

KPI definitions

KPI definitions amend insurances' Multidimensional Project's Cube definition (see KPIs tab).

Increasing the number of new customers by 3% per year.

Name:

Customer Increase

Value expression:

[Measures].[Number of customers]

Goal expression:

(KPIValue("NumberOfCustomers"), ParallelPeriod ([ref_Signing_Date_ID].[Hierarchy].[Year], 1, [ref_Signing_Date_ID].[Hierarchy].CurrentMember)) * 1.03

Status expression:

If (KPIValue("Number of customers") > KPIGoal("Number of customers"), 1, -1)

Trend expression:

If (KPIValue("Number of customers") > (KPIValue("Number of customers"), ParallelPeriod ([ref Signing Date ID].[Date Hierarchy].[Year], 1, [ref Signing Date ID].[Date Hierarchy].CurrentMember)), 1, -1)

Keeping customer's satisfaction above 80% percent level, checked monthly.

Name:

Satisfaction

Value expression:

[Measures].[AvgSatisfaction]

Goal expression:

(KPIValue("AvgSatisfaction") ParallelPeriod ([ref Submission Date ID].[Date Hierarchy].[Month], 1, [ref Submission Date ID].[Date Hierarchy].CurrentMember)), 1, -1)

Status expression:

If (KPIValue("AvgSatisfaction") > 8, 1, -1)

Trend expression:

If (KPIValue("AvgSatisfaction") > 8, 1, -1)

Analytical problems queries

MDX queries can be executed using Microsoft SQL Server Management Studio tool by connecting to Analytical Server with Insurance Company data warehouse deployed and creating a new MDX query (Names of cube, measures and dimensions can vary depending on implementation of the cube).

1. Find and compare the average claim lifetime among all branches - from submitting till final decision.

Measure: Average claim lifetime,

Dimension: Branch (dimension attributes: City):

```
SELECT NON EMPTY { [Measures].[AvgClaimLifetime] } ON COLUMNS,  
[Insurance Agent].[City].Members ON ROWS  
FROM [Insurance DW]
```

2. In which month did the most accidents occur?

Measure: Number of claims processed

Dimension: EventDate (dimension attributes: month)

Dimension: Junk (dimension attributes: Status)

```
SELECT { [Measures].[Claim Processing Count] } ON COLUMNS,  
TOPCOUNT ( [Ref Event - Ref Event Date].[Month].Children, 1, [Measures].[Claim  
Processing Count] ) ON ROWS  
FROM [Insurance DW]
```

3. What is the processing time in relation to the amount of compensation?

Measure: Average claim Lifetime

Dimension: Junk (dimension attributes: Compensation_category)

```
WITH MEMBER [Measures].[RoundedLifetimeAvg] AS  
'Round([Measures].[AvgClaimLifetime])'  
SELECT { [Measures].[RoundedLifetimeAvg] } ON COLUMNS,  
{ EXCEPT ({[Junk].[Compensation Category].Children}, {[Junk].[Compensation  
Category].[All].UNKNOWNMEMBER}) } ON ROWS  
FROM [Insurance DW]
```

4. Find the worker who handled the most and who the least claims in each month.
Measure: Number of Claims processed
Dimension: Insurance_Agent (dimension attributes: Name_and_Surname)

```
WITH MEMBER [Measures].[Claim Count] AS
  If( IsEmpty( [Measures].[Claim Processing Count] ), 0, [Measures].[Claim Processing
Count])
SELECT
  { [Measures].[Claim Count] } ON COLUMNS,
  { ([Ref Submission Date].[Month].Children, BOTTOMCOUNT ( EXCEPT ({[Insurance
Agent].[Name And Surname].Children}, {[Insurance Agent].[Name And
Surname].[All].UNKNOWNMEMBER}), 1, [Measures].[Claim Processing Count])),
([Ref Submission Date].[Month].Children, TOPCOUNT ( EXCEPT ({[Insurance
Agent].[Name And Surname].Children}, {[Insurance Agent].[Name And
Surname].[All].UNKNOWNMEMBER}), 1, [Measures].[Claim Processing Count]))
} ON ROWS
FROM [Insurance DW]
```

5. How many claims were submitted last year in comparison to the previous year
(increase/decrease)?
Measure: Number of Claims processed
Dimension: Date (dimension attributes: year)

```
SELECT
  { [Measures].[Claim Processing Count] } ON COLUMNS,
  { ( [Ref Submission Date].[Year].[2023] ),
  ( [Ref Submission Date].[Year].[2022] ) } ON ROWS
FROM [Insurance DW]
```

6. Find workers whose claim processing was rated above average (in terms of
customer satisfaction).
Measure: Average survey rating
Dimension: Insurance_Agent (dimension attributes: Name_and_surname)

```
SELECT { [Measures].[Survey AVG L] } ON COLUMNS,
  Filter([Insurance Agent].[Name And Surname].[Name And Surname].ALLMEMBERS,
[Measures].[Survey AVG L] > [Measures].[AvgSatisfaction] ) ON ROWS FROM
[Insurance DW]
```

7. What was the average processing time for the highest rated claims?

Measure: Average claim lifetime

Dimension: Junk (dimension attributes: Survey_rating_category)

```
SELECT NON EMPTY { [Measures].[Average_claim_lifetime] } ON  
COLUMNS FROM ( SELECT ( { [Junk].[Survey Rating Category].&[Perfect] }  
) ON COLUMNS FROM [Insurance v2]) WHERE ( [Junk].[Survey Rating  
Category].&[Perfect] ) CELL PROPERTIES VALUE, BACK_COLOR,  
FORE_COLOR, FORMATTED_VALUE, FORMAT_STRING, FONT_NAME,  
FONT_SIZE, FONT_FLAGS
```

8. What was the average compensation for claims rated with a high satisfaction level?

Measure: Average amount paid out

Dimension: Junk (dimension attributes: Survey_rating_category)

```
SELECT NON EMPTY { [Measures].[Average_amount_paid_out] } ON  
COLUMNS FROM [Insurance v2] CELL PROPERTIES VALUE,  
BACK_COLOR, FORE_COLOR, FORMATTED_VALUE, FORMAT_STRING,  
FONT_NAME, FONT_SIZE, FONT_FLAGS
```

9. Compare customer satisfaction levels among different cities.

Measure: Average survey rating

Dimension: Branch (dimension attributes: City)

```
SELECT [Measures].[Amount_of_money_saved] ON COLUMNS,  
[Insurance Agent].[City].children ON ROWS FROM [Insurance v2]
```

10. Is there a relation between customers' perception of ease of filling the claim and his/hers satisfaction?

Measure: Average ease of filling the claim

Dimension: Junk (dimension attribute: Survey_rating_category)

```
WITH  
SET [SurveyRatingCategories] AS [Junk].[Survey Rating Category].Members  
SELECT  
[SurveyRatingCategories] ON COLUMNS,  
{[Measures].[Average_ease_of_filling_the_claim]} ON ROWS  
FROM  
[Insurance v2]  
|
```