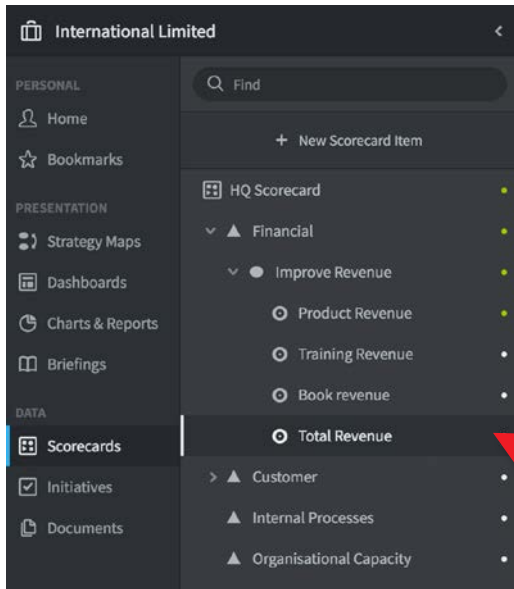




Calculated KPIs/Measures - 1

The application has a 'calculation' function for any KPIs/measures you create in your scorecard. Often you may find you need to calculate an actual value and/or the red/amber/green threshold values. A simple example might be summing up the actual values of several revenue streams to provide a total.

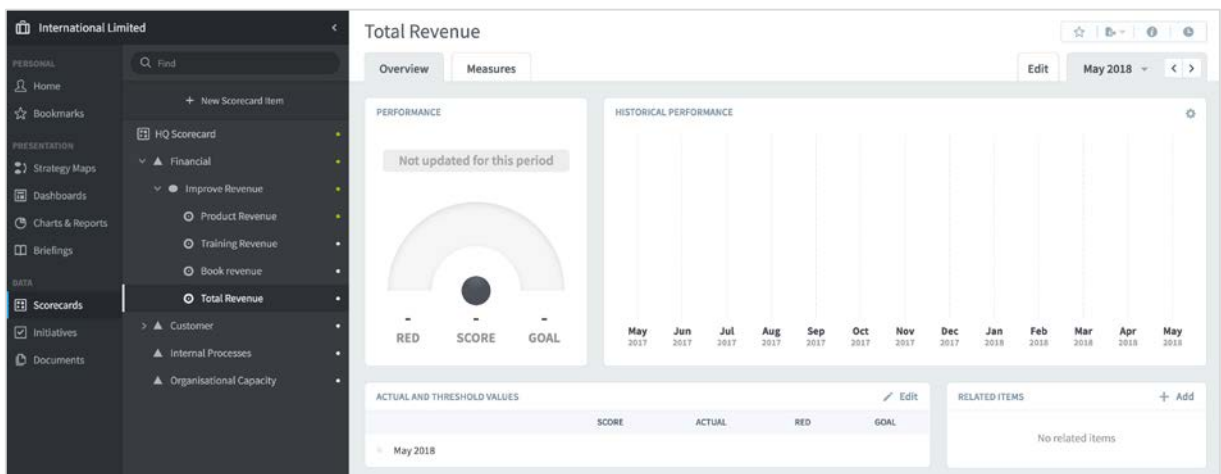


For the purpose of this guide we will sum the Actual Values and Thresholds of three separate revenue measures in a fourth measure called Total Revenue.

First you need to create the measure called Total Revenue. Go to the scorecard where you want the measure to appear and create it. (**Do not** give it any Threshold Values).

(If you need help creating a Measure go to the **Creating Measures** guide)

Click on the Overview tab. The result should look something like this:





Calculated KPIs/Measures - 2

Click on the **Edit** tab to open the Measure. Configure the details in the top two panels as you normally would when creating a Measure.

Total Revenue

Overview Measures Edit December 2016

Name: Total Revenue Type: Measure

Description: This measure sums:
- Product Revenue
- Training Revenue
- Book Revenue Weight: 25%

MEASURE DETAILS

Scoring Type: Goal/Red Flag Calendar: Monthly Data Type: Currency

Aggregation Type: Sum Decimal Precision: Default Currency: Default

SERIES

Actual Value: Manual Red Flag: Manual Goal: Manual

SERIES

Actual Value

- Manual
- Manual
- Calculated**

In the **Series Detail** panel click on Actual Value and select **Calculated** from the from the drop-down list.

Do the same for Red Flag and Goal. The result should look like this:

SERIES

Actual Value: Calculated Red Flag: Calculated Goal: Calculated

Missing values make equation blank Missing values make equation blank Missing values make equation blank

Set Equation Set Equation Set Equation

Click on Set Equation under Actual Value and the equation dialogue will appear



Calculated KPIs/Measures - 3

Set Equation

Actual Value *allowed input: + - * / ()*

1

2 Type Measure ▾

3 Measure Select a Measure

4 Series Actual Value ▾

5 Period Current ▾

6 Add

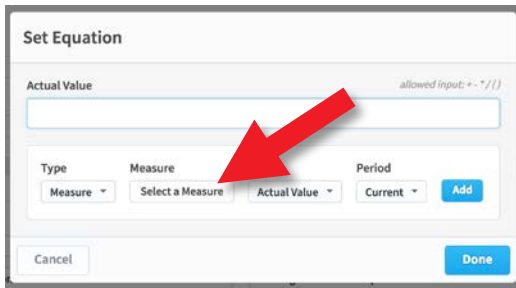
Cancel Done

The box and drop down menus have the following functions:

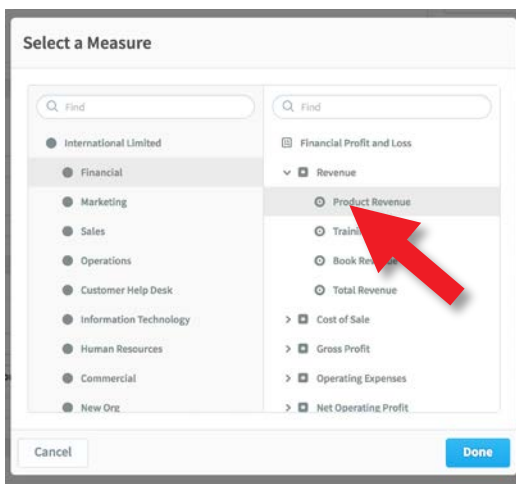
1. **The Equation Box** - marked as Actual in this example. This is where the calculation takes place. Think of this as being like a spreadsheet cell. Many of the operands and functions you can use in a spreadsheet can be used here. A full list of operands and functions is at the end of this document.
2. **Type** - You can use; Measures, Scores, Initiatives and To Dates in your calculations. Measures and Scores are fairly obvious, for more information on Initiatives and To Dates go to the end of this document.
3. **Measure** - This will change depending on which Type you select.
4. **Series** - When you select Measure this will give you the option to select the Actual Value, Goal or Red Flag.
5. **Period** - You can select Current or an Earlier or Later period.
6. **Add** - You need to click Add to add the measure to the Equation Box.



Calculated KPIs/Measures - 4



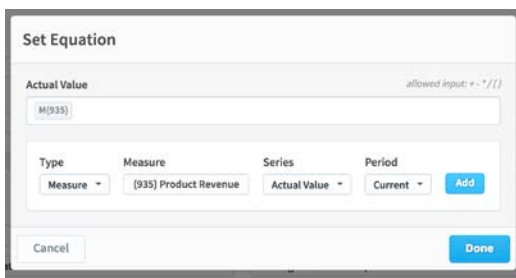
Step 1. Click on **Select Measure** in the Set Equation dialogue box.



Step 2. The Organization tree will appear. Select the Scorecard and Measure you want to include in the calculation.

In this example we have selected Product Revenue.

Click the blue **Done** button.



Step 3. The measure appears in the Set Equation dialogue.

Click the blue Add button to add it to the Equation Box (under Actual Value)

The unique identifier appears in the box .



Step 4. Place the cursor next to the unique identifier in the equation box (it will appear inside the unique identifier).

Hit the + key. The + sign will appear next to the unique identifier.



Calculated KPIs/Measures - 5

Set Equation

Actual Value allowed input: + - * / ()

M(935)

Type	Measure	Series	Period
Measure	(935) Product Revenue	Actual Value	Current

Cancel Done

Step 5. Click on the **Measure** drop down box again and the Select a Measure dialogue box will appear again.

(935) Product Revenue

Find

- International Limited
 - Financial
 - Marketing
 - Sales
 - Operations
 - Customer Help Desk
 - Information Technology
 - Human Resources
 - Commercial
 - New Org.

Financial Profit and Loss

- Revenue
 - Product Revenue
 - Training Revenue
 - Book Revenue
 - Total Revenue
- Cost of Sale
- Gross Profit
- Operating Expenses
- Net Operating Profit

Cancel Done

Step 6. Select the next measure you need for the equation. In this example we have selected Training Revenue.

(Note: ignore the title i.e. (935) Product Revenue, it is there because we selected that measure previously.

Click the blue **Done** button.

Set Equation

Actual Value allowed input: + - * / ()

M(935) + M(936)

Type	Measure	Series	Period
Measure	(936) Training Revenue	Actual Value	Current

Cancel Done

Step 7. The new measure appears in the Set Equation dialogue under Measure.

Click the blue Add button to add it to the Equation.

Repeat Steps 1-7

Repeat Steps 1-7 to complete your calculation.

Actual Value

M(935) + M(936) + M(937)

Type	Measure
Measure	(937) Book Revenue

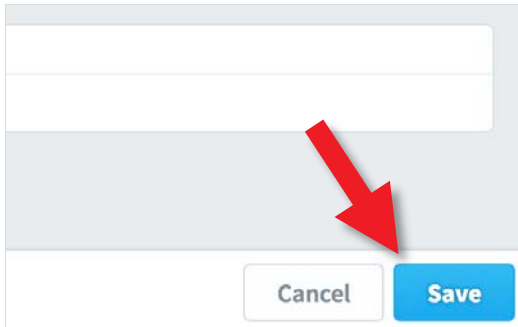
In our example, the final equation looks like this.

Click the blue **Done** button.

VERY IMPORTANT - Click **Save** in the Edit panel to save the calculation.

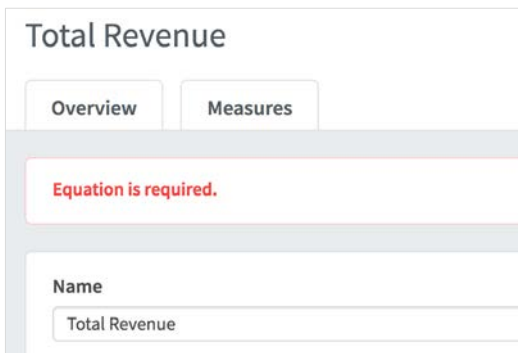


Calculated KPIs/Measures - 6



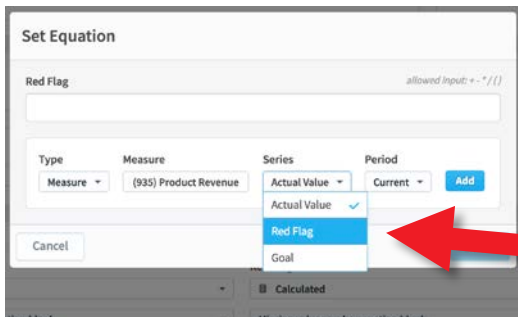
If you did not catch it on the previous page:

VERY IMPORTANT: Click **Save** when you return to the edit screen to save the calculation..



After clicking Save, you will see a red warning appear at the top of the screen saying: Equation is required.

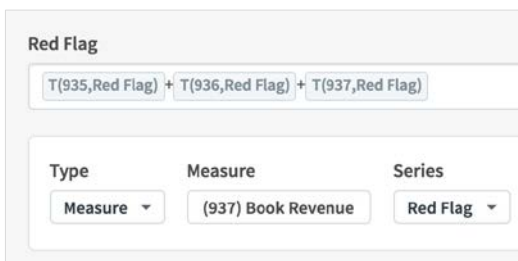
This is because, in this example, you need to add an equation for the Red Flag and the Goal as well.



Red Flag and Goal Equations

Repeat Steps 1-7 for the Red Flag and Goal.

During Step 3 select **Red Flag** or **Goal** from the drop down called **Series**.



In our example, the Red Flag equation will look like this

VERY IMPORTANT: Click **Save** when you return to the edit screen to save the calculation. Then click Overview.



Calculated KPIs/Measures - 7

Top Tip - To check that your equations are correct you can look at all of them in the same place by clicking on your metric and then clicking the information button at the top right of the screen:



In our example, the result looks like this:

Measure Info

BASIC INFO

Name
Total Revenue

Description
This measure sums:
- Product Revenue
- Training Revenue
- Book Revenue

DETAILS

Type	Weight	Scoring Type	Calendar	Data Type
Measure	25%	Goal/Red Flag	Monthly	Currency

Aggregation Type Currency
Sum United Kingdom Pound

SERIES

Actual Value
Update Type: Calculated
Missing values make equation blank
[M\(935\)+M\(936\)+M\(937\)](#)

Red Flag
Update Type: Calculated
Missing values make equation blank
[T\(935,Red Flag\)+T\(936,Red Flag\)+T\(937,Red Flag\)](#)

Goal
Update Type: Calculated
Missing values make equation blank
[T\(935,Goal\) + T\(936,Goal\)+T\(937,Goal\)](#)

Close



Operands

Operand	Symbol
Addition, Subtraction	+, -
Multiplication	*
Division	/
Not Equal, Equal	!=, ==
Assignment	=
Power	^
Boolean Not	!
Unary Plus, Unary Minus	+x, -x
Dot Product, Cross Product	., ^^
Modulus	%
Less Than, Greater Than	<, >
Less or Equal, More or Equal	<=, >=
Boolean &	&&
Boolean Or	

IMPORTANT NOTE: When using the operands below, you may need to use a double = (e.g. ==) when checking for an 'equal' value. A distinction has to be made between 'assigning' a value (=) and comparing a value (==).



Most Common Formulas

Most Common Formulas	Format
Sum	sum(x,y,...)
Average	avg(x1,x2,x3,...)
If	if(cond, truevalue, falsevalue)
Round	round(x), round(x, p)

Year to Date	Format
Year to Date (YTD)	TD(calendar name, metric-id, score type, aggregation type)
Where: <ul style="list-style-type: none">• calendar name - is the name of any annual calendar• metric-id - is the unique identifier for the Measure• scoring type - is the type of gauge used e.g Goal Red Flag• aggregation type - is either Average or Sum	
Conditions of use: <ul style="list-style-type: none">• It only works on Number or Currency data types (not percentage)• It only works with Aggregation Type = Sum• It is usually used with an Unscored scoring type metric• If you use a scored type e.g. RAG, then you will need to calculate the thresholds as well• It is based on a calendar type, if you need a custom calendar, you will have to define this in Administration	

IMPORTANT NOTE: In Version 3 of the application the Year to Date calculation can be constructed using a point-and-click drop down set of menu items. The resulting format is the same, but there is no need to construct it by hand.



Initiative Functions

IMPORTANT NOTE: In Version 3 of the application the Initiative Values calculation can be constructed using a point-and-click drop down set of menu items. The resulting format is the same, but there is no need to construct it by hand.

Initiative Values	Format
Referencing an Initiative value	I(acronym,nnn)
Where:	
<ul style="list-style-type: none">• 'acronym' is one of the acronyms in the list below• nnn is the unique identifier for the Initiative	
Acronyms:	
<ul style="list-style-type: none">• BSTD – Budget Spent to Date• BR – Budget Remaining• TB – Total Budget• PTB – Projected Total Budget• PBV – Projected Budget Variance• PBVP – Projected Budget Variance Percentage• PC – Percent Complete• PTE – % Time Elapsed• PSV – Projected Schedule Variance	

A real example would look like this:

- I(TB,1001)

where “TB” is the acronym for Total Budget and 1001 is the Initiative ID value



Functions

Other Common Functions	Format
Str - convert number to a string	str(x)
Absolute Value / Magnitude	abs(x)
Random Number (between 0 and 1)	rand()
Modulus	mod(x,y) = x % y
Square Root	sqrt(x)
Binomial coefficients	binom(n, i)
Signum	signum(x)

Rounding Functions	Format
Round	round(x), round(x, p)
Floor	floor(x)
Ceiling	ceil(x)

Statistical Functions	Format
Average	avg(x1,x2,x3,...)
Minimum	min(x1,x2,x3,...)
Maximum	max(x1,x2,x3,...)



Functions

Trigonometric Functions	Format
Sine	$\sin(x)$
Cosine	$\cos(x)$
Tangent	$\tan(x)$
Arc Sine	$\text{asin}(x)$
Arc Cosine	$\text{acos}(x)$
Arc Tangent	$\text{atan}(x)$
Secant	$\text{sec}(x)$
Cosecant	$\text{cosec}(x)$
Co-tangent	$\text{cot}(x)$
Hyperbolic Sine	$\sinh(x)$
Hyperbolic Cosine	$\cosh(x)$
Hyperbolic Tangent	$\tanh(x)$
Inverse Hyperbolic Sine	$\text{asinh}(x)$
Inverse Hyperbolic Cosine	$\text{acosh}(x)$
Inverse Hyperbolic Tangent	$\text{atanh}(x)$



Functions

Log and Exponential	Format
Natural Logarithm	$\ln(x)$
Logarithm base 10	$\log(x)$
Logarithm base 2	$\lg(x)$
Exponential (e^x)	$\exp(x)$
Power	$\text{pow}(x)$