Goals for this session

Slowly Changing Dimensions

1. Overview of Dimensional Modelling

2. What is Slowly Changing Dimension
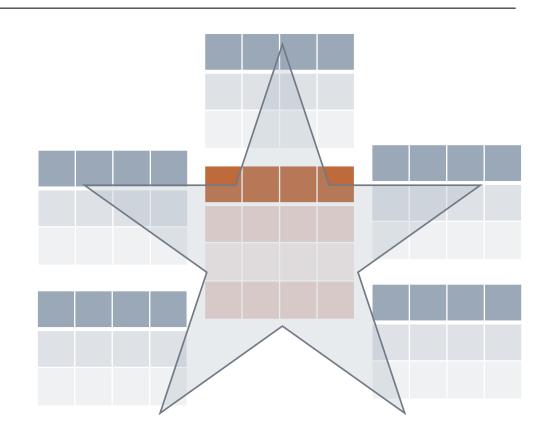
3. Examples in Power BI

4. Q&A

Dimensional Modelling

Fact Table

- Observations or events

- Sales Orders, Stock Prices, Incidents on a road, Crimes Committed

Dimension Tables

- Describe the observations or events

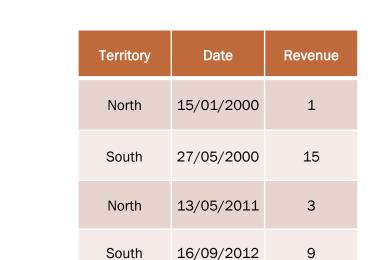- Customers, Companies, Date, Police constituency

What has happened historically?

Name	Employee ID	Territory	Start Date	End Date	Current Flag
Paul	1	North	01/01/2000	31/12/2010	N
Paul	1	South	01/01/2011	31/12/2020	Y
Jen	2	North	01/01/2011	31/12/2020	Y
Jen	2	South	01/01/2000	31/12/2010	N

- Paul used to look after the North, now looks after the South

- Jen used to look after the South, now looks after the North

- Current reporting is showing all the sales for their current area

How can we create a relationship?

Name	Employee ID	Territory	Start Date	End Date	Current Flag
Paul	1	North	01/01/2000	31/12/2010	N
Paul	1	South	01/01/2011	31/12/2020	Y
Jen	2	North	01/01/2011	31/12/2020	Y
Jen	2	South	01/01/2000	31/12/2010	N

Territory	Date	Revenue
North	15/01/2000	1
South	27/05/2000	15
North	13/05/2011	3
South	16/09/2012	9

Create a unique key in the dimension and add a reference in the fact

Name	Employee ID	Territory	Start Date	End Date	Current Flag	Unique Key
Paul	1	North	01/01/2000	31/12/2010	N	0
Paul	1	South	01/01/2011	31/12/2020	Y	1
Jen	2	North	01/01/2011	31/12/2020	Y	2
Jen	2	South	01/01/2000	31/12/2010	N	3

Territory	Date	Revenue	Key
North	15/01/2000	1	0
South	27/05/2000	15	3
North	13/05/2011	3	2
South	16/09/2012	9	1

Add the key into the Fact using a reference table

Territory	Start Date	End Date	Unique Key
North	01/01/2000	31/12/2010	0
South	01/01/2011	31/12/2020	1
North	01/01/2011	31/12/2020	2
South	01/01/2000	31/12/2010	3
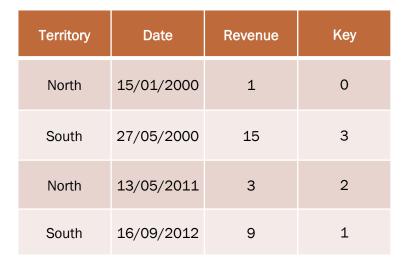
Territory	Date	Revenue	Key
North	15/01/2000	1	0
South	27/05/2000	15	3
North	13/05/2011	3	2
South	16/09/2012	9	1

- Date of transaction is greater than start date and less than end date

- Territory matches the territory in the dimension

What happens when we activate the inactive relationship

Name	Employee ID	Current Territory
Paul	1	North
Jen	2	South

Name	Employee ID	Territory	Start Date	End Date	Current Flag	Unique Key
Paul	1	North	01/01/2000	31/12/2010	N	0
Paul	1	South	01/01/2011	31/12/2020	Y	1
Jen	2	North	01/01/2011	31/12/2020	Y	2
Jen	2	South	01/01/2000	31/12/2010	N	3

Territory	Date	Revenue	Key
North	15/01/2000	1	0
South	27/05/2000	15	3
North	13/05/2011	3	2
South	16/09/2012	9	1
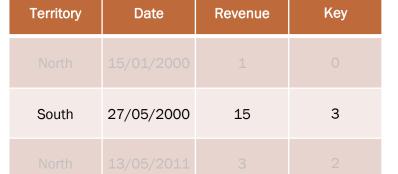
What happens when we activate the relationship – Jen (South)

Name	Employee ID	Current Territory
Paul	1	North
Jen	2	South

Name	Employee ID	Territory	Start Date	End Date	Current Flag	Unique Key
Paul	1	North	01/01/2000	31/12/2010	N	0
Paul	1	South	01/01/2011	31/12/2020	Y	1
Jen	2	North	01/01/2011	31/12/2020	Y	2
Jen	2	South	01/01/2000	31/12/2010	N	3

Territory	Date	Revenue	Key
North	15/01/2000	1	0
South	27/05/2000	15	3
North	13/05/2011	3	2
South	16/09/2012	9	1