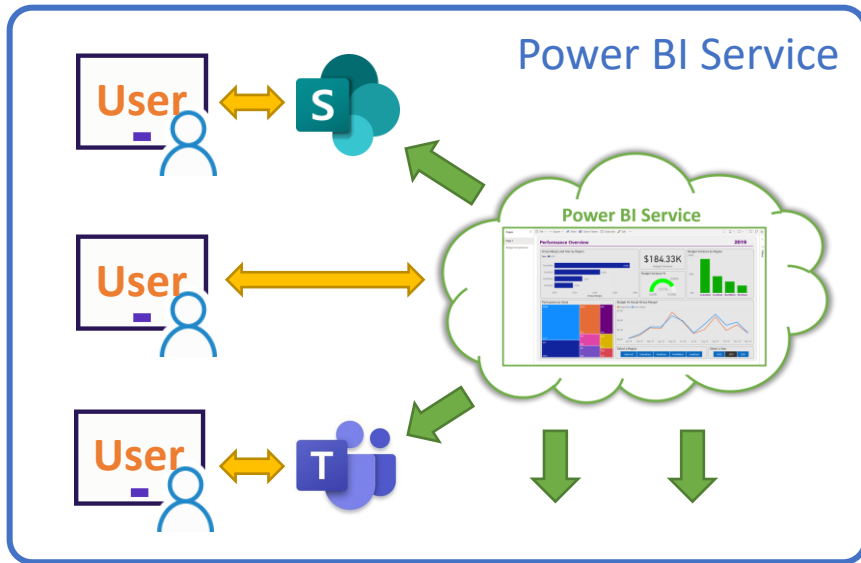
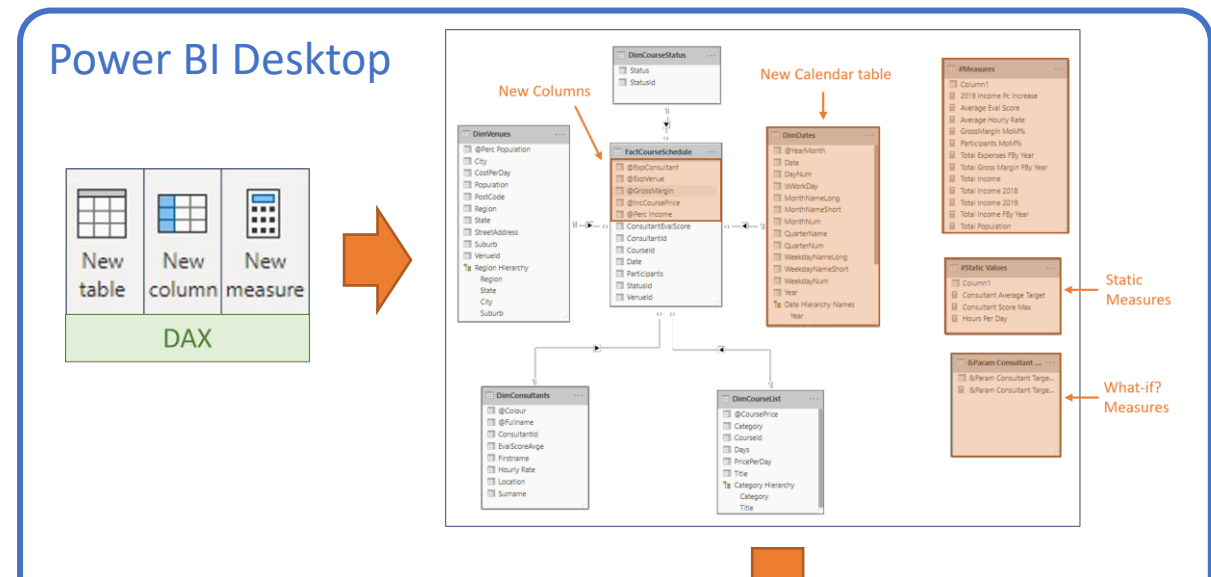
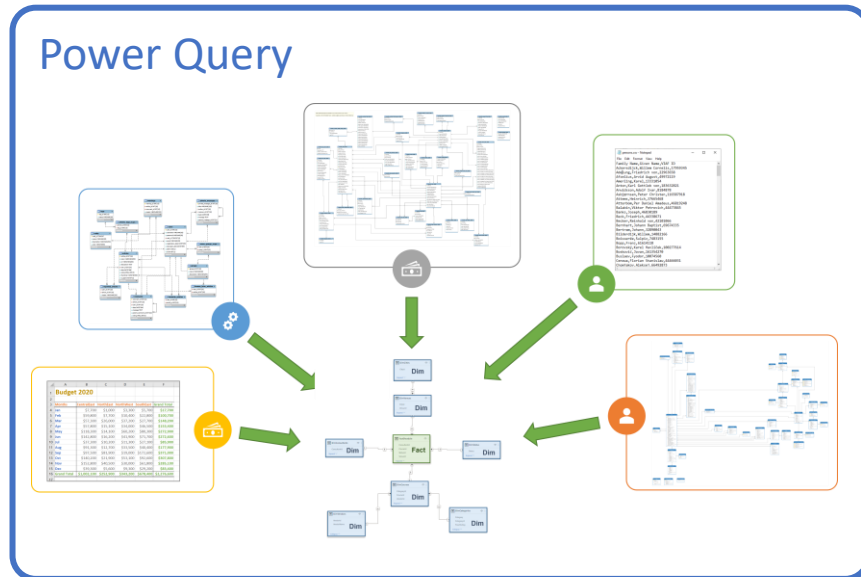
Integrate



Demo



5. Allow report consumers to 'serve themselves'



Self-Service

Consumers (managers and decision makers) can:

- Interact with, and change the reports as they need to
- Get the figures and measures they want without having to go back to designers
- Can control level depending on the skill level of the Consumers

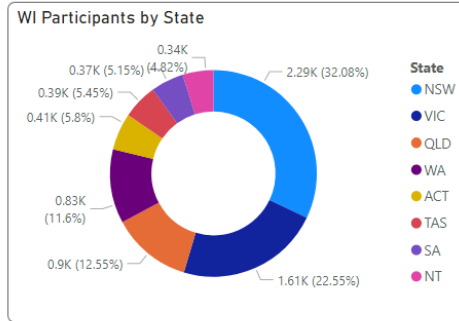
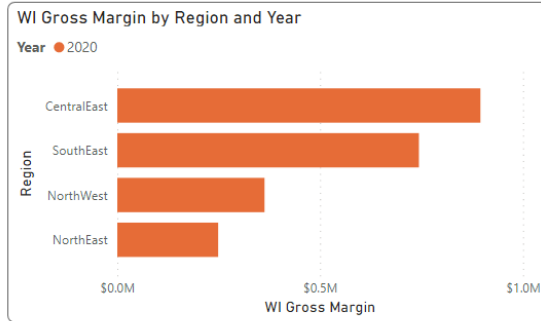
Some examples in Power BI:

- Hover over Tooltips
- Interactions between visuals
- Advanced filtering
- Drill down & Drill through
- What-if analysis
- Decomposition Tree
- Lots of other methods too

Demo

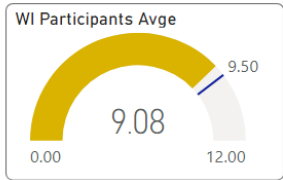
Demo - What If: Participants increased by ...

All Regions 2020



\$2.25M
WI Gross Margin

7.14K
WI Participants

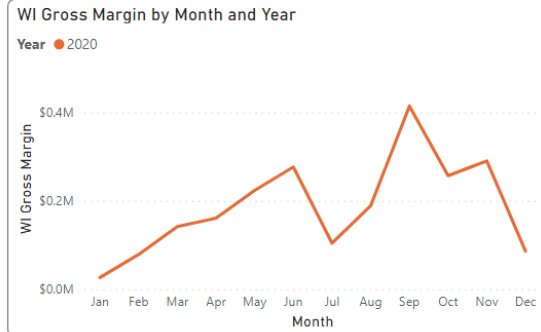


Choose a Year

2018 2019 **2020**

Participants Increase %

0



Category	WI Participants Avg
Career Development	9.02
Computer Fundamentals	9.67
Computer Technical Skills	7.00
Human Resources	8.38
Internet Marketing	8.73
Microsoft 365	8.64
Office 2016	9.16
Sales and Marketing	9.69
Small Business Training for Entrepreneurs	8.35
Supervisors and Managers	9.54
Train the Trainer	8.73
Workplace Essentials	9.37
Total	9.08

Filters

Search

Filters on this page

VendorName is (Blank) or Microsoft

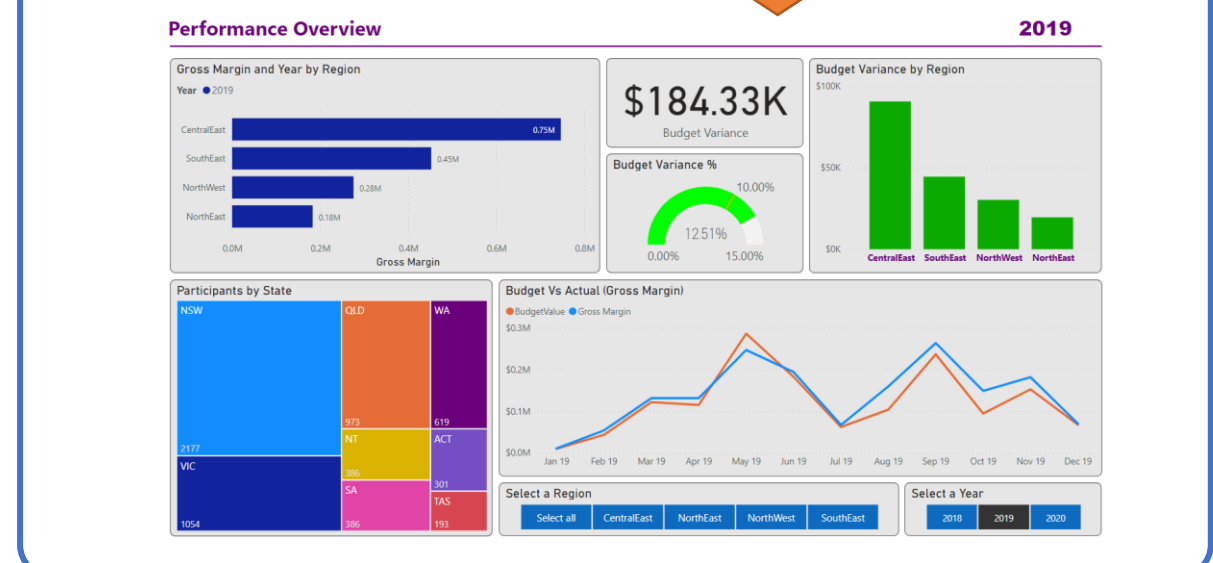
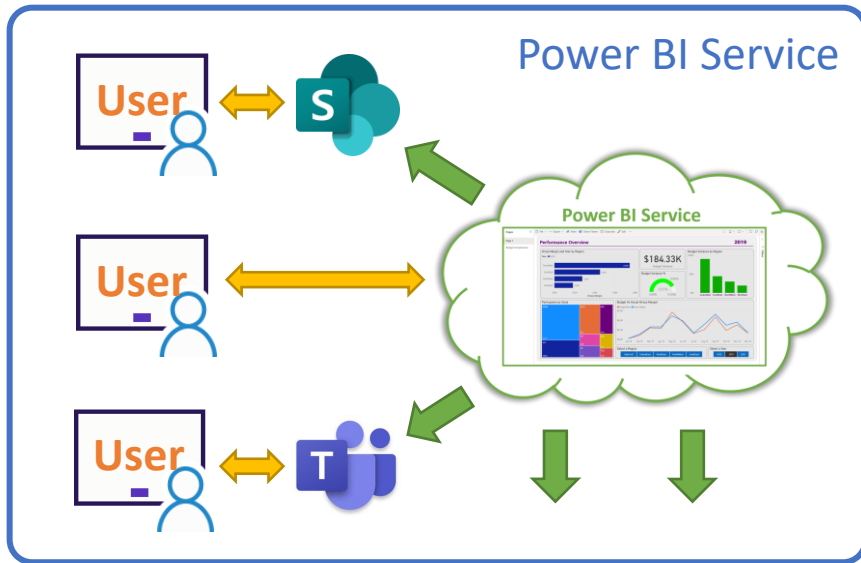
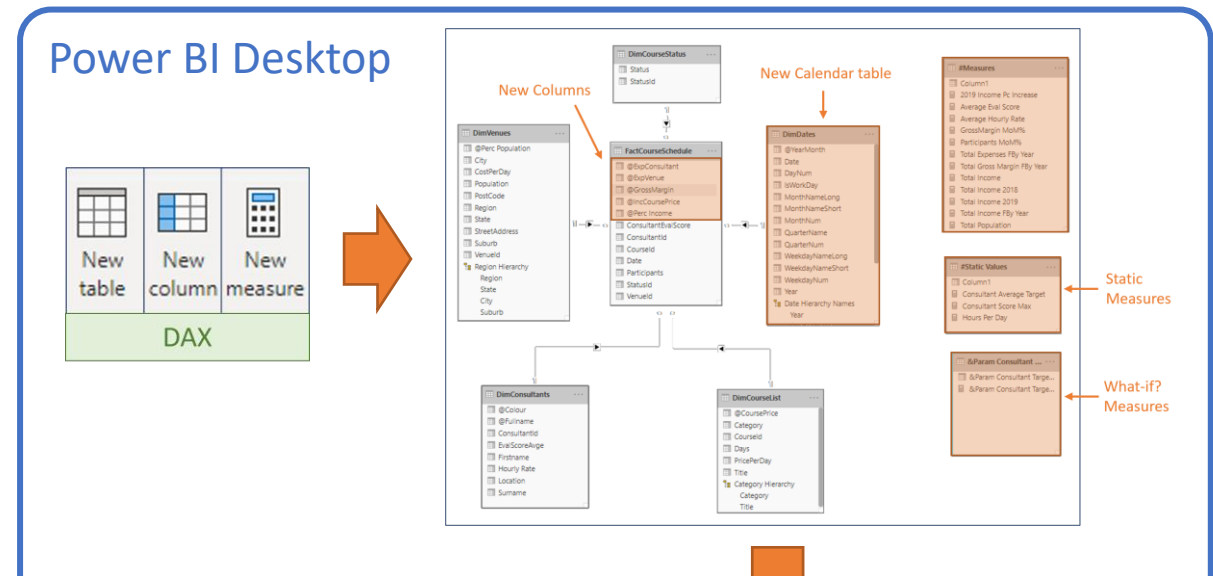
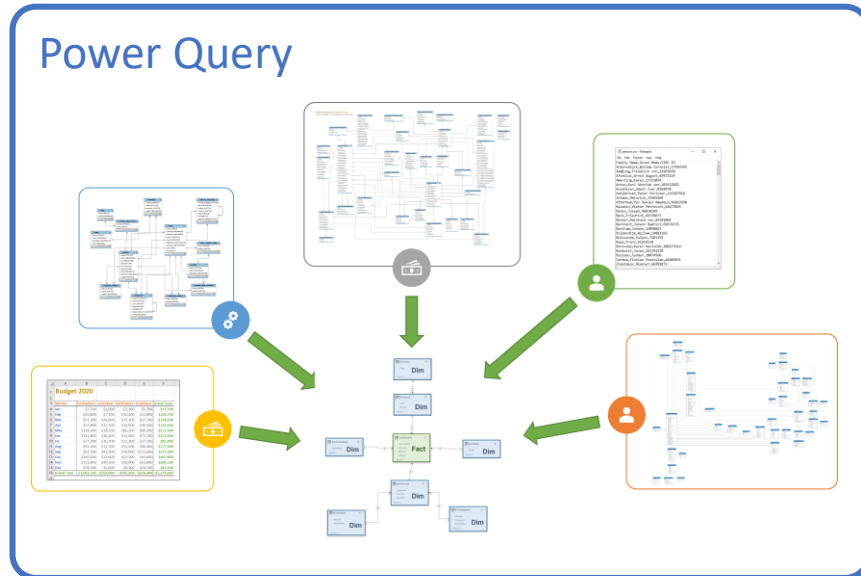
Add data fields here

Filters on all pages

State is not (Blank)

Add data fields here

Overview of the Microsoft Power BI infrastructure



The future of BI

What does the future hold?

The future of Business Intelligence

- **More Collaboration** for greater teamwork.
- **Better Integration** (inbound and outbound).
- **Machine Learning and AI** for insights and forecasting.
- **Data Proactivity** to deliver insights and anomalies to your door.
- **Technology Advancements** for bigger data and faster updates.
- **Data Driven Culture** to incorporate BI into everyday processes

Demo

Microsoft Power BI – Some example AI Visuals

- Key Influencers
- Q and A
- Smart Narrative

Recommended Courses

- Power BI – The Essentials
 - Creating Reports
 - Using Power Query
 - Enhancing the Model with DAX
- Power BI Advanced – Using advanced DAX
- Power BI Advanced – Advanced Transformations

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Questions

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Thank you

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