



Sri Lanka Institute Of Information Technology

Predicting Coupon Redemption Data Warehouse

Data Warehouse & Business Intelligence

Assignment II

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IT20211400

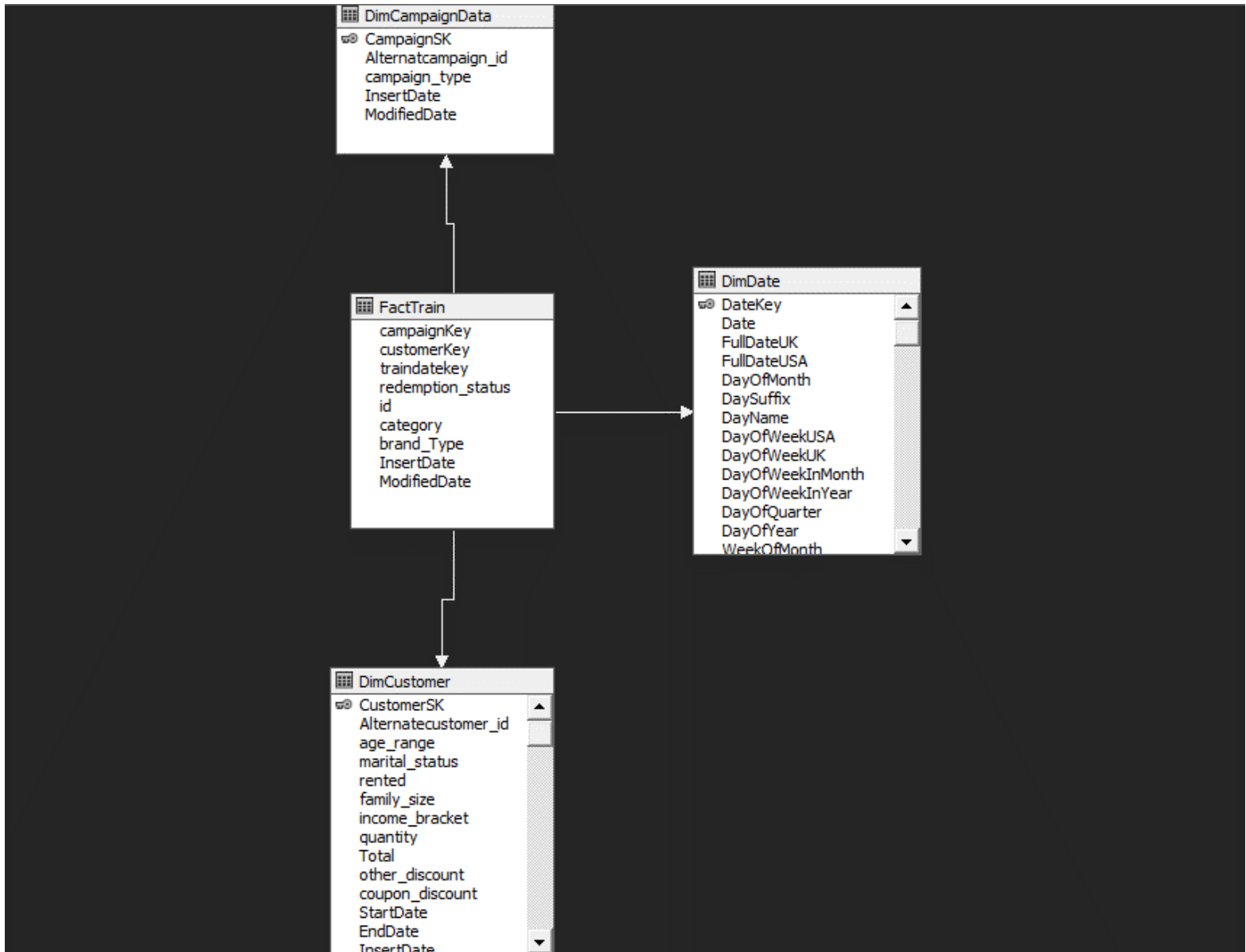
Introduction

XYZ Credit Card company regularly helps its merchants understand their data better and take key business decisions accurately by providing machine learning and analytics consulting. ABC is an established Brick & Mortar retailer that frequently conducts marketing campaigns for its diverse product range. As a merchant of XYZ, they have sought XYZ to assist them in their discount marketing process using the power of machine learning.

Discount marketing and coupon usage are very widely used promotional techniques to attract new customers and to retain & reinforce the loyalty of existing customers. The measurement of a consumer's propensity towards coupon usage and the prediction of redemption behavior are crucial parameters in assessing the effectiveness of a marketing campaign.

ABC promotions are shared across various channels including email, notifications, etc. A number of these campaigns include coupon discounts that are offered for a specific product/range of products. The retailer would like the ability to predict whether customers redeem the coupons received across channels, which will enable the retailer's marketing team to accurately design coupon construct, and develop more precise and targeted marketing strategies.

The newly created data source view is displayed below.



Creating a Data Cube

SSIS Toolbox

This tool window can only be used by a SQL Server Integration Services package document.

DSV_Coupon_Redem..._DW.dsv [Design] Dim Customer.dim [Design] Cubes_Coupon_Rede...ion.cube [Design]

Cube Struct... Dimension Usage Calculations KPIs Actions Partitions Aggregations Perspectives Translations Browser

Measures

- Cubes_Coupon_Redemption
- Fact Train

Dimensions

- Dim Campaign Data
- Dim Date
- Dim Customer

Data Source View

DimDate

- campaignKey
- customerKey
- transdateKey
- redemption_status
- id
- category
- brand_Type
- InsertDate
- ModifiedDate

FactTrain

- campaignKey
- customerKey
- transdateKey
- redemption_status
- id
- category
- brand_Type
- InsertDate
- ModifiedDate

DimCustomer

- customerSK
- Alternatecustomer_id
- age_range
- marital_status
- named
- family_size
- income_bracket
- quantity
- Total
- other_discount
- coupon_discount
- StartDate
- EndDate

DimCampaignData

- campaignSK
- Alternatecampaign_id
- campaign_type
- InsertDate
- ModifiedDate

Solution Explorer

Search Solution Explorer (Ctrl+)

- Solution 'Coupon_Redemption' (1 of 1 project)
- Coupon_Redemption
- Data Sources
- DS_Coupon_Redemption_DW.ds
- Data Source Views
- DSV_Coupon_Redemption_DW.dsv
- Cubes
- Cubes_Coupon_Redemption.cube
- Dimensions
- Dim Campaign Data.dim
- Dim Date.dim
- Dim Customer.dim
- Mining Structures
- Roles
- Role role
- Assemblies

Properties

Cubes_Coupon_Redemption Cube

- ErrorConfiguration (default)
- EstimatedRows 0
- Language
- ProcessingMode Regular
- ProcessingPriority 0
- Source DSV_Coupon_Redemption_DV
- Visible True
- Basic
- Description
- ID Cubes_Coupon_Redemption

Output

Dimensions

- Cubes_Coupon_Redemption
- Dim Campaign Data
- Dim Date
- Dim Customer

Dimension tables

DIMENSIONS

3 dimensions are created for our requirements.

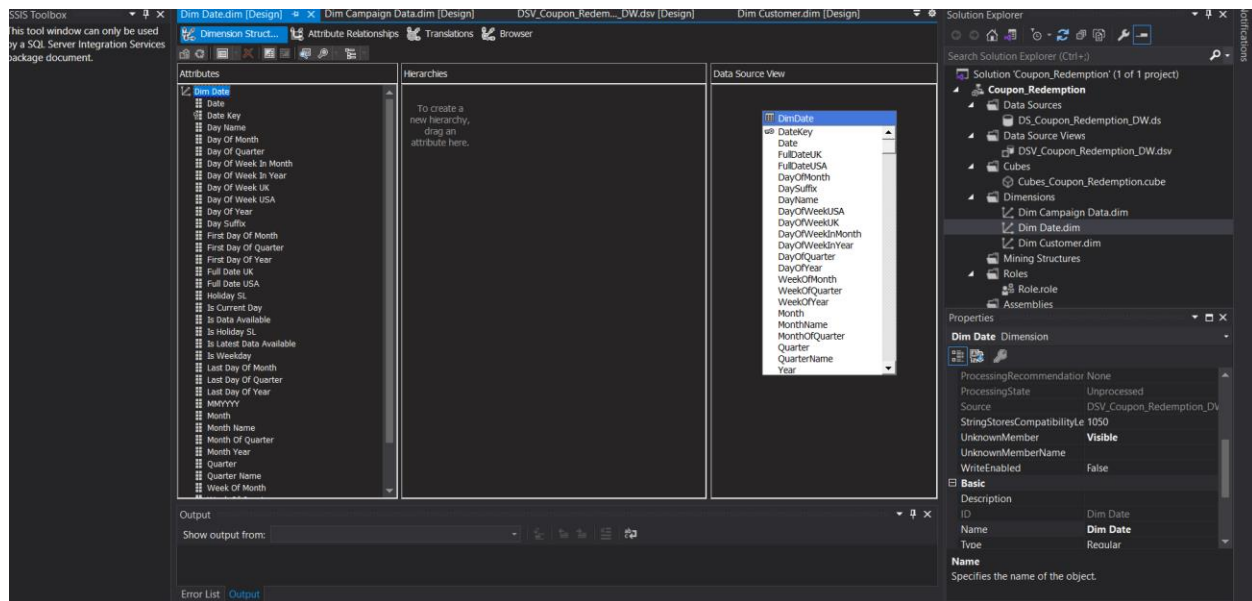
DimCampaignData, DimCustomer, and DimDate.

DimCampaignData

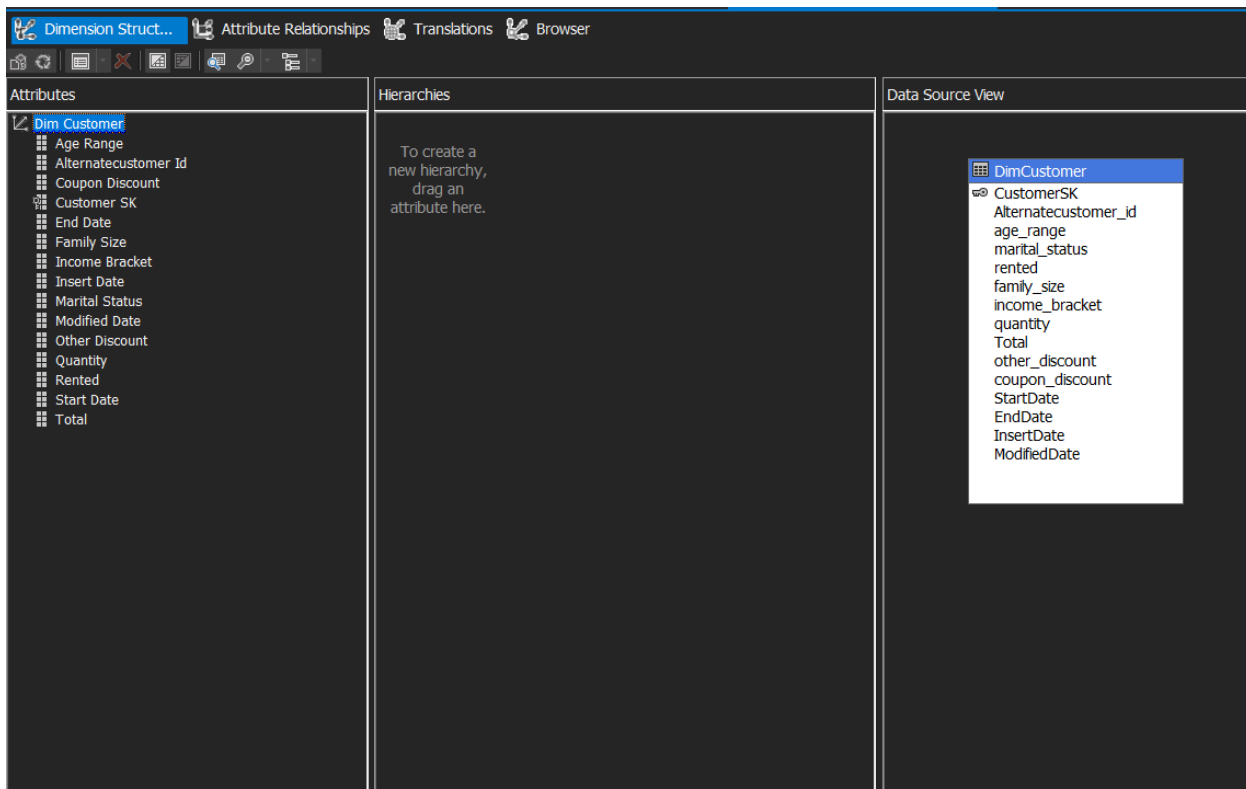
Attributes	Hierarchies	Data Source View
<div><div>Dim Campaign Data</div><div><div>Alternatcampaign Id</div><div>Campaign SK</div><div>Campaign Type</div><div>Insert Date</div><div>Modified Date</div></div></div>	<div><div>To create a new hierarchy, drag an attribute here.</div></div>	<div><div>DimCampaignData</div><div><div>CampaignSK</div><div>Alternatcampaign_id</div><div>campaign_type</div><div>InsertDate</div><div>ModifiedDate</div></div></div>

Dim campaign data

DimDate



DimCustomer



KPI

The screenshot displays the SSDT interface for configuring a KPI. The main window shows the 'KPI' configuration for 'KPI Remaining redumtion'. The configuration includes the following fields:

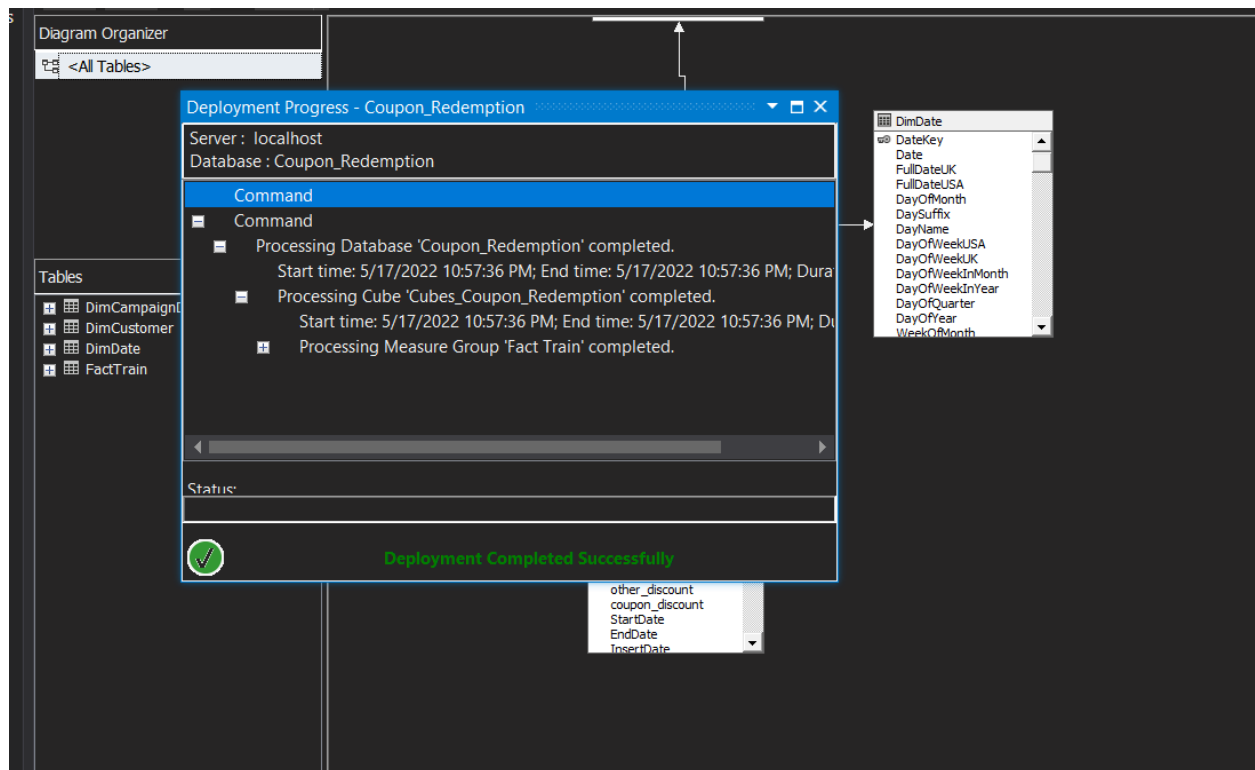
- Name:** KPI Remaining redumtion
- Associated measure group:** <All>
- Value Expression:** [Measures].[Redemption Status]
- Goal Expression:** [Measures].[Redemption Status] = 0
- Status:** Status indicator: Gauge; Status expression: (empty)
- Trend:** (empty)

The Properties window on the right shows the KPI details:

KPI Remaining redumtion Kpi	
Advanced	
DisplayFolder	
Basic	
Description	
ID	KPI
Name	KPI Remaining redumtion
Misc	
AssociatedMeasureGroupID	
CurrentTimeMember	
Goal	[Measures].[Redemption Status]
ParentKpiID	
Status	

The Properties window also includes a **Name** section with the text: Specifies the name of the object.

KPI is added to identify redemption status

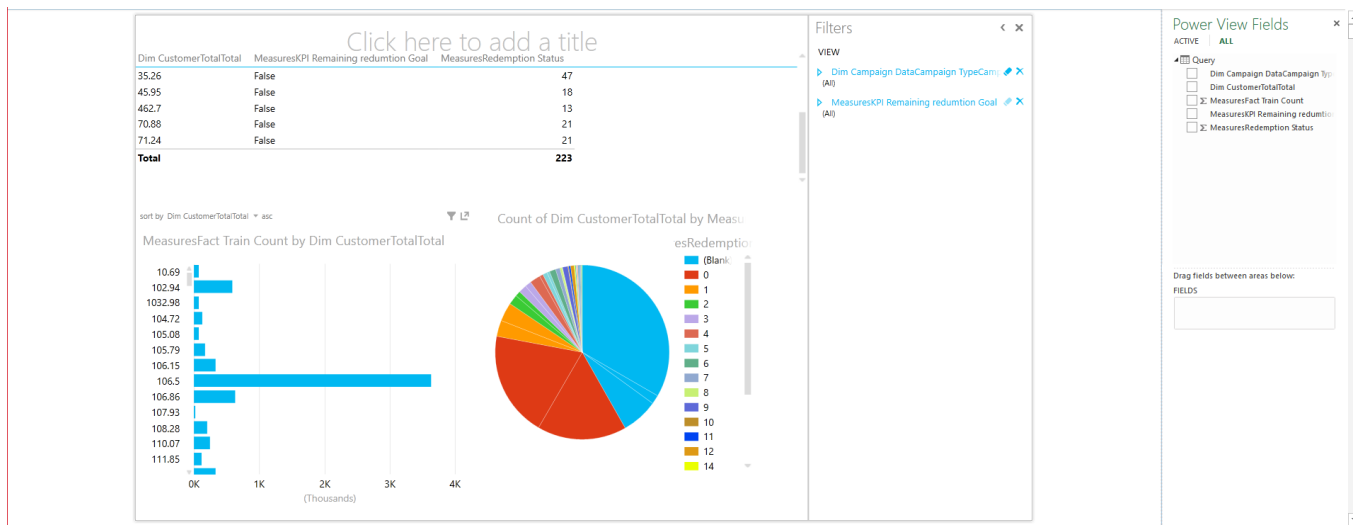


Deployment success

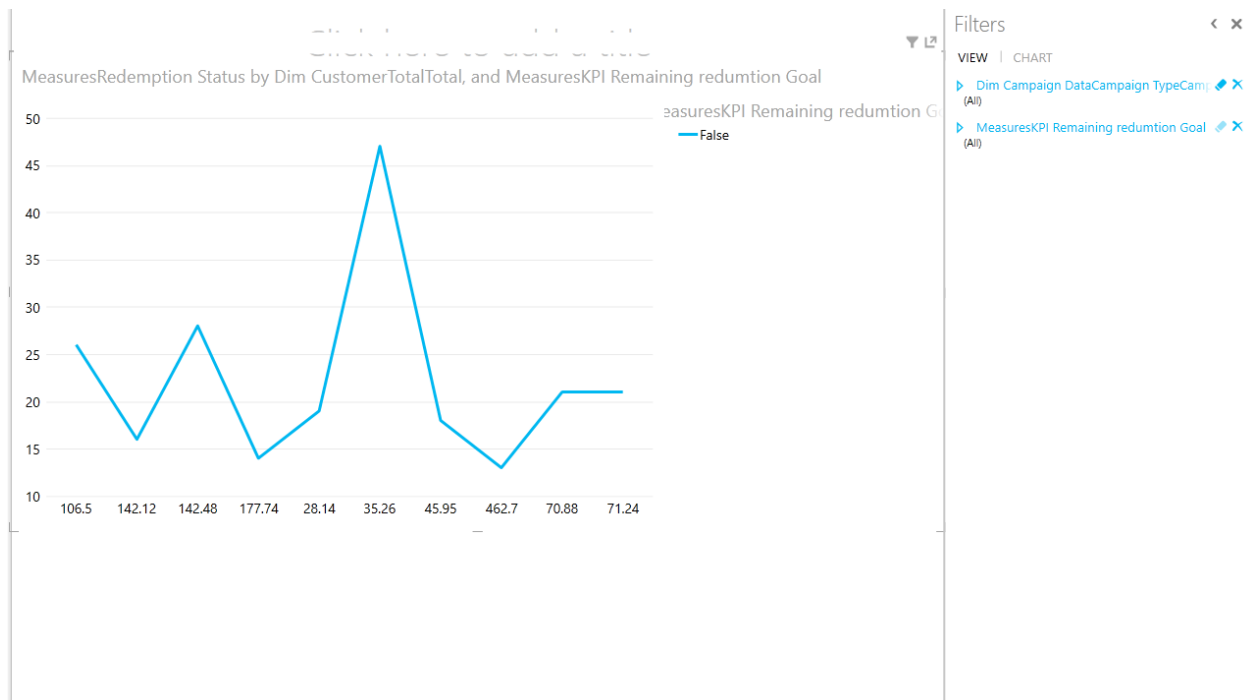
Excel Report

Row Labels	Sum of MeasuresRedemption Status	Sum of MeasuresFact Train Count	Total Sum of MeasuresRedemption Status	Total Sum of MeasuresFact Train Count
10.69	1.00	0.00	55.00	14.00
102.94	4.00	0.00	411.00	172.00
1032.98	0.00	0.00	39.00	26.00
104.72	0.00	1.00	50.00	69.00
105.08	0.00	0.00	46.00	27.00
105.79	2.00	1.00	72.00	99.00
106.15	0.00	0.00	218.00	113.00
106.5	23.00	3.00	2,509.00	1,111.00
106.86	3.00	0.00	417.00	208.00
107.93	0.00	0.00	0.00	13.00
108.28	3.00	0.00	188.00	8.00
110.07	9.00	0.00	195.00	44.00
111.85	0.00	0.00	115.00	0.00
1122.03	0.00	0.00	261.00	62.00
113.63	0.00	0.00	143.00	46.00
117.19	0.00	0.00	144.00	27.00
118.61	0.00	0.00	11.00	0.00
118.97	0.00	0.00	63.00	8.00
12.11	0.00	0.00	47.00	19.00
120.4	0.00	0.00	83.00	51.00
1214.64	1.00	0.00	192.00	0.00
124.31	3.00	2.00	605.00	252.00
124.67	9.00	0.00	416.00	164.00

Slice & Dice



Drill down



Click here to add a title

MeasuresKPI Remaining...

True

Dim CustomerTotalTotal	uresFact Train Count	Count of Dim Campaign DataCampaign TypeCampaign Type	MeasuresRedemption Status	MeasuresFact Tre
106.5	3620	2		
142.12	1901	2		
142.48	2366	2		
177.74	639	2		
28.14	971	2		
35.26	4166	2		
45.95	1446	2		
462.7	665	2		
70.88	2211	2		
71.24	3130	2		
Total	21115	20		

Filters

VIEW

MATRIX

Dim Campaign DataCampaign TypeCamp

(All)

MeasuresKPI Remaining redumtion Goal

(All)