TARGIT
courage to act

TARGIT Fundamentals

Level: Beginner

TARGIT Decision Suite 2019 – document version 1.0 US

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TARGIT
courage to act

TARGIT A/S

Gasværksvej 24, 2nd Floor

DK-9000 Aalborg

Denmark

Phone: (+45) 9623 1900

E-mail: info@targit.com

Internet: http://www.targit.com

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Introduction

This course is targeted at users of TARGIT Decision Suite with little or no experience in the use of the TARGIT Windows Designer client.

The course is suitable for employees in companies that have just acquired TARGIT Decision Suite, or for new employees in companies that already have a running TARGIT solution.

This course teaches the essentials about the daily use of the product, how to design dashboards and reports and even goes a step further to become the right starting point for further training.

Concepts

A short description of the most central terms will help you to understand the elements you will across when working with the TARGIT Decision Suite.

Business Intelligence

Business Intelligence, basically, is a matter of providing insight into an organization's business data in an easy to overview manner, thereby enabling you to make the right decisions and lay down the right strategies during a hectic workday.

Data Warehouse

A Business Intelligence solution is typically based upon a Data Warehouse, which is a database that collects and refines data from one or more source systems. Examples of source systems could be MS Dynamics NAV, Axapta or similar ERP systems. Often, this Data Warehouse will come in relational versions as well as a multidimensional version.

Cubes

Cubes are the way to organize data in a multidimensional Data Warehouse. In addition to a well-defined data structure, the cubes also ensure that end-user requests for data is processed with optimal performance. The cubes are visible to the end-users, and each cube will typically contain data for one well-defined business area like Sales, Finance, Inventory etc.

Measures

Generally, you define a cube by defining the Measures and the Dimensions it should be built upon. The measures are the factual data upon which you want to make analyses and reports. Synonyms for Measures might be KPIs or "the interesting numbers". E.g. in Sales cube you would see measures like Revenue, Costs, Profits, Budget etc.

Dimensions

You use Dimensions to categorize or to view your data from specific angles or from specific perspectives. E.g. in a Sales cube you would have dimensions like Products, Customers, Salespersons, Time etc. You also use dimensions for setting up criteria or filters on the data your examining, e.g. for seeing data of a specific Product Group or across a specific time span.

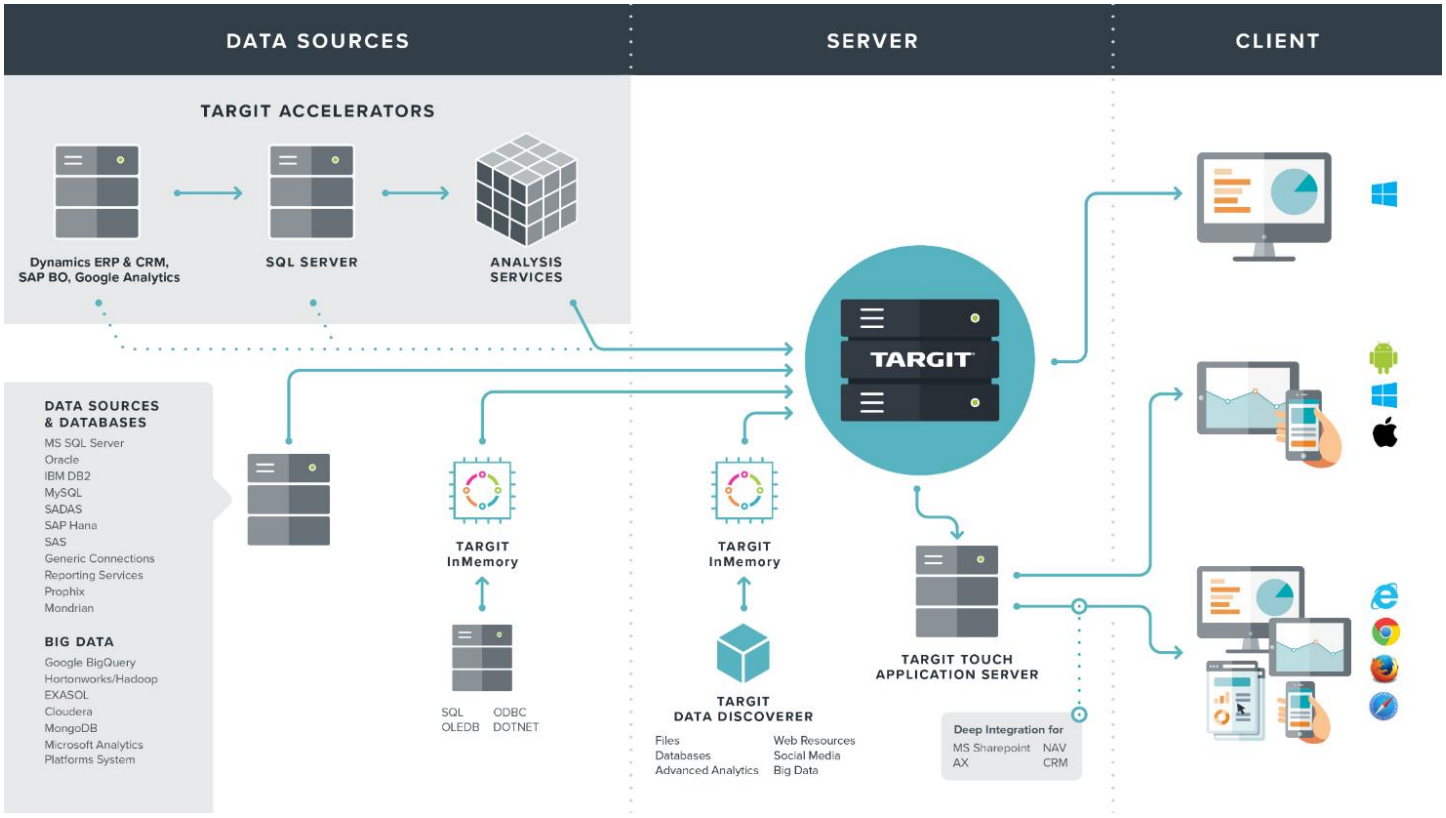
Overview Data Flow

Before we start using the TARGIT Decision Suite, it can be useful to understand the relationship between a Business Intelligence system like TARGIT and a company's source data.

A company source system, for example an ERP system such as Navision or Axapta, is often a central and indispensable system in the daily business processes. Such a system is usually designed for efficient handling and entry of daily transactions. In turn, these systems may be very deficient in terms of being able to query data in an easy and manageable way.

This is where Business Intelligence systems such as TARGIT Decision Suite has its place.

Before the data from source systems are ready to be presented to end users, they will typically go through a process as described in the illustration below.

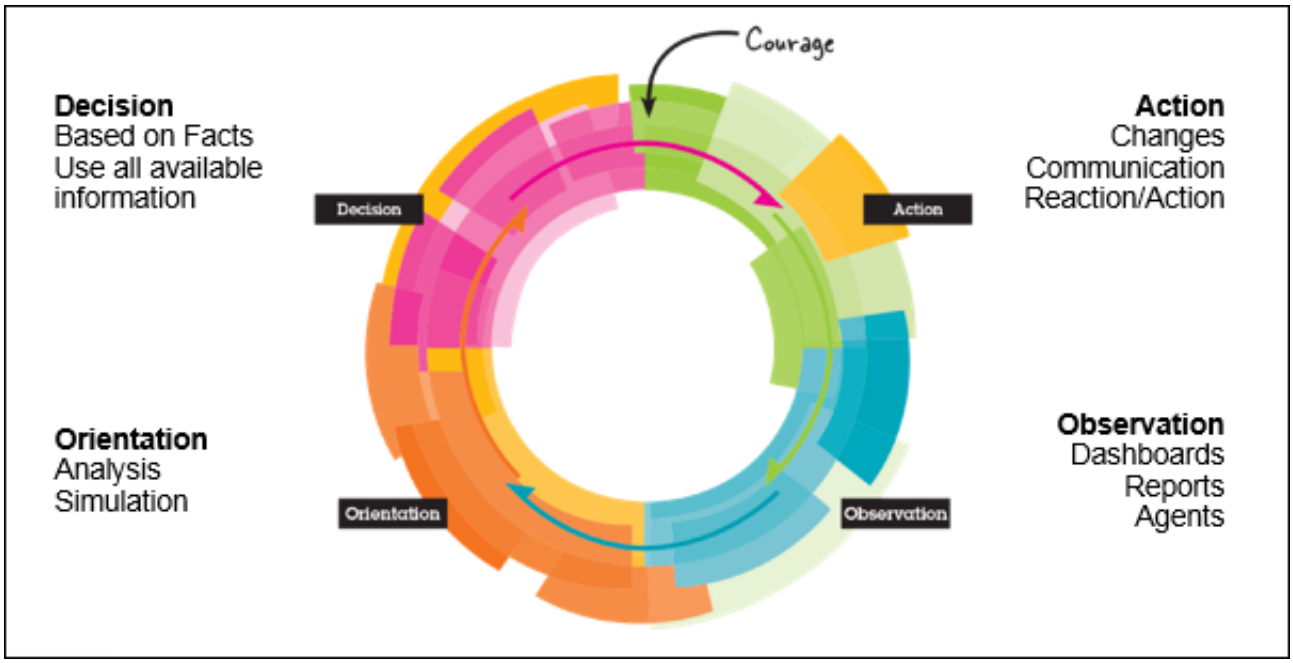


The process includes the following:

- Data is "born" in one or more **source systems**, for example. Navision or Axapta.
- Data from these source systems are consolidated into a single **Data Warehouse**.
    - The purpose, in addition to pool data across multiple source systems, is to "cleanse" data and to ensure that they generally are in a format that makes them suitable for analysis and reporting purposes.
- From the Data Warehouse, data is then organized into one or more **Cubes**.
    - In the cube you define how the source data must be read - what should be perceived as measures and dimensions.
    - A cube can also be perceived as a database - though it is a database that is optimized to provide rapid responses when querying for data analyses or reports.
- Data in Data Warehouse and cubes are **refreshed** with new data from source systems at regular intervals - typically once a day.
    - An analysis or a report will thus, in principle, show fresh data when it is reopened in the morning.
    - Refreshing data with shorter intervals may also occur, for example once an hour, which will refresh analyses and reports with the same interval.
- **The TARGIT server** is the central unit in a TARGIT installation.
    - The TARGIT server handles all communication between the cubes and the TARGIT clients.
    - It is also with the TARGIT server that you can centrally manage user rights and their access to various areas of data.
- **The TARGIT client** is the end user's experience of the Business Intelligence system.
    - Through the TARGIT clients users can work with existing analyses and reports, or even create new ones.
    - The creation of a new analyses or reports is based on the available source data – according to their definitions in the cubes.

The Decision Circle

The development of TARGIT Decision Suite is based on the fundamental idea that the components of the TARGIT Decision Suite together shall cover all elements of the Decision Circle: From incident through Observation, Orientation, Decision and Action.



Lesson 1: Fundamentals

This very first lesson is designed to give the end-user – an end-user who may never have seen TARGIT before – an experience of what it would be like to work with the TARGIT client for its most fundamental purpose:

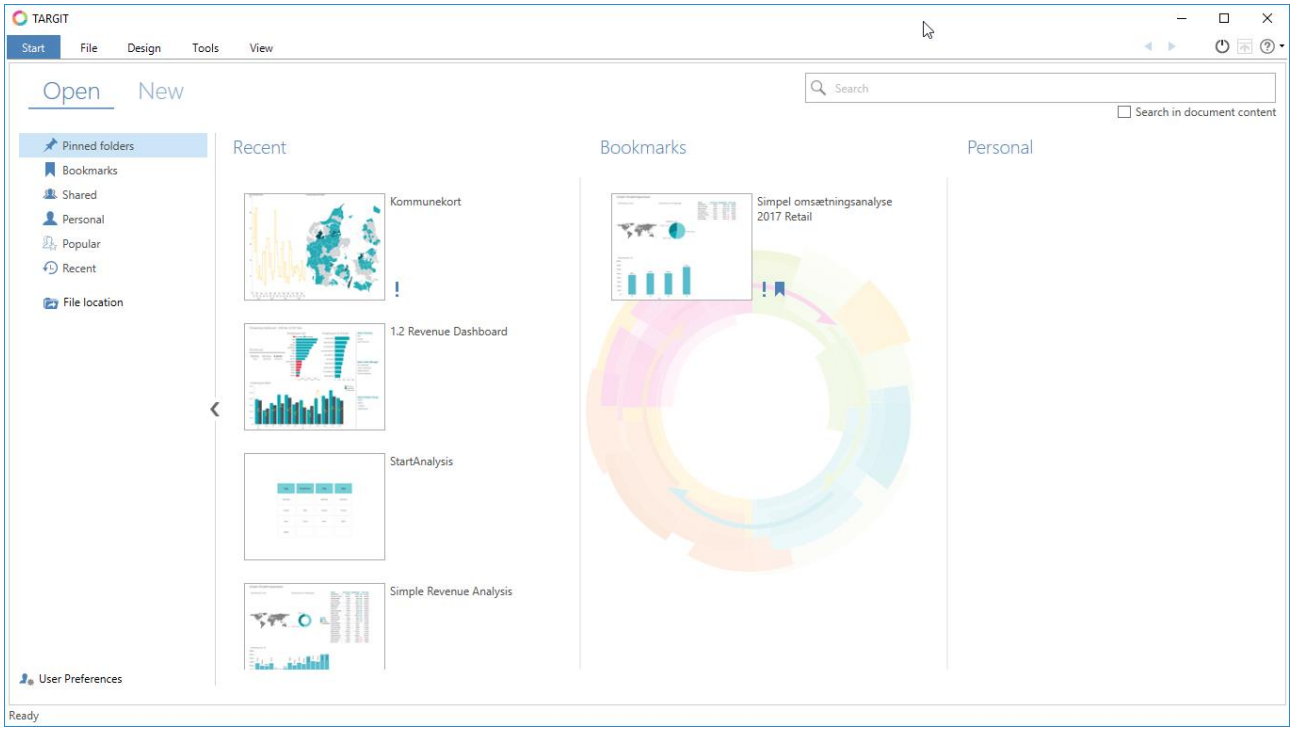
To give an overview of business critical data as easy as possible.

At the same time, the end-user must be able to effectively filter data and drill down through data within the end-user's scope of interest.

In the upcoming lessons, you will learn some of the more advanced features of the TARGIT client, including how to build analyses yourself.

User Interface

When you open the TARGIT client for the first time, it may look like this:

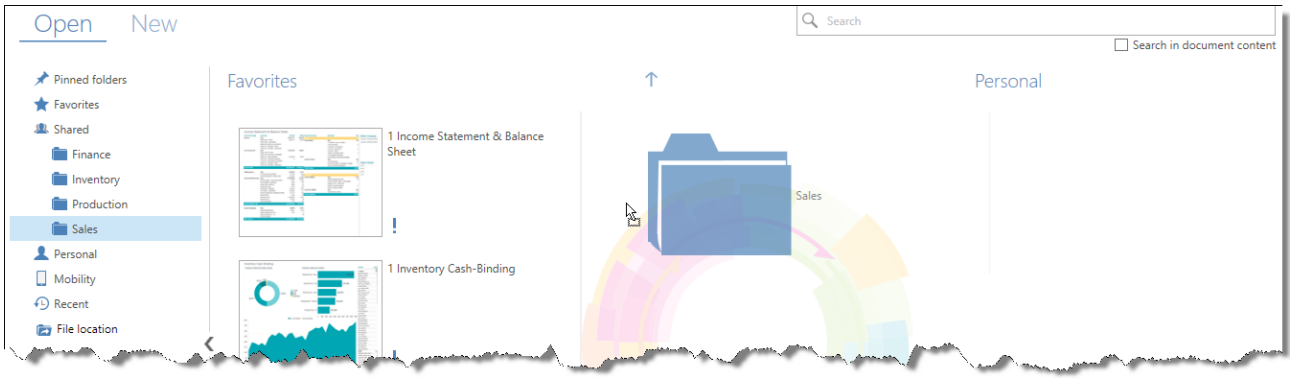


The client offers two ways to get started working with your data:

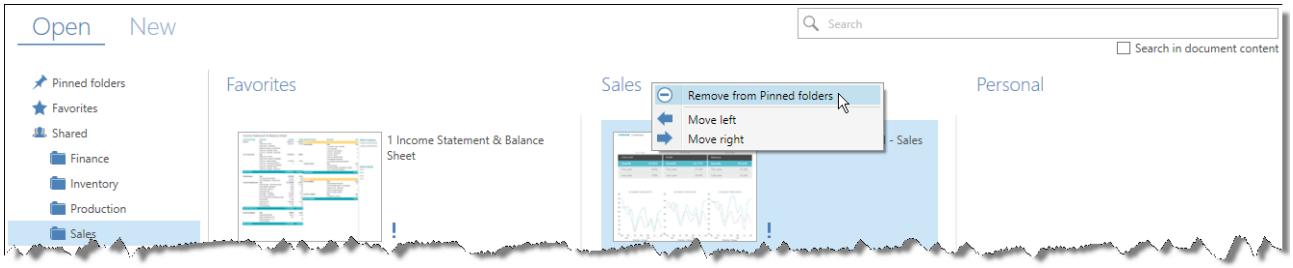
- You can **open** existing documents by browsing them in the *Pinned folders* or in the folder structure on the left-hand side of the client. You can use the Search field to make it easy to search relevant document names and document content.
- You can click the **"New"** link in the top left corner to create a new document.

Pinned folders

If you, on daily basis, work with documents from a particular folder, you can add the folder to the Start screen's Pinned folders simply by dragging to and dropping it into the Pinned folders area.

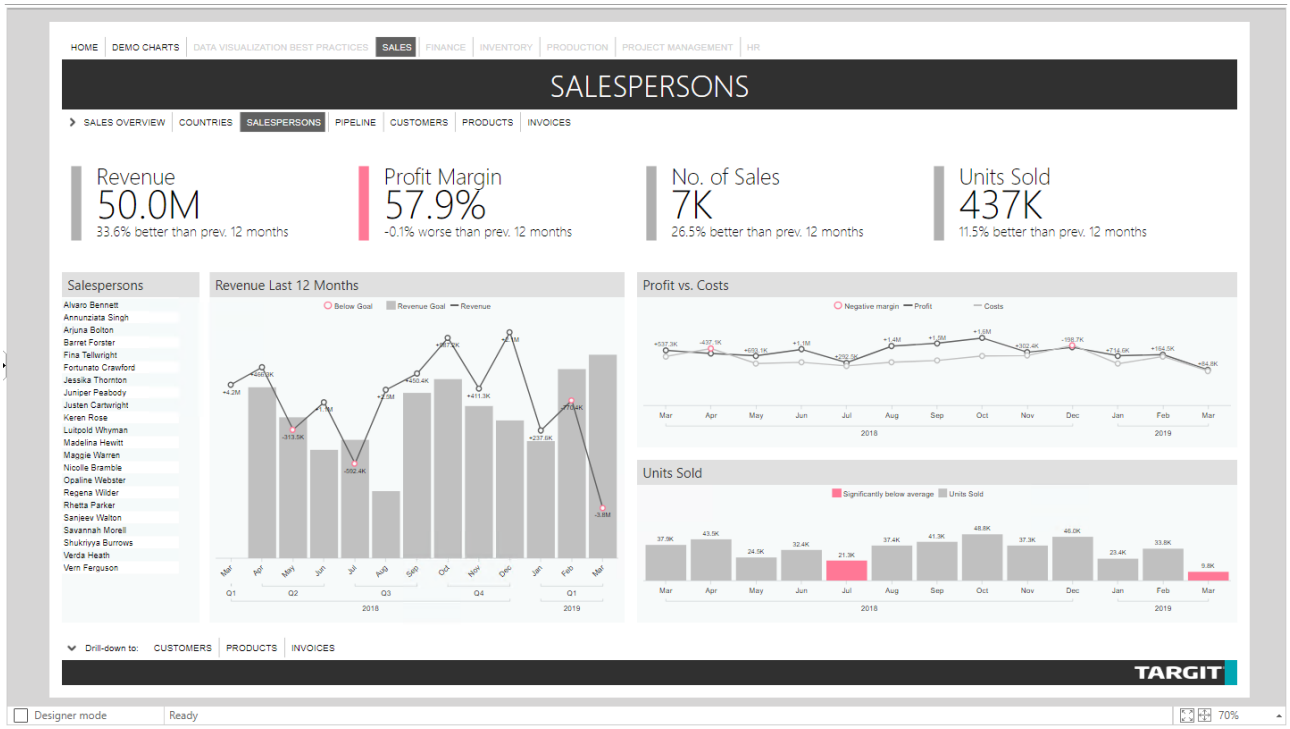


The folder can be removed by right-clicking and choosing Remove from Pinned folders.



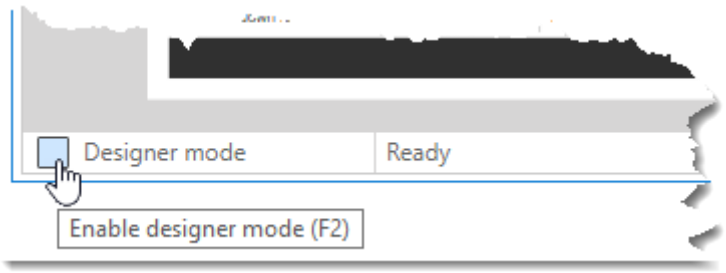
Basic Analyzing Techniques

Start out by opening one of the existing analyses directly from the Documents tab. Open the **Shared / TARGIT Demo / Sales / Salespersons** analysis.

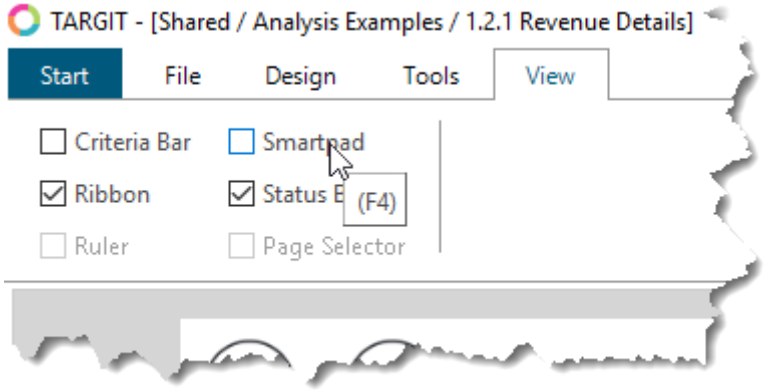


This analysis displays some sales numbers for a small clothes-producing company, Casual Clothing, which is the virtual company upon which all of TARGIT's demo data has been built.

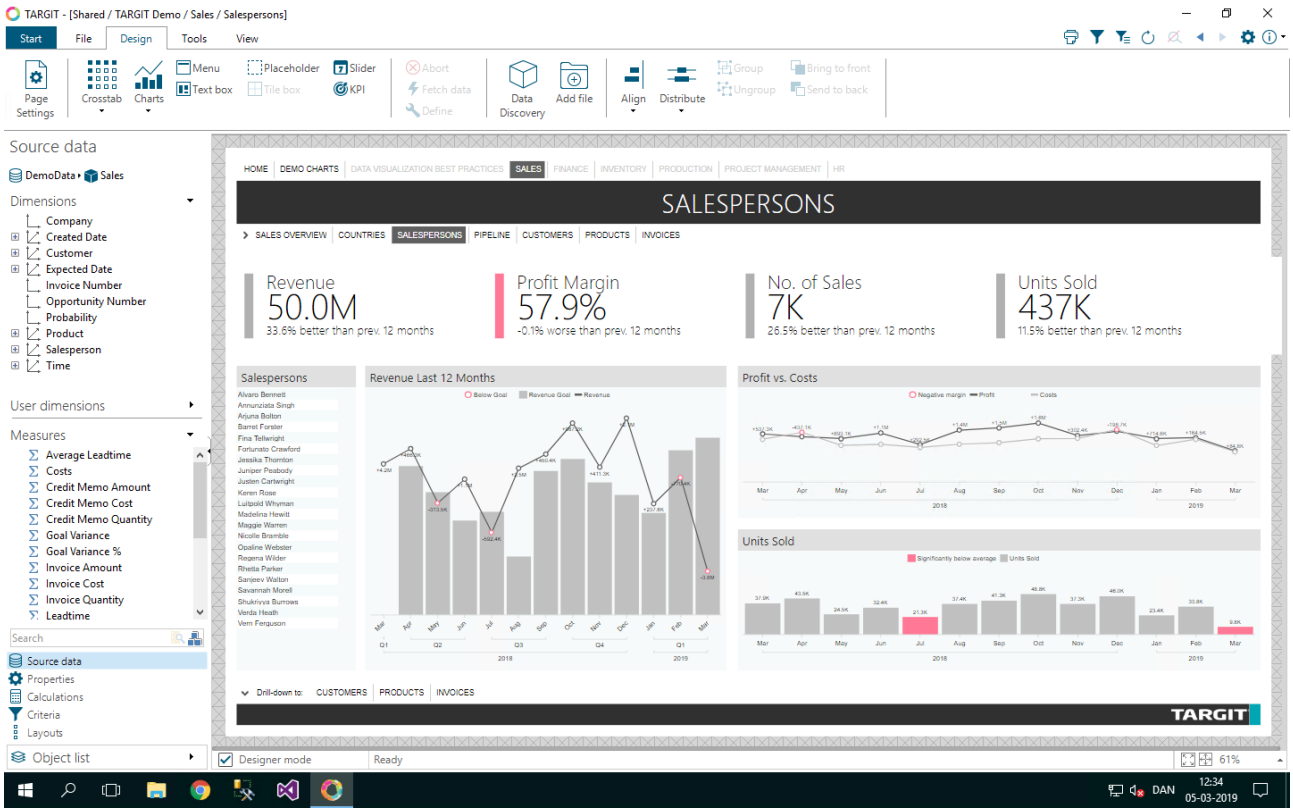
Notice: When opening a document in this way, it will open in *Consumer preview* mode. You can toggle between Consumer preview mode and Designer mode with the check box in the status bar or by pressing **F2**.



You can select which parts of the client that must be visible by turning them on and off in the VIEW ribbon. Many functions in TARGIT is supported by keyboard shortcuts as well. Try out the **F3 and F4** buttons for instance.



In Designer mode, with visible Smartpad and visible Ribbon, the analysis would look like this:



This analysis is created with a number of data objects; each has been defined from the available source data, measures and dimensions.

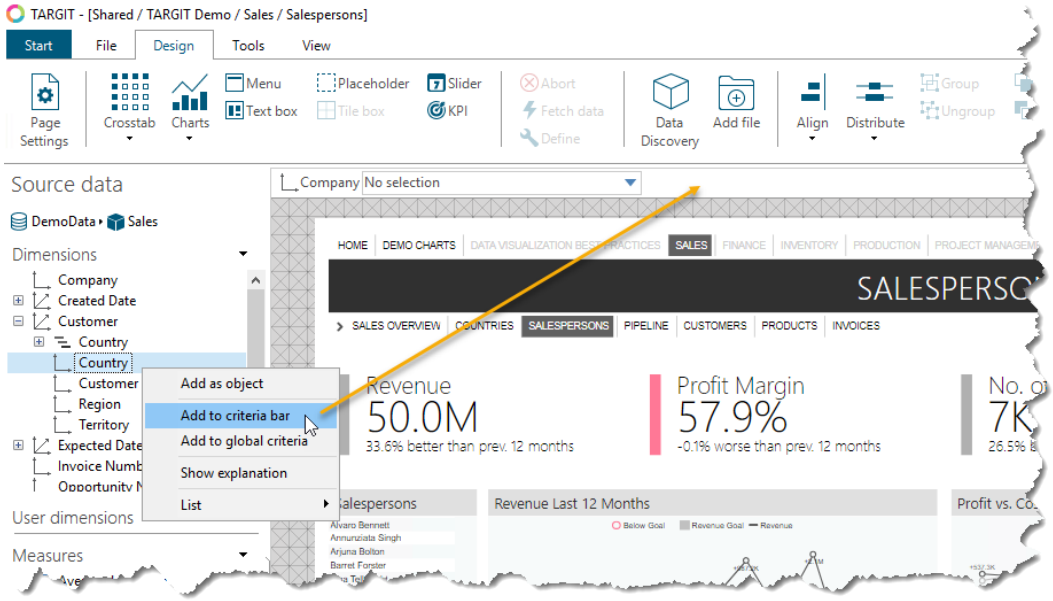
- Four KPI objects showing one individual measure each.
- A Salespersons list – that will be handy for filtering data.

- Three charts – column charts and line charts – showing one or more measures each.
- All data is affected by a Global criteria: Showing data for the last 12 months, dynamically.

Global criteria

Global criteria are criteria that affects *all* objects in an analysis. Global criteria can be added from the Criteria Bar or from a Criteria Editor.

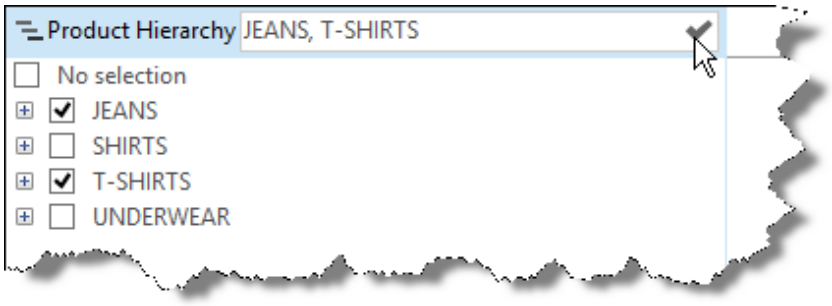
To add a dimension to the Criteria bar, right click the dimension in Source data and select 'Add to criteria bar':



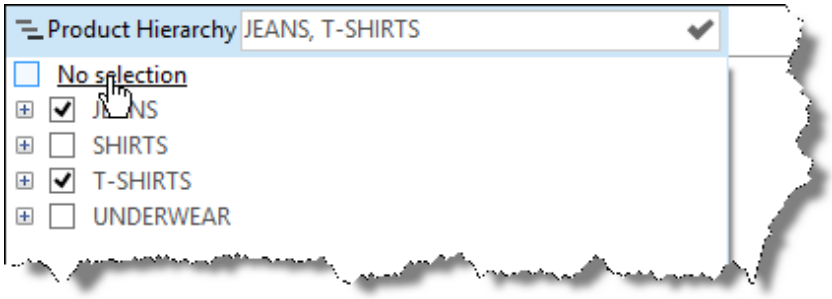
From the Criteria Bar, we may now choose dimension values to filter data in the analysis.

Tip: To pick just one value from the list, click the *name* of the dimension member. In this way, the dimension member will immediately be applied as a global criterion.

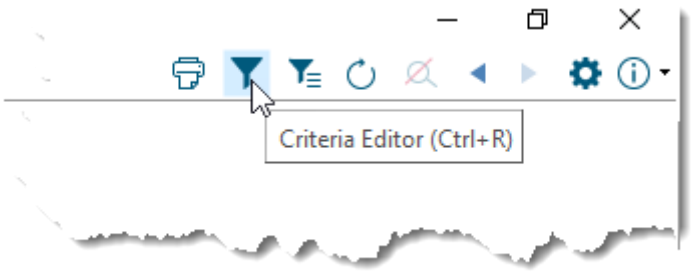
Tip: Use the check boxes only to pick multiple values from the list. Complete your selection by clicking the dimension's "Apply" button in the Criteria Bar.



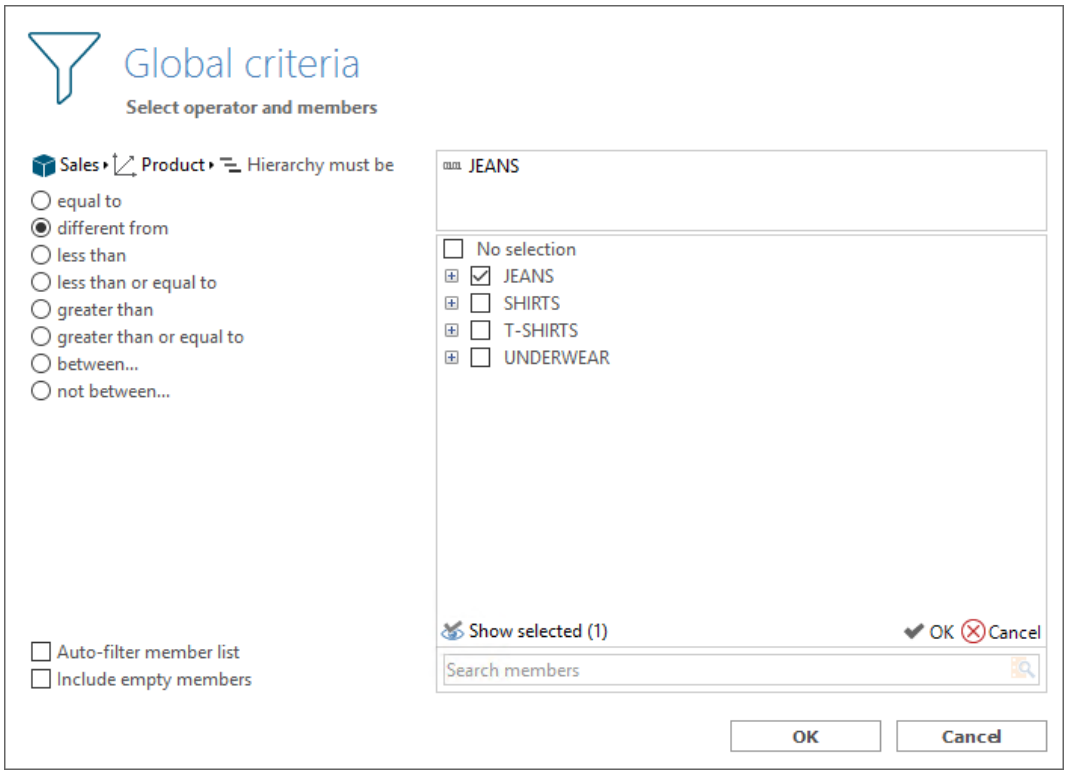
To remove Global Criteria from the Criteria Bar, select *No selection* from the criteria drop down list. "No selection" means "No filters" or "No criteria".



You can also add global criteria with the *Criteria Editor* that is located in the mini menu in the upper right corner of your client.

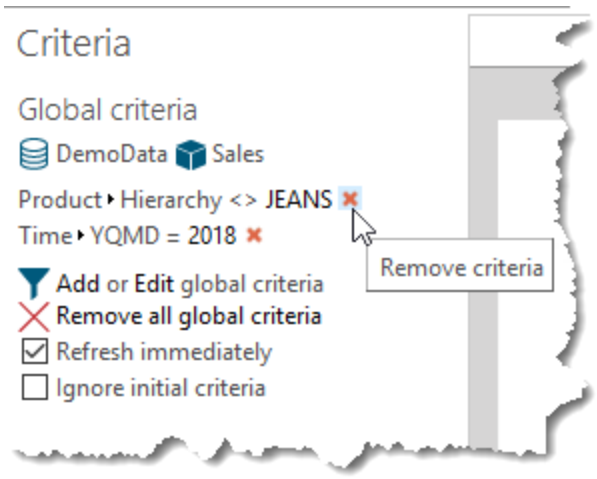


The Criteria Editor enables you to work with criteria on **all** dimensions – not just the ones that have been added to the Criteria Bar for the current analysis.



Tip: The Criteria Editor can work with different operators than the ”equal to” operator. All criteria from the Criteria Bar are treated like “equal to” criteria, while in the Criteria Editor you can apply e.g. “different from” criteria.

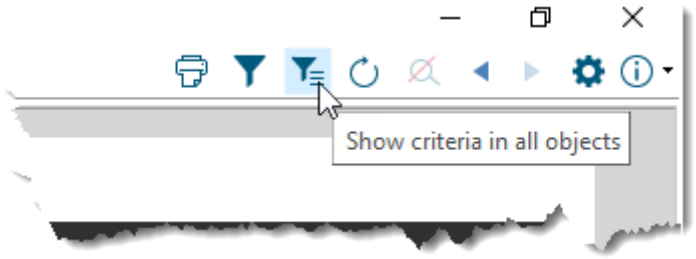
From the Smartpad Criteria you can at any time see what global criteria currently you analysis. From this point, you can also add new global criteria, edit the existing ones or completely remove global criteria.



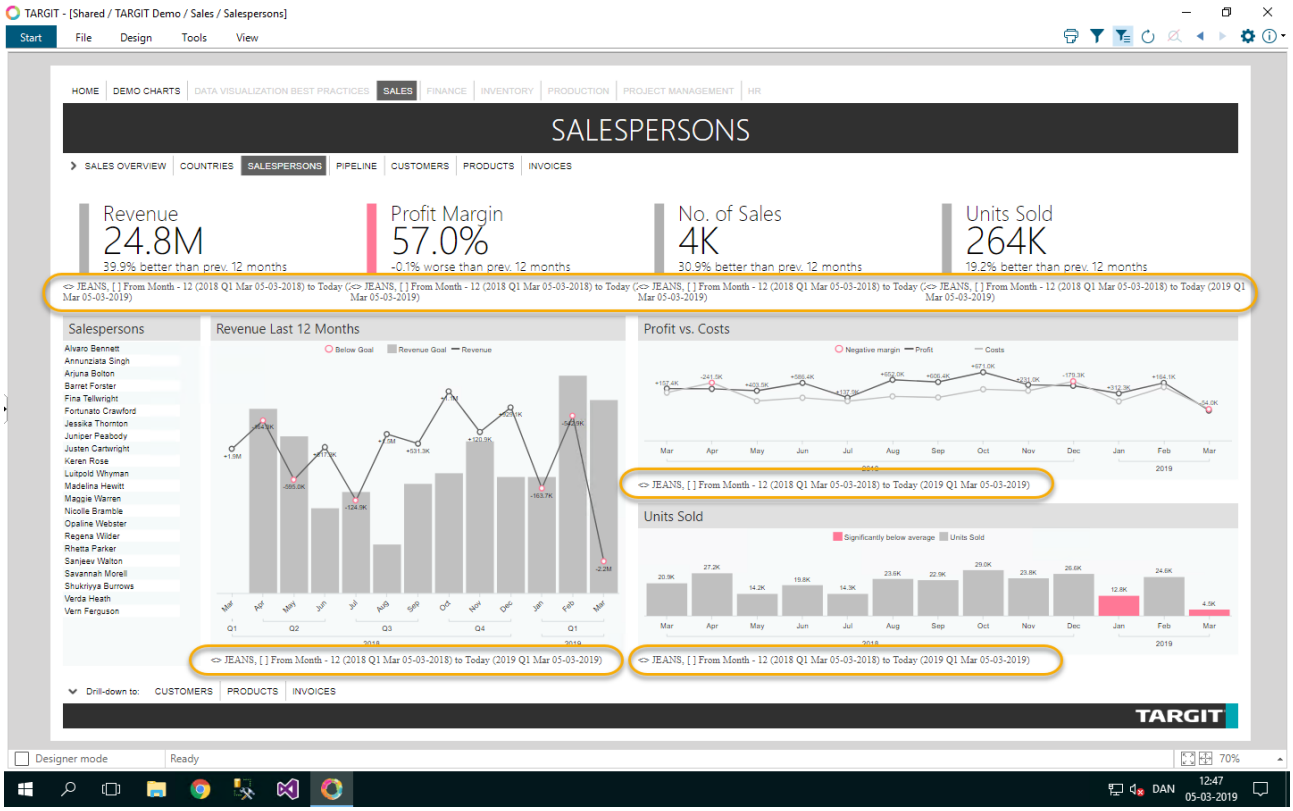
Show criteria in all objects

Sometimes it can be useful to know the exact criteria that apply to any individual object. Of course, when we add criteria as *global criteria*, it will be the same criteria that apply to all objects. However, as you will see later, objects may also be affected by individual criteria.

Enable the *Show criteria in all objects* option from the mini menu in the upper right corner.



Once it has been enabled, you can read the individual objects' criteria from the small notification at the bottom of the object.



Drill-down criteria

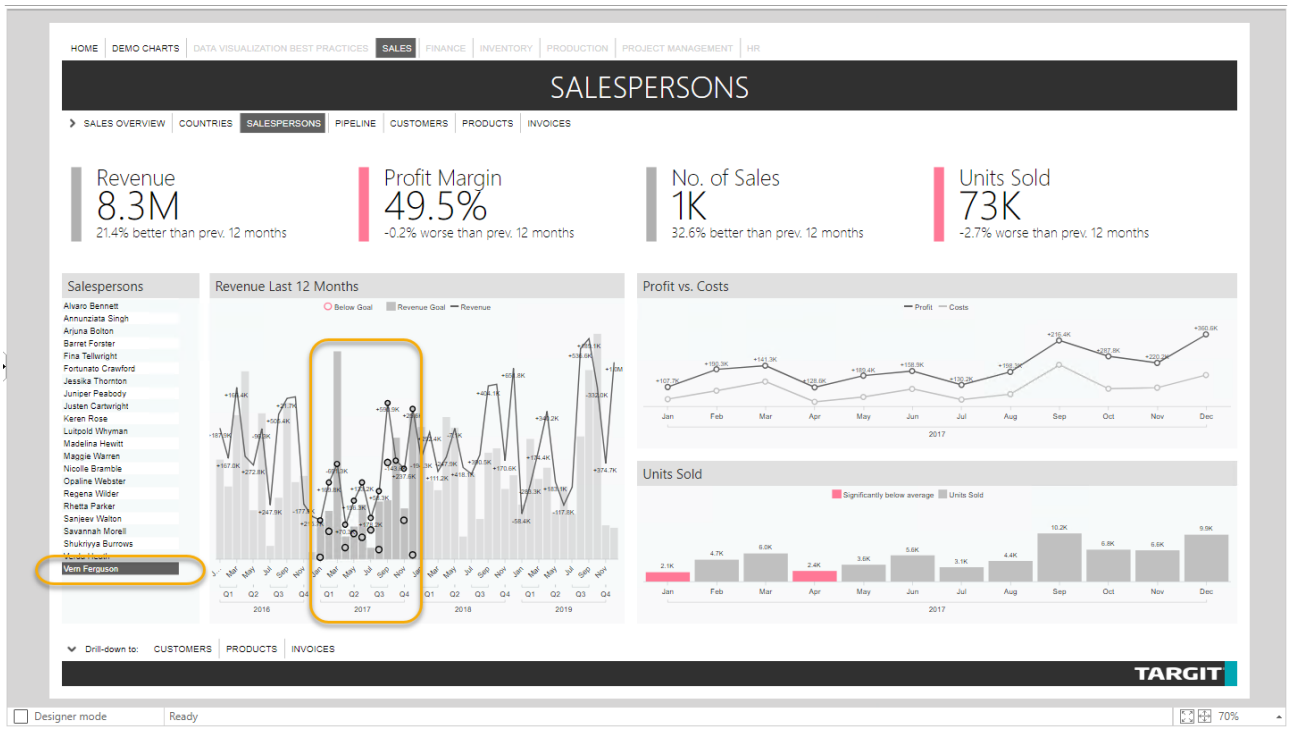
Another extremely efficient way to work with criteria is to take advantage of the dimension members that are part of the analysis objects.

This is where the cross table comes into play. If you click one of the Salespersons in this list, you will notice that data in the other objects change accordingly. This is what is called a *Drill down* criteria – i.e. when you click a dimension member in one object, it will apply as a filter to the other objects.

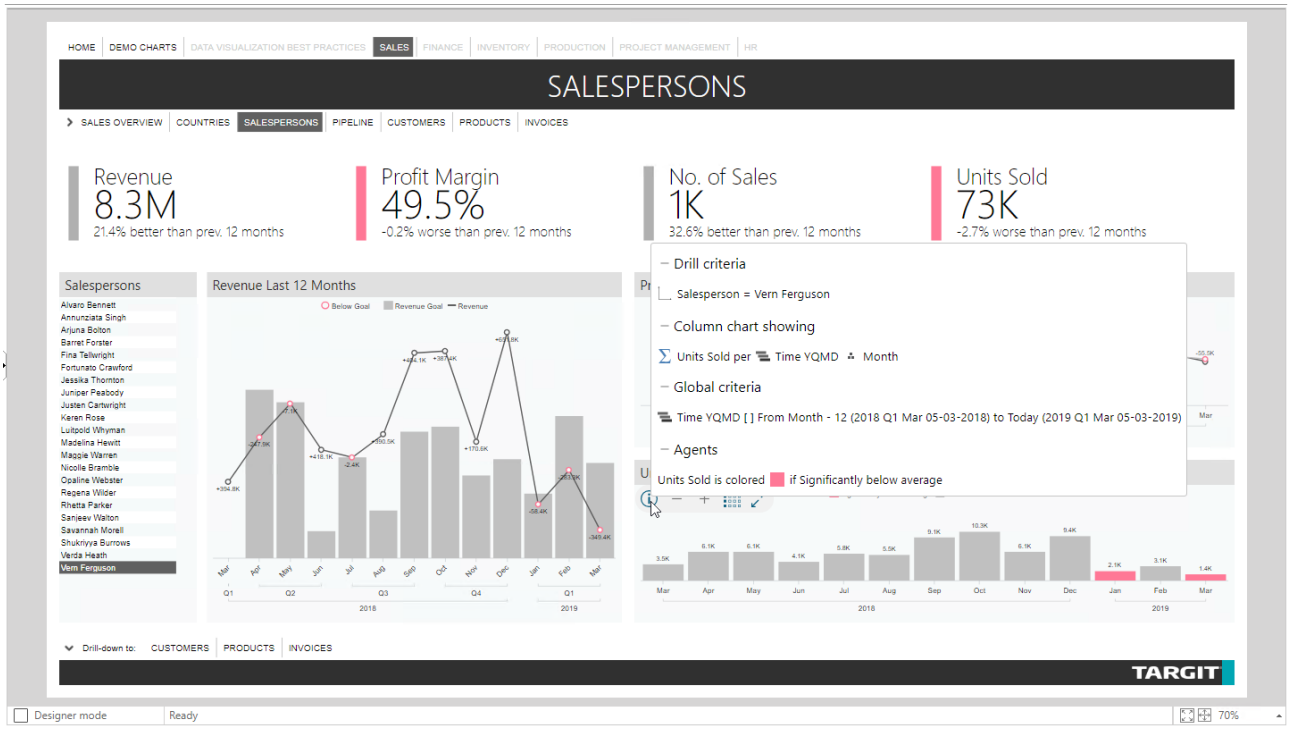
In the screenshot below, Vern Fergusson is clicked first. After that, on the Column/Line chart, the 12 months of 2017 have been selected. Both selections now work as filters on the remaining objects.

You have three options for selecting multiple dimension members:

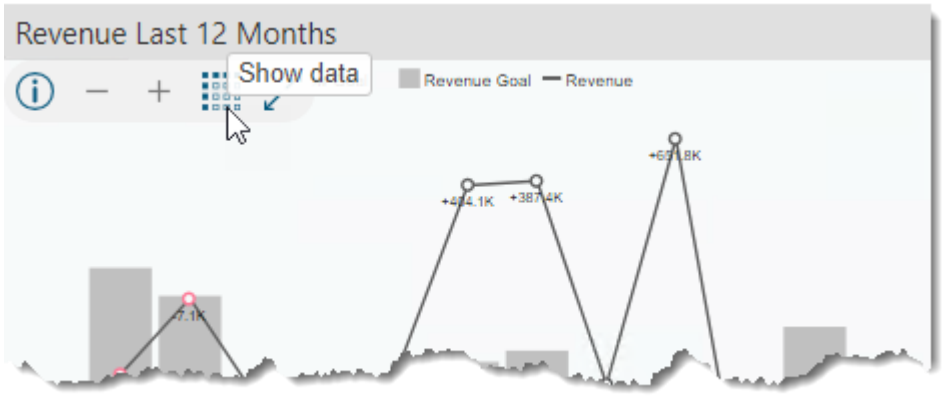
- In graphs, draw a lasso (a box) around the dimension members you want to select.
- Hold the CTRL key while multi selecting individual dimension members.
- Hold the SHIFT key to select a range of dimension members.



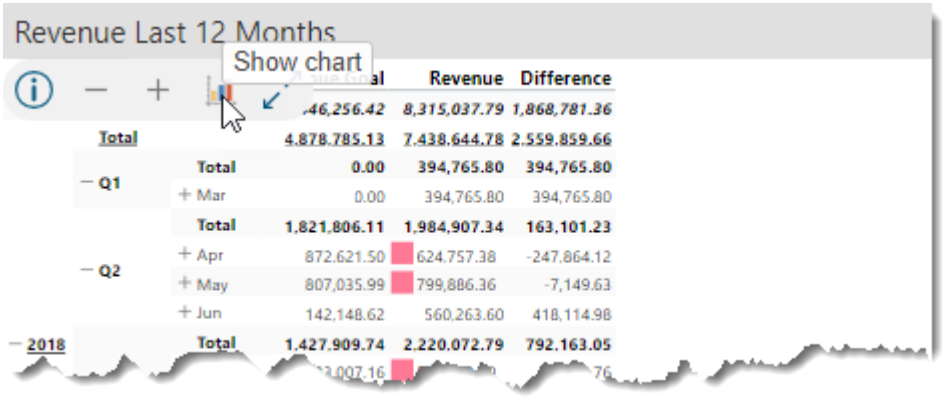
Point to (or click) the info icon in an object's top left corner to see what combined criteria, global as well as drill-down criteria, currently affects the object.



The horizontal bar chart is a graphical presentation of a couple of measures and the Time dimension. It is possible to see a crosstab presentation of the data by clicking the "Show data" button in the top right corner of the object.



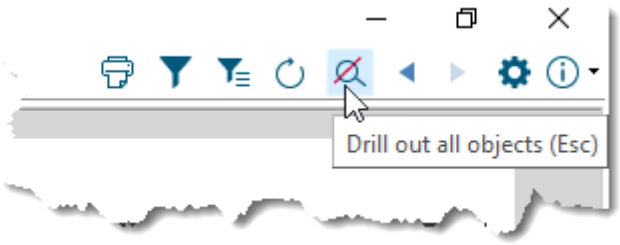
Click "Show chart" to get back.



Drill-down criteria can be removed by clicking the selected member again or by clicking the "Drill out" button in the top right corner of the object from where the drill-down criteria was initially applied.

Tip: You can also remove drill-down criteria, like the month in the example above, by clicking "outside" the dimension members in the object.

Tip: You can remove all drill-down criteria from all objects in your analysis by clicking the ”Drill out all objects” button in the upper right corner of your client:



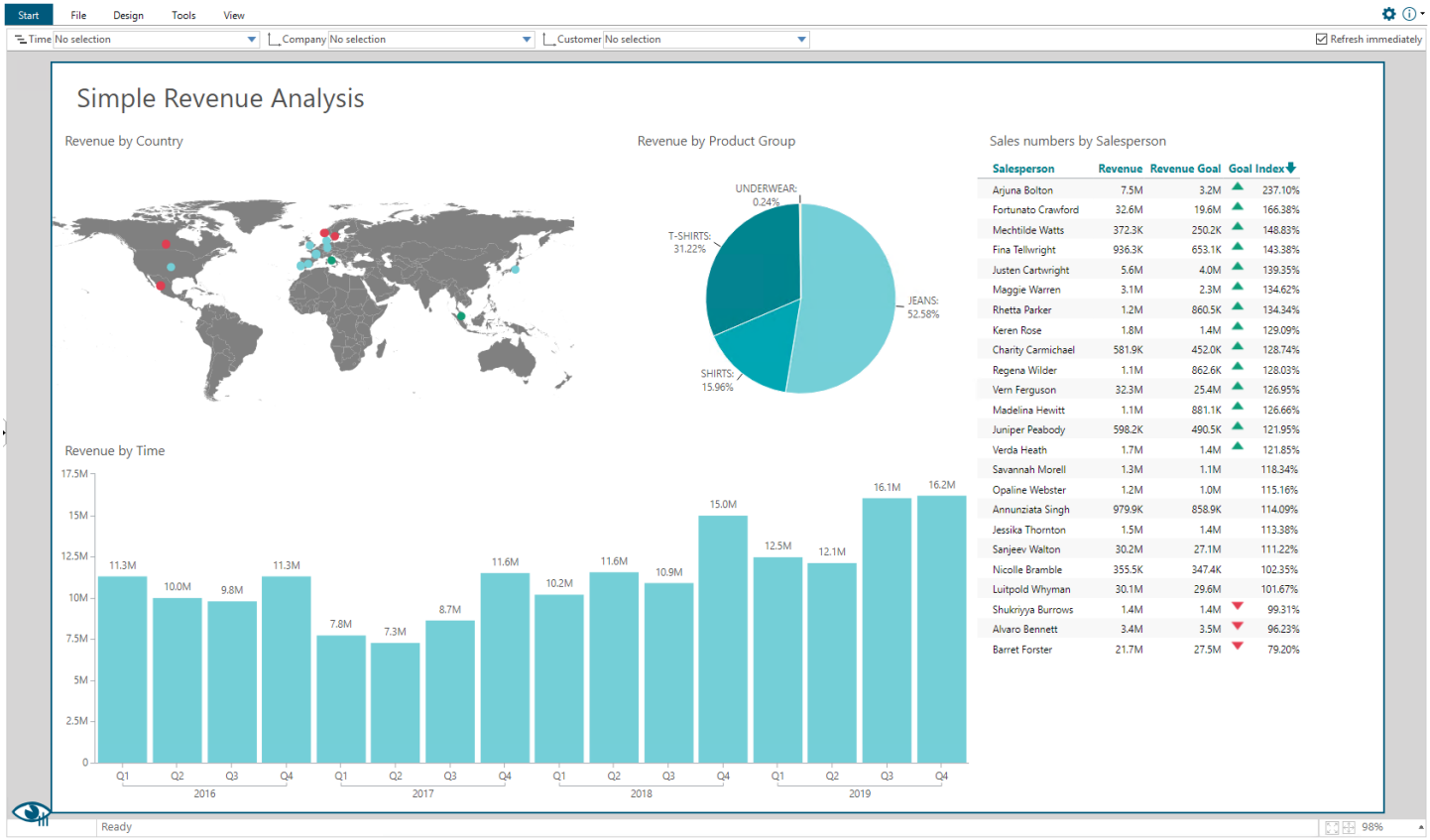
Note: When an object has been used for applying drill-down criteria, the object will be “locked” until the drill down selection has been removed. As long as the object is locked, it will not respond to e.g. formatting changes and other criteria changes.

Exercises Lesson 1

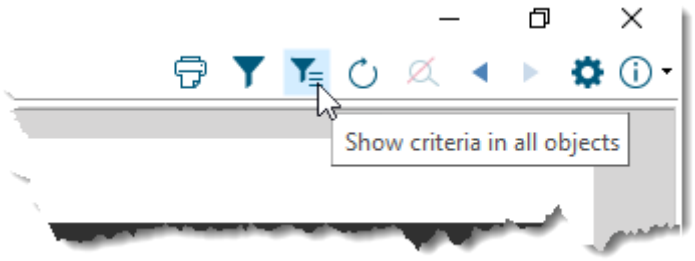
(Screenshots and exercises are based on version 2019.0 demo data. If you are working on an earlier or later version you may need to subtract or add 1 year to achieve similar results.)

Task 1

Open the **Simple Revenue** analysis from the Shared / Analysis Examples folder.



Tip: Before you start working with criteria, go to the toolbar and enable *Show criteria in all objects*.



Use the analyzing techniques learnt from this lesson to find answers to the following questions.

1. Filter data to **Time = 2018**. Which country had the highest revenue in 2018?

   (**Tip**: Use the *Criteria Bar* to apply the Time criterion. Also, toggle the map to crosstab presentation, if necessary.)

   Answer A: _____

2. Filter data to **Time = 2018** and **Customer Country = Answer A**. Based on these criteria, which salesperson had the highest revenue?

   (**Tip**: Click the country's dot on the map to apply it as a drill-down criterion to the other objects.)

   Answer B: _____

3. Filter data to **Time = 2018** and **Customer Country = Answer A** and **Salesperson = Answer B**. Based on these criteria, which month has the highest revenue?

   (**Tip**: The Time dimension is a hierarchical dimension. Use the plus and minus buttons in upper right corner of the bar chart to move from one level of the hierarchy to another.)

   Answer C:
   _____

4. Filter data to **Time = 2018** and **Customer Country = Answer A** and **Salesperson = Answer B** and **Month = Answer C.** What is T-SHIRTS' share of the revenue with these filters?

   Answer in percent:

   _____

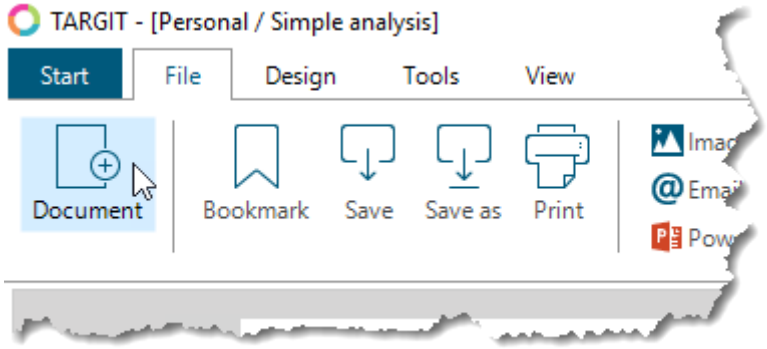
Answer in actual revenue value:

_____

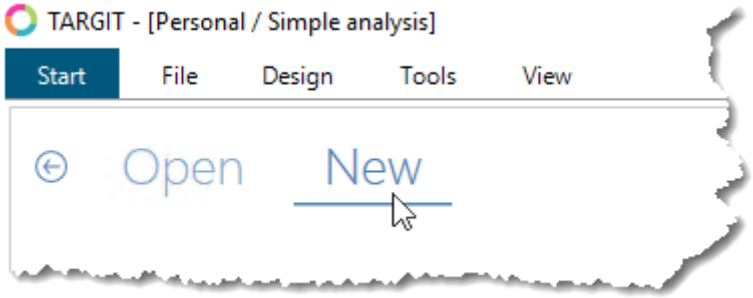
Lesson 2: Create a new analysis

The TARGIT client offers multiple options for creating a new analysis.

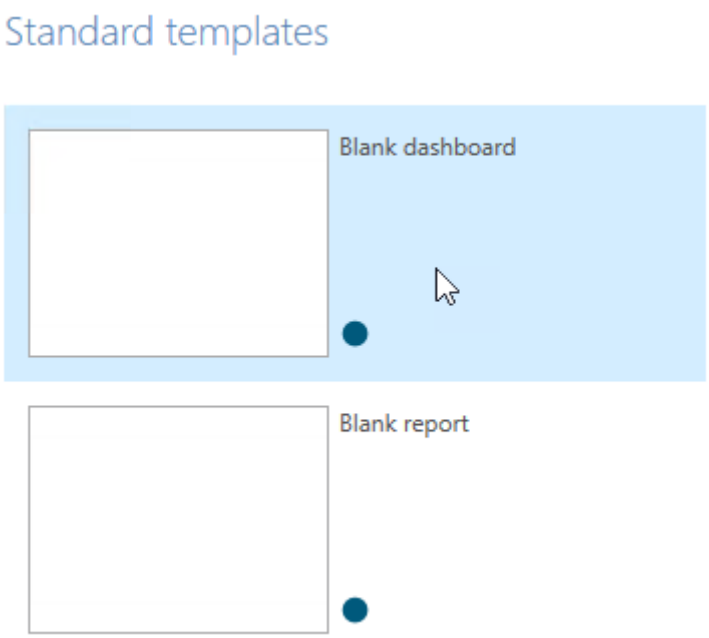
If you already got an analysis open in your TARGIT client, you can simply go to the File menu and click *Document*.



Alternatively, you can go to the Start screen and click the *New* button.

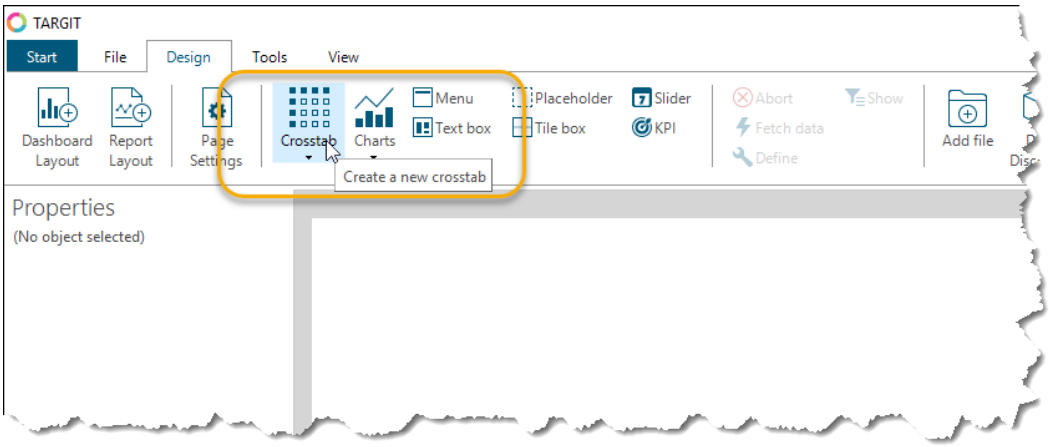


Both options will bring you to the next step where you can decide between creating a new dashboard or a new report:



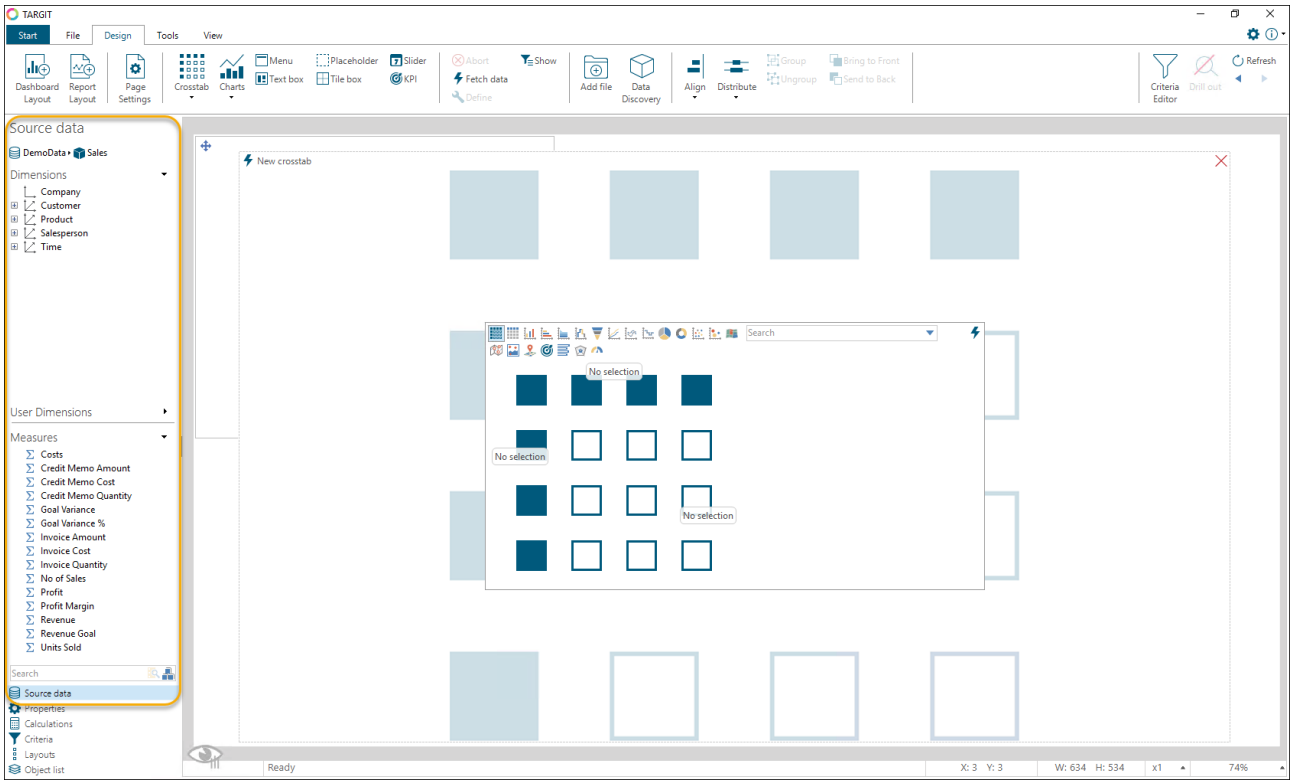
For now, we will be working with dashboards.

Having selected "Blank dashboard", TARGIT will present a blank page upon which you can start adding objects. Let's start out by adding a new crosstab to the page.



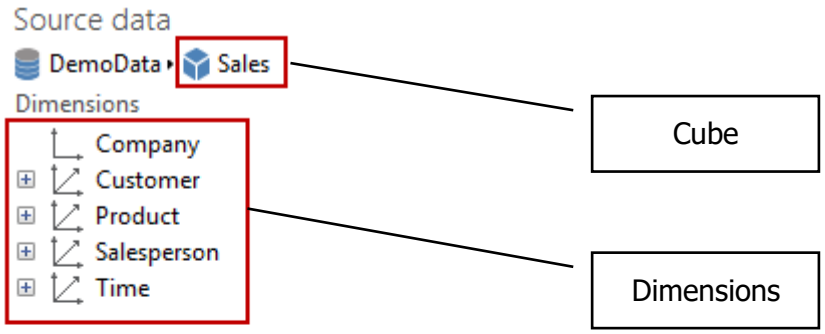
Source Data

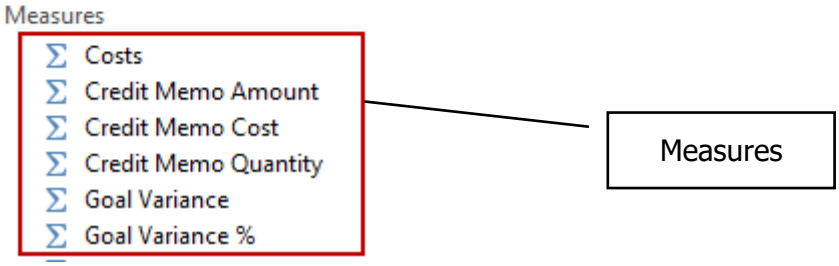
The first thing you need to consider when creating a new analysis is your *Source Data*. The data that are available through the TARGIT client would normally originate from one or more of your company´s ERP systems, e.g. a Navision database.



Usually these data will have to be modified before they can be used for analytical and reporting purposes in TARGIT – or any other Business Intelligence system for that sake. The modification takes place in intermediate Data Warehouses, typically by structuring the data into multidimensional databases, also known as *cubes*.

Each cube is then defined with a number of *measures* (quantitative data, KPIs) and a number of *dimensions* (which are used to categorize and filter the measures).





Understanding the structure of a dimension

One dimension can be structured from *attributes* or *hierarchies* or very often both of these.

The TARGIT client uses the following symbols for each sub element of a dimension:

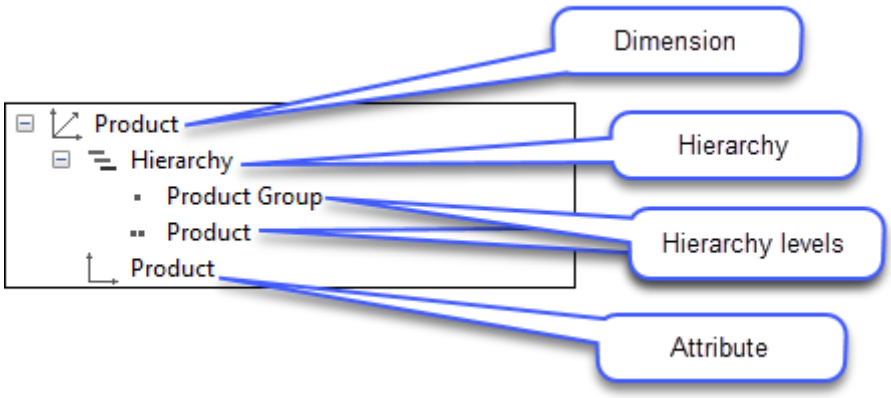
- This symbol indicates that the dimension contains multiple categorization options, and often you will need to expand the dimension to see and use the available options.

- This symbol indicates an *attribute*. An attribute is often just a simple list of dimension members, e.g. Salespersons names.

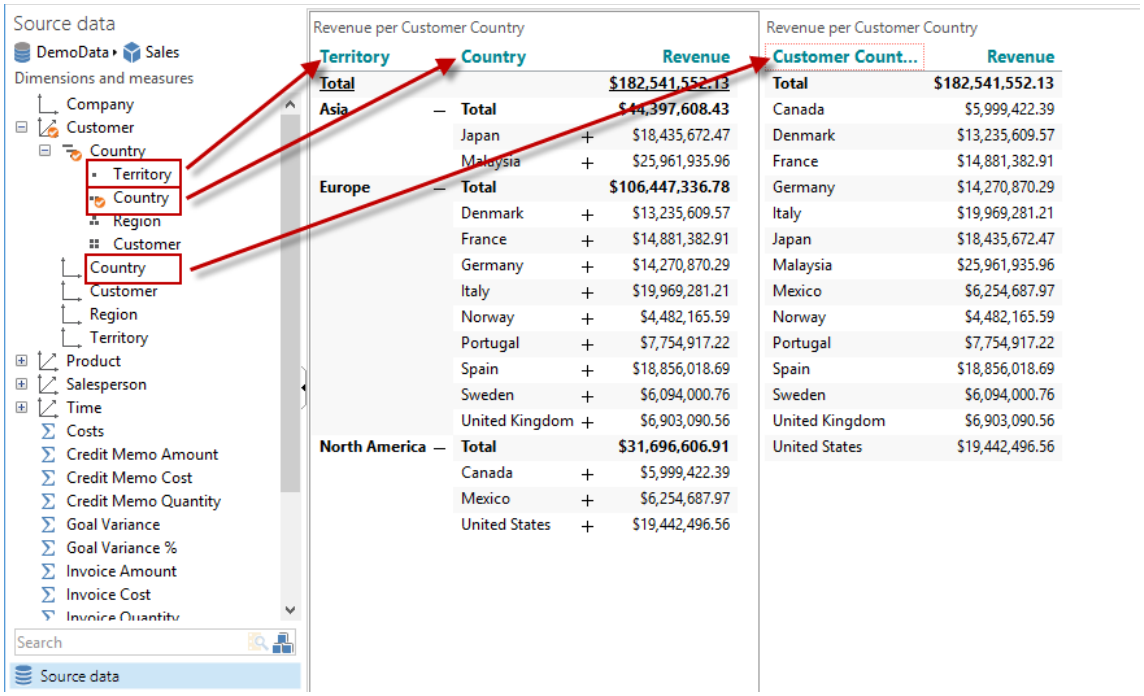
- This is the symbol for a *hierarchy*. A hierarchy is a collection of related attributes that has been structured into a multi-level hierarchy. Each level

will typically contain data on a more detailed or more granular level than the preceding level.

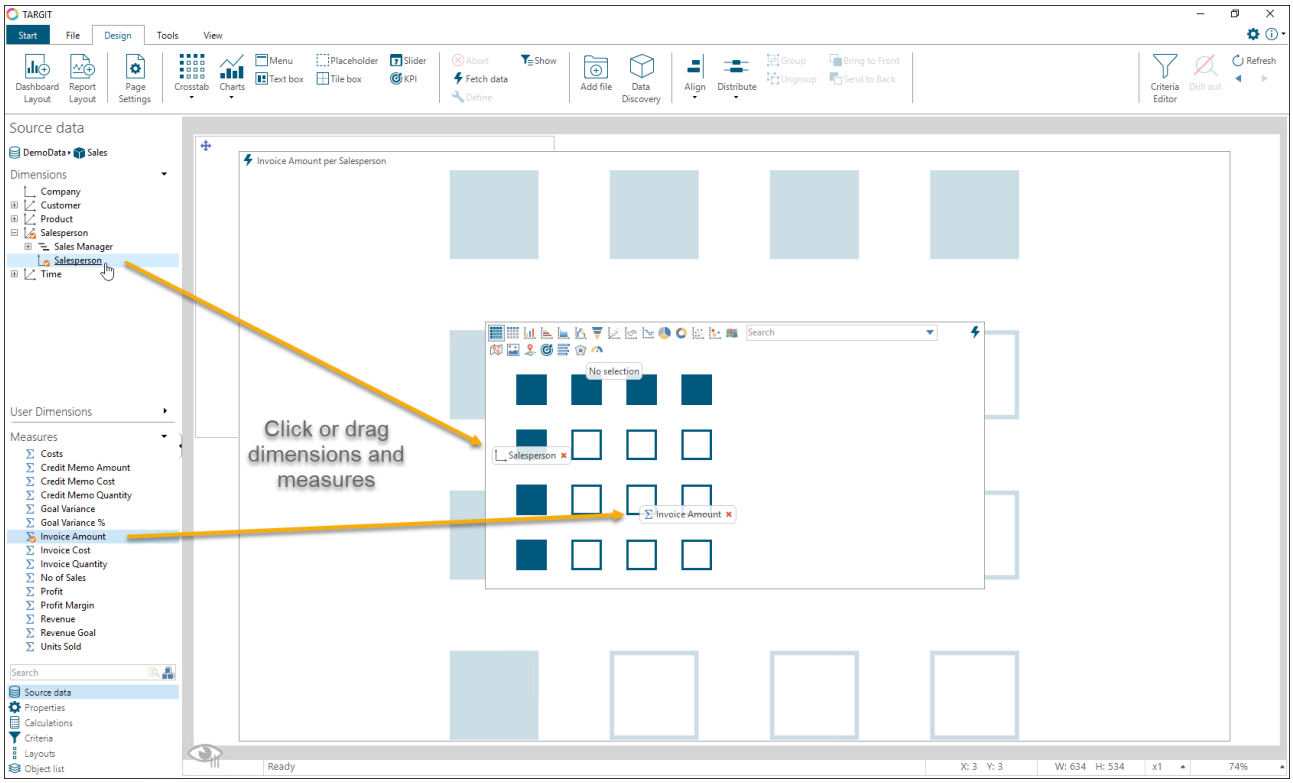
In the screenshot below, we have taken a closer look at the *Customer* dimension. The Customer dimension has been expanded to reveal that it contains a four level hierarchy (also shown expanded) and a number of attributes.



The first crosstab uses the hierarchy down to the second level to show Revenue per Territories and Countries. The second crosstab uses the *Country* attribute to produce a list of countries with their revenues.

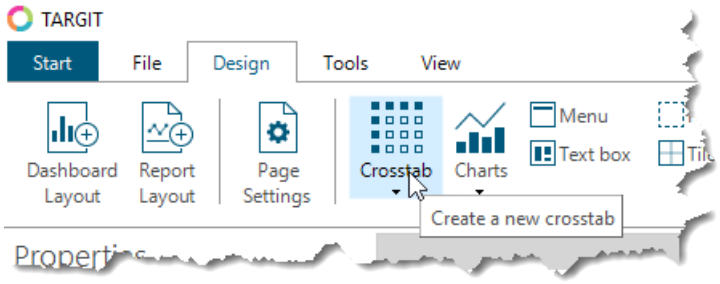


Simply click or drag the measures and dimensions you want to include in your new object. TARGIT will automatically direct your selections into relevant positions in the crosstab.



When you are done with your selection of measures and dimensions, you can see the result by clicking the *Fetch* icon in the upper left corner of the new object.

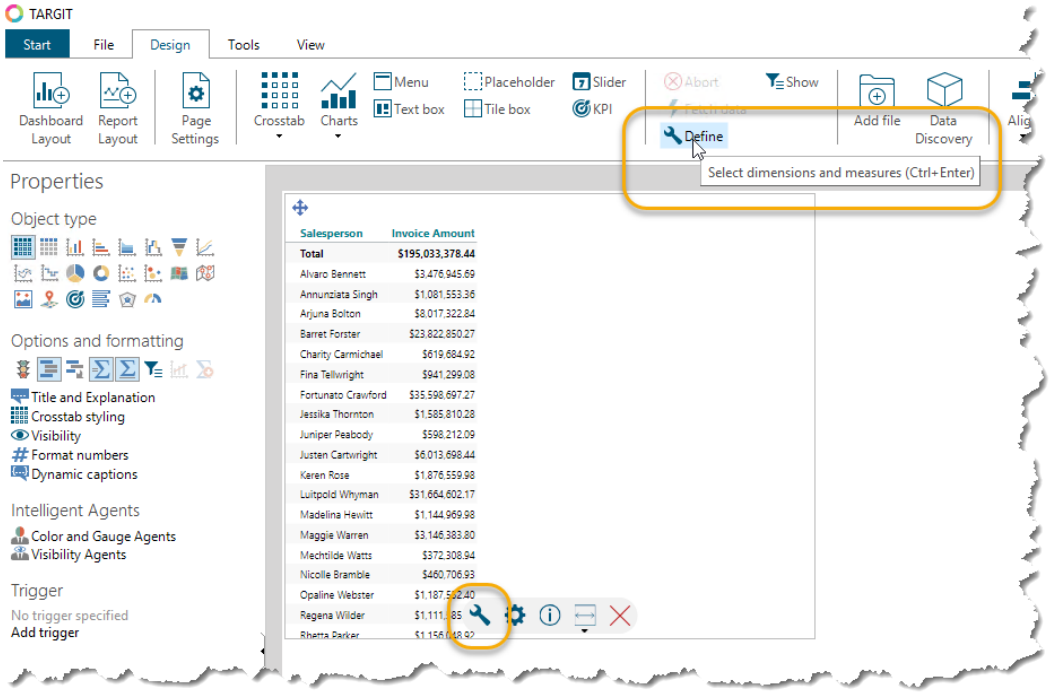
After this, you can add more objects, e.g. additional crosstabs, to the new analysis in a similar way: By clicking the appropriate object type in the *Add Object* section in the DESIGN ribbon.



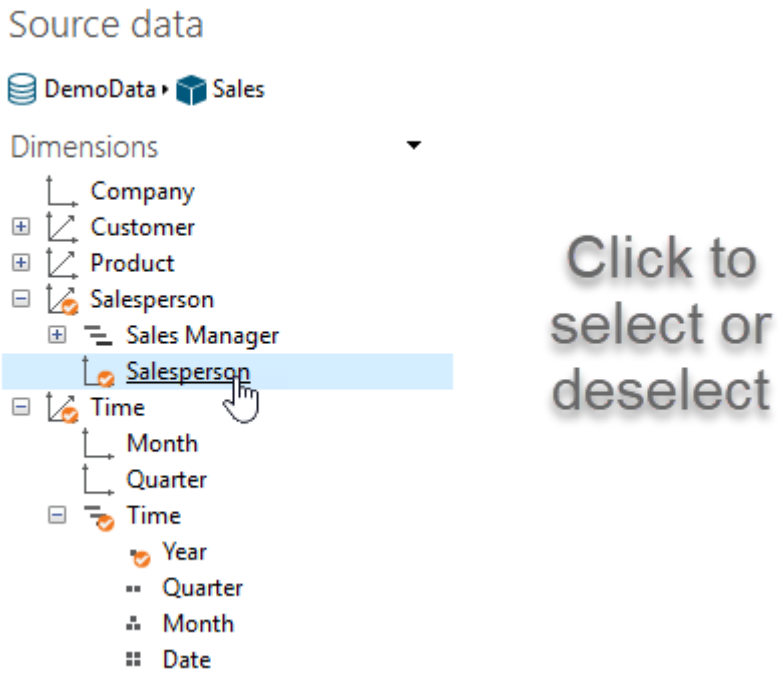
Redefining objects

When an object has been added, defined and data has been fetched, you may find that the initial definition was wrong or inadequate. In that case, you can easily redefine the content of the object.

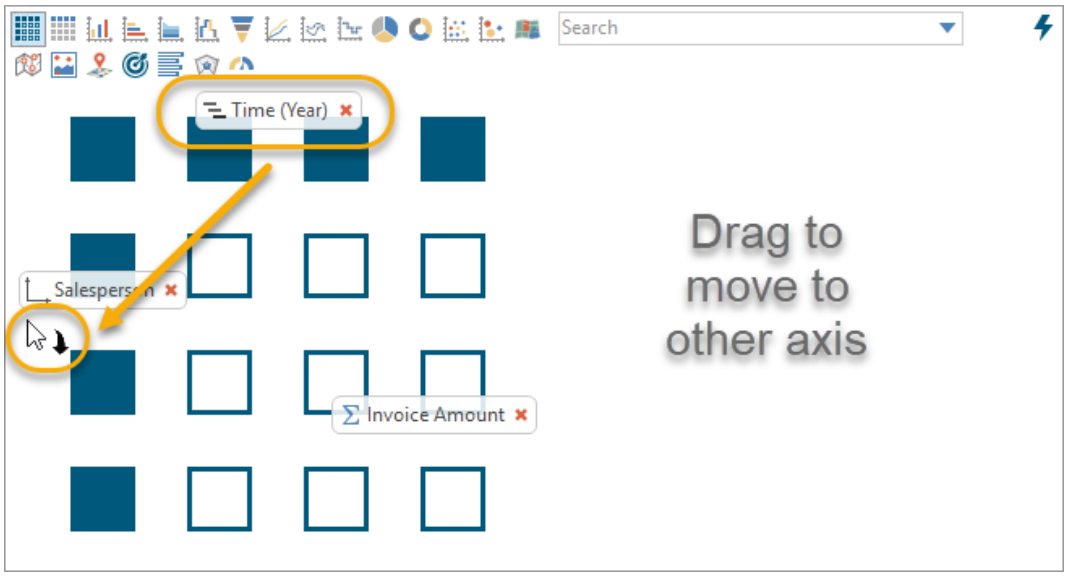
To redefine an object, use the *Define button* with the symbol of a wrench in the Design ribbon or click the *Define* button associated with the object. Notice the CTRL + Enter keyboard shortcut!



Clicking the *Define* button will automatically turn the Smartpad focus to the *Source data* tab. All currently selected measures and dimensions are highlighted with a small check mark, and can be deselected from the object by clicking them in the Source data list.



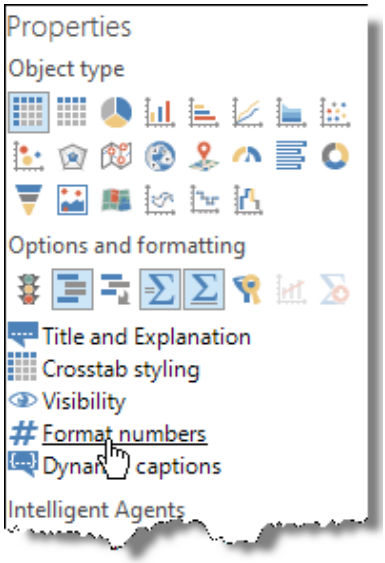
If you have already selected the correct source data, but the order is wrong or placements on horizontal or vertical axes are wrong, you can use drag and drop on the already selected measures and dimensions to get them correctly located.



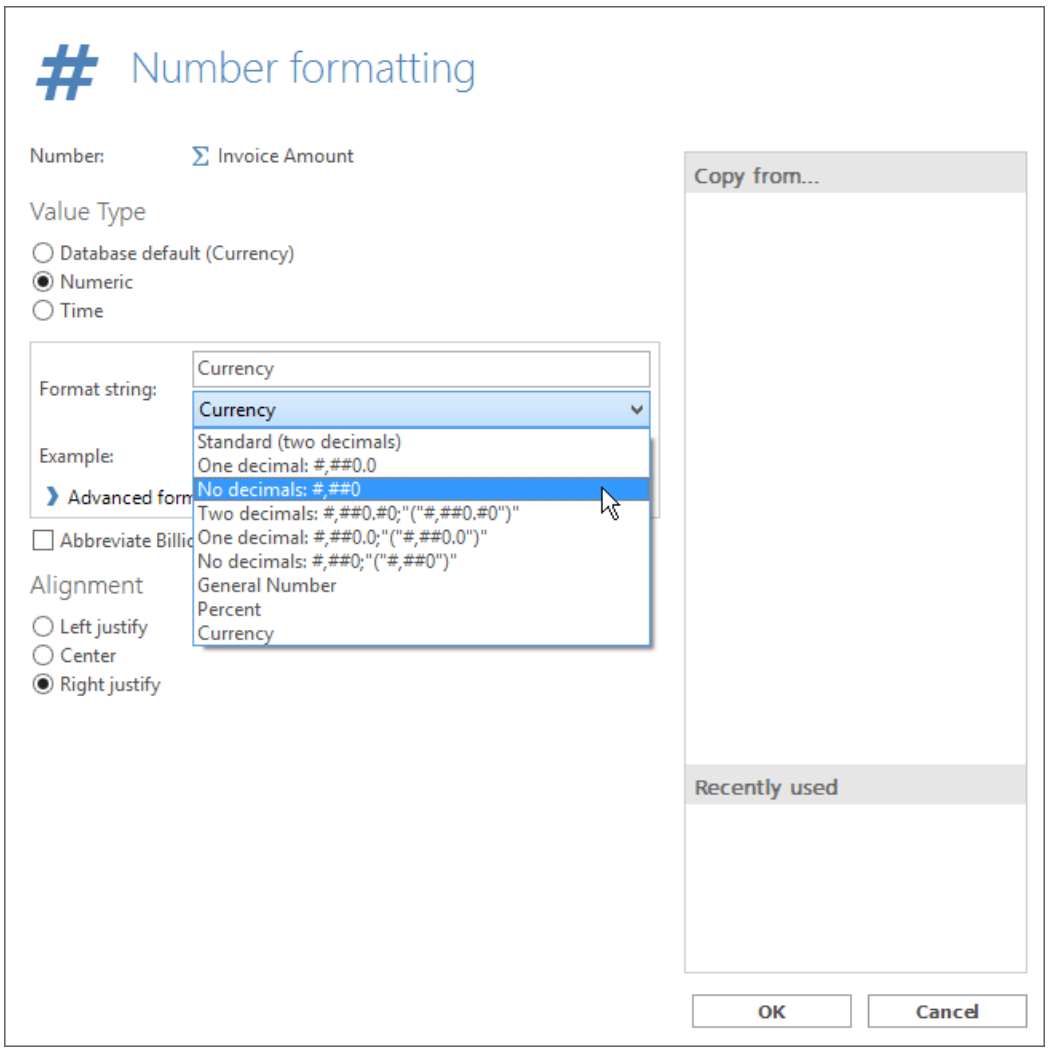
When you are done redefining the object, *fetch* data again.

Number formatting

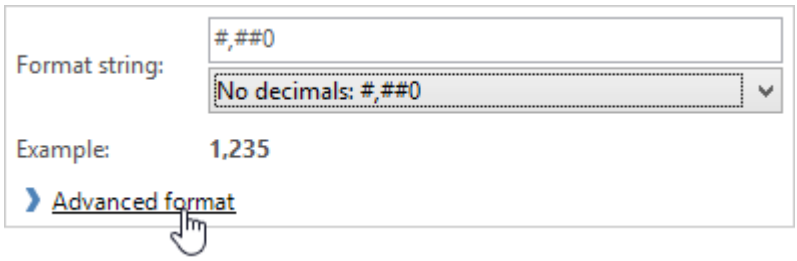
Most formatting options for an object, including number formatting, is available from the *Properties* tab on the left hand side of the client.



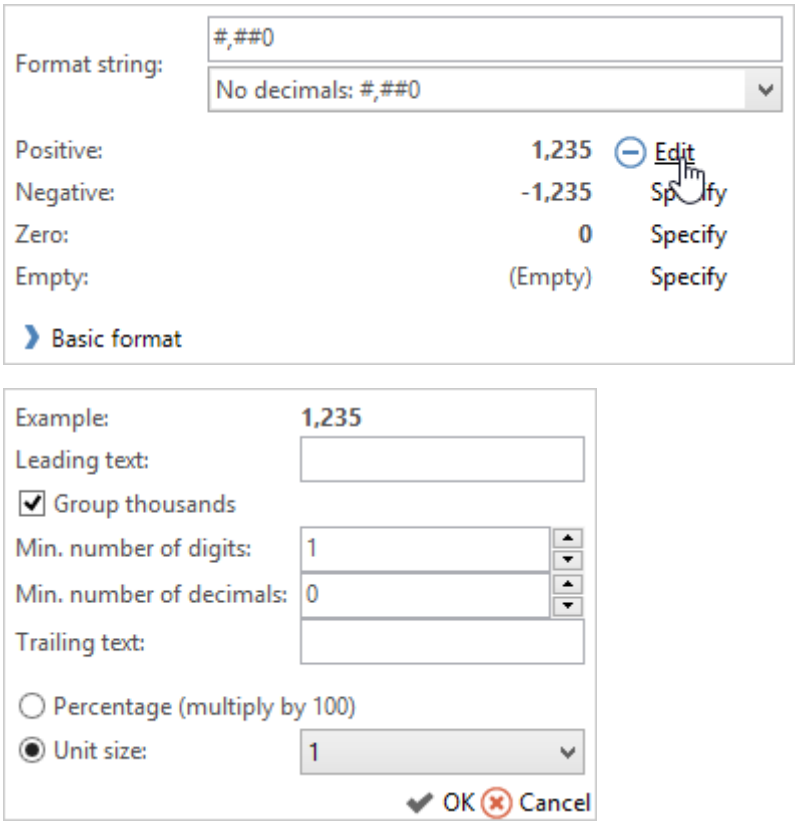
The default number format for any measure has been determined on the database level, but you can change this format to any other numeric format. The number formatting dialogue box provides a list of predefined number formats.



In case you need an advanced or user defined format, you can achieve this by going into *Advanced format* options.



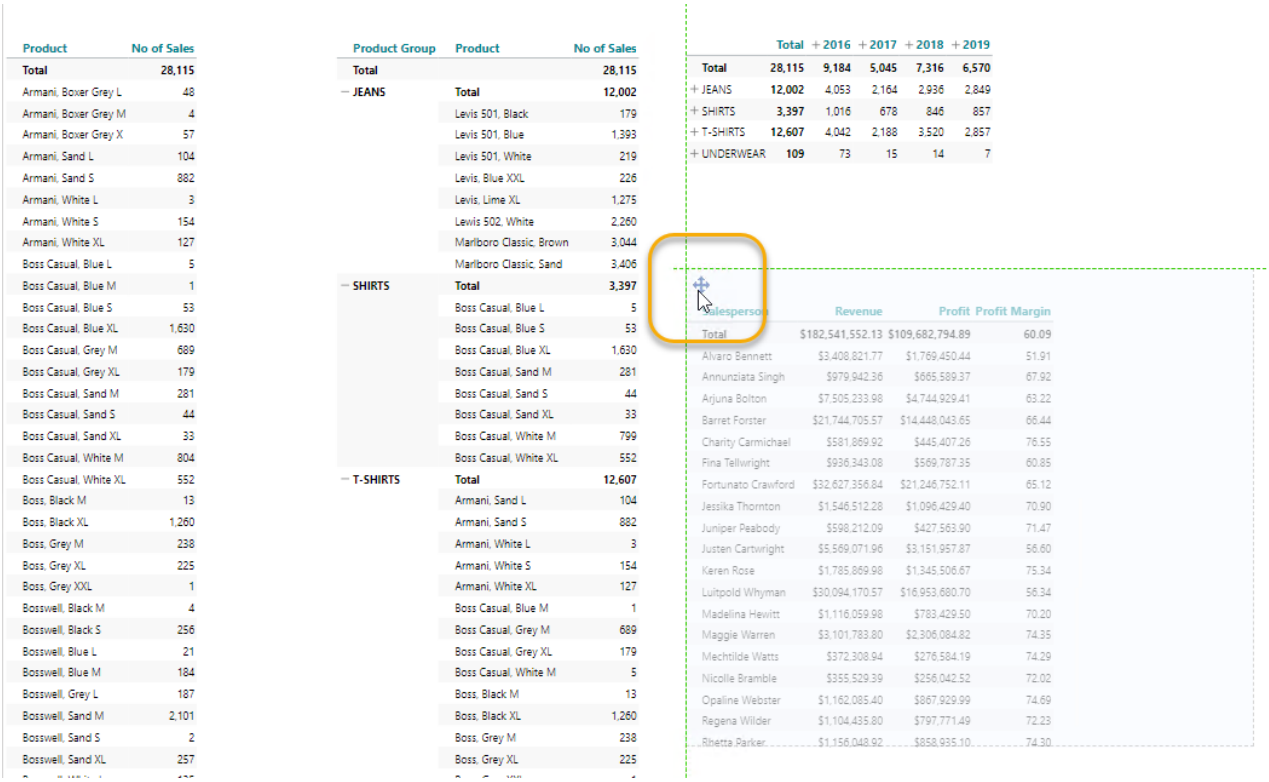
Actually, the *Advanced format* option lets you specify different formats for positive, negative, zero and empty numbers, but if only positive numbers format is specified, this format will be inherited to the other numbers.


Format string:
#,##0
No decimals: #,##0
Positive:
1,235
Edit
Negative:
-1,235
Specify
Zero:
0
Specify
Empty:
(Empty)
Specify
Basic format
Example:
1,235
Leading text:
Group thousands
Min. number of digits:
1
Min. number of decimals:
0
Trailing text:
Percentage (multiply by 100)
Unit size:
1
OK
Cancel

Re-arranging and re-sizing objects

To move an object, grab it by its handle in the object's upper left corner.

When moving the object around, you may be guided by orange or green guide lines to ensure correct alignment with the page and other objects.



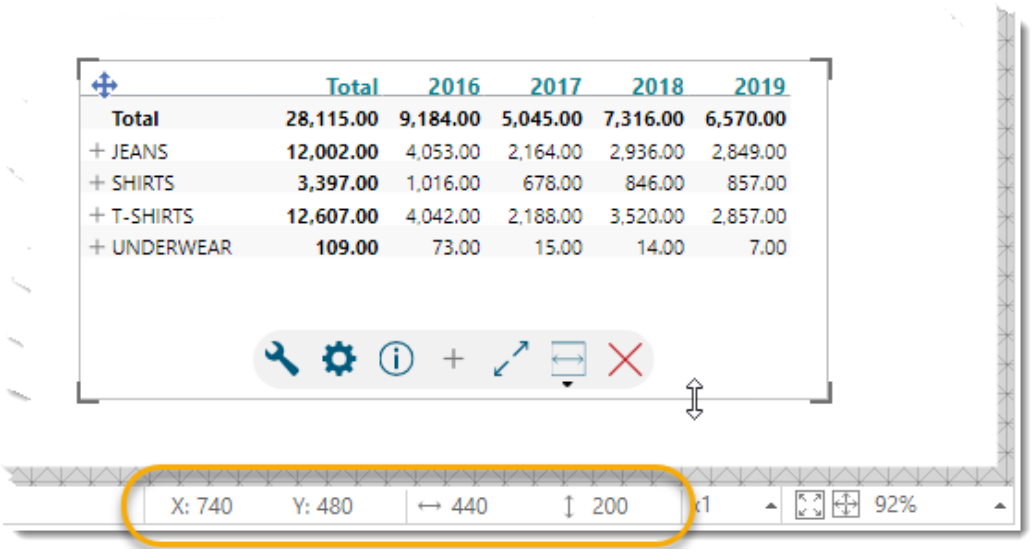
Product	No of Sales
Total	28,115
Armani, Boxer Grey L	48
Armani, Boxer Grey M	4
Armani, Boxer Grey X	57
Armani, Sand L	104
Armani, Sand S	882
Armani, White L	3
Armani, White S	154
Armani, White XL	127
Boss Casual, Blue L	5
Boss Casual, Blue M	1
Boss Casual, Blue S	53
Boss Casual, Blue XL	1,630
Boss Casual, Grey M	689
Boss Casual, Grey XL	179
Boss Casual, Sand M	281
Boss Casual, Sand S	44
Boss Casual, Sand XL	33
Boss Casual, White M	804
Boss Casual, White XL	552
Boss, Black M	13
Boss, Black XL	1,260
Boss, Grey M	238
Boss, Grey XL	225
Boss, Grey XXL	1
Bosswell, Black M	4
Bosswell, Black S	256
Bosswell, Blue L	21
Bosswell, Blue M	184
Bosswell, Grey L	187
Bosswell, Sand M	2,101
Bosswell, Sand S	2
Bosswell, Sand XL	257

Product Group	Product	No of Sales
Total		28,115
− JEANS	Total	12,002
	Levis 501, Black	179
	Levis 501, Blue	1,393
	Levis 501, White	219
	Levis, Blue XXL	226
	Levis, Lime XL	1,275
	Lewis 502, White	2,260
	Marlboro Classic, Brown	3,044
	Marlboro Classic, Sand	3,406
− SHIRTS	Total	3,397
	Boss Casual, Blue L	5
	Boss Casual, Blue S	53
	Boss Casual, Blue XL	1,630
	Boss Casual, Sand M	281
	Boss Casual, Sand S	44
	Boss Casual, Sand XL	33
	Boss Casual, White M	799
	Boss Casual, White XL	552
− T-SHIRTS	Total	12,607
	Armani, Sand L	104
	Armani, Sand S	882
	Armani, White L	3
	Armani, White S	154
	Armani, White XL	127
	Boss Casual, Blue M	1
	Boss Casual, Grey M	689
	Boss Casual, Grey XL	179
	Boss Casual, White M	5
	Boss, Black M	13
	Boss, Black XL	1,260
	Boss, Grey M	238
	Boss, Grey XL	225

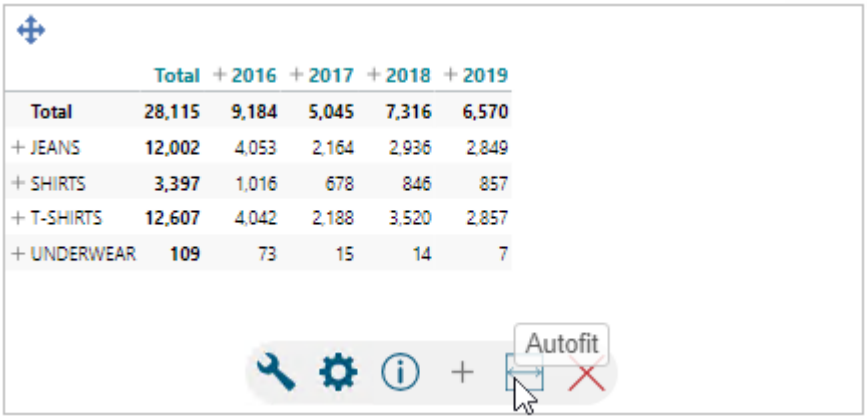
	Total	+ 2016	+ 2017	+ 2018	+ 2019
Total	28,115	9,184	5,045	7,316	6,570
+ JEANS	12,002	4,053	2,164	2,936	2,849
+ SHIRTS	3,397	1,016	678	846	857
+ T-SHIRTS	12,607	4,042	2,188	3,520	2,857
+ UNDERWEAR	109	73	15	14	7

Salesperson	Revenue	Profit	Profit Margin
Total	$182,541,552.13	$109,682,794.89	60.09
Alvaro Bennett	$3,408,821.77	$1,769,450.44	51.91
Annunziata Singh	$979,942.36	$665,589.37	67.92
Arjuna Bolton	$7,505,233.98	$4,744,929.41	63.22
Barret Forster	$21,744,705.57	$14,448,043.65	66.44
Charity Carmichael	$581,869.92	$445,407.26	76.55
Fina Tellwright	$936,343.08	$569,787.35	60.85
Fortunato Crawford	$32,627,356.84	$21,246,752.11	65.12
Jessika Thornton	$1,546,512.28	$1,096,429.40	70.90
Juniper Peabody	$598,212.09	$427,563.90	71.47
Justen Cartwright	$5,569,071.96	$3,151,957.87	56.60
Keren Rose	$1,785,869.98	$1,345,506.67	75.34
Luitpold Whyman	$30,094,170.57	$16,953,680.70	56.34
Madelina Hewitt	$1,116,059.98	$783,429.50	70.20
Maggie Warren	$3,101,783.80	$2,306,084.82	74.35
Mechtilde Watts	$372,308.94	$276,584.19	74.29
Nicolle Bramble	$355,529.39	$256,042.52	72.02
Opaline Webster	$1,162,085.40	$867,929.99	74.69
Regena Wilder	$1,104,435.80	$797,771.49	72.23
Rhetta Parker	$1,156,048.92	$858,935.10	74.30

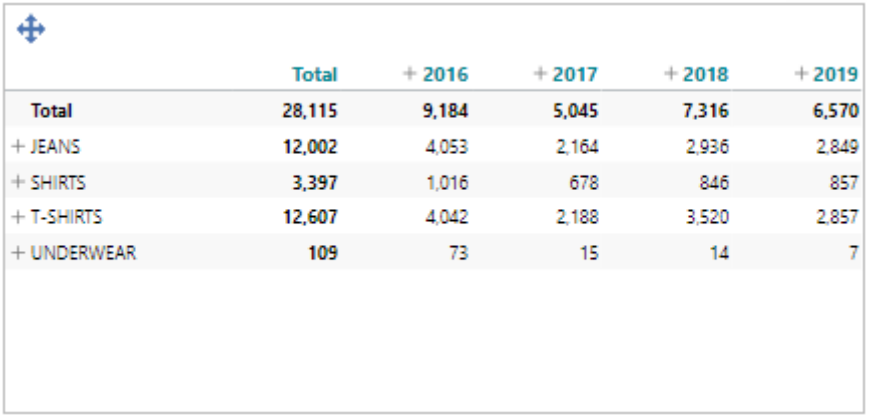
An object may be resized simply by dragging its borders, or, if more precision is needed, you can type in exact values for Width and Height as well as for X and Y position (from upper left corner).



Furthermore, with the *Autofit* option, the crosstab column widths will be stretched to make the crosstab width fit within the object box.

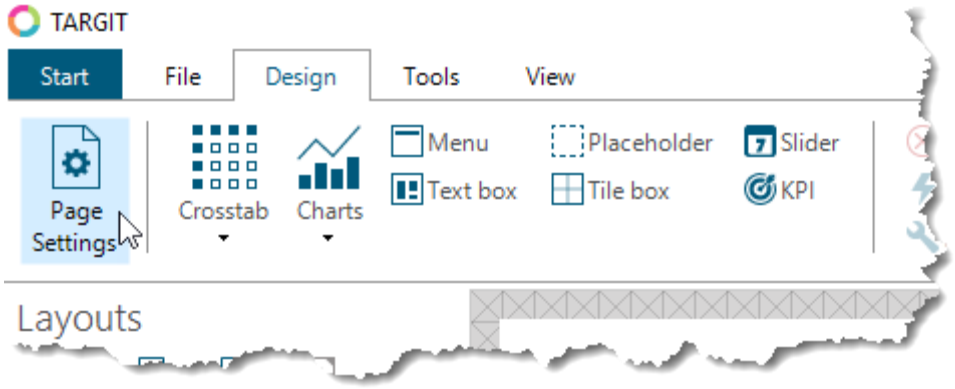


Which will then become this:

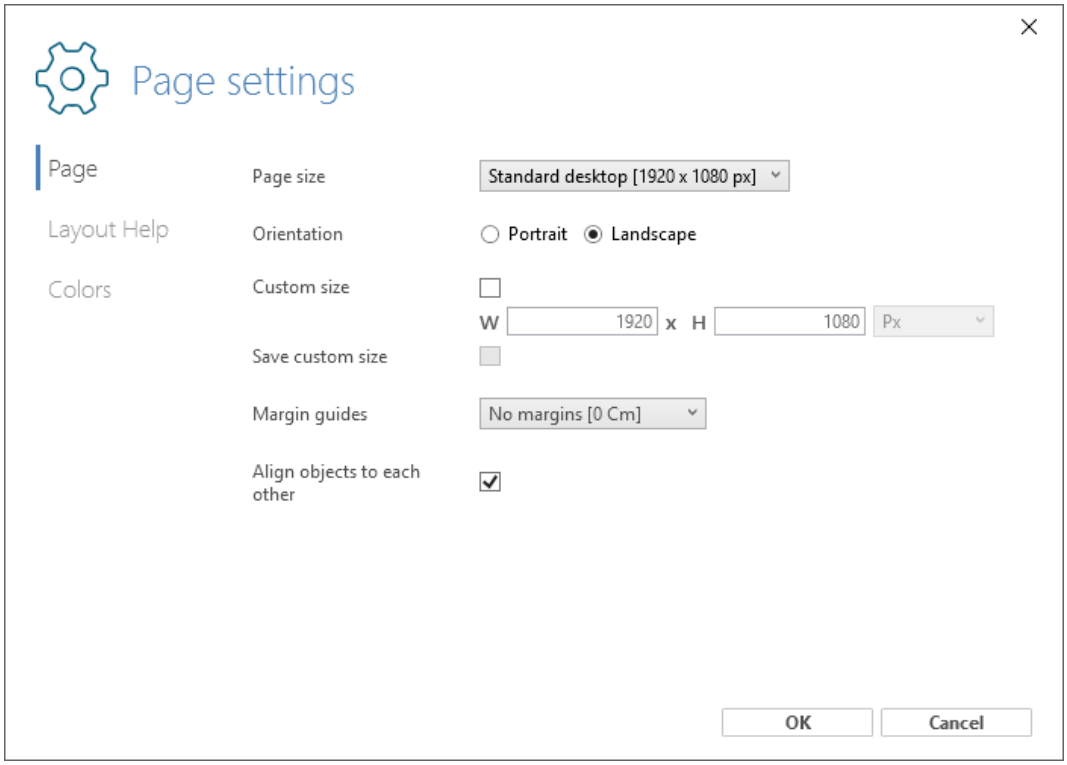


Page Settings

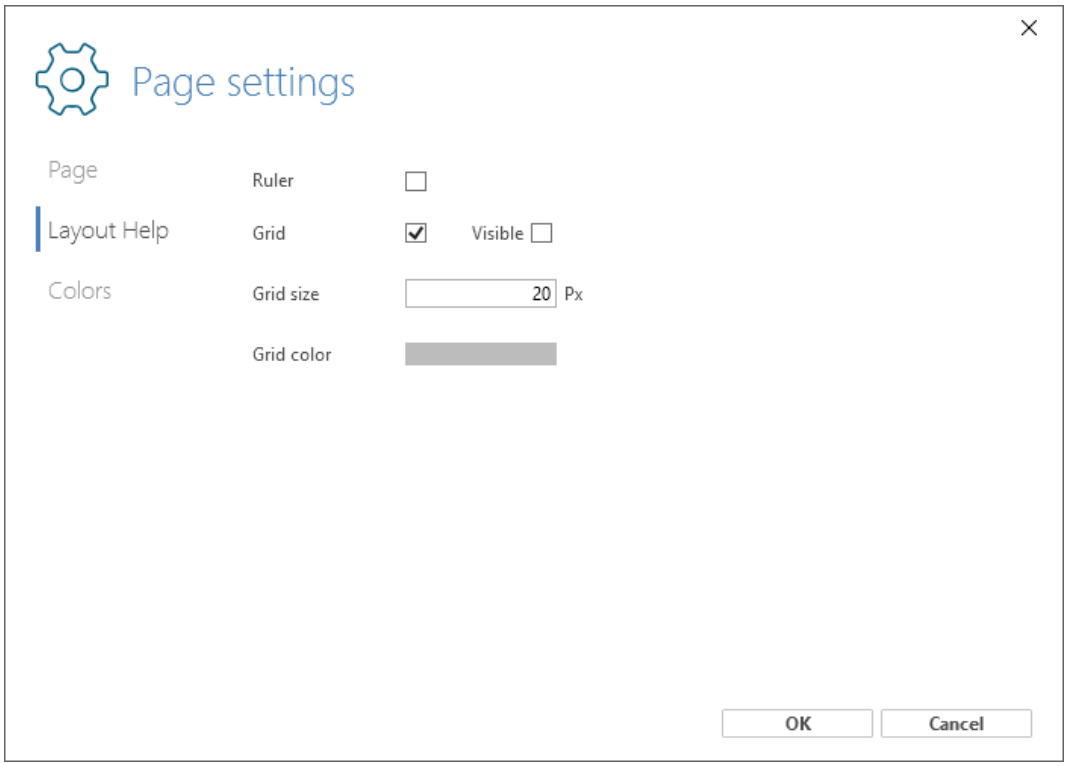
From the Design menu, you can change Page Settings.



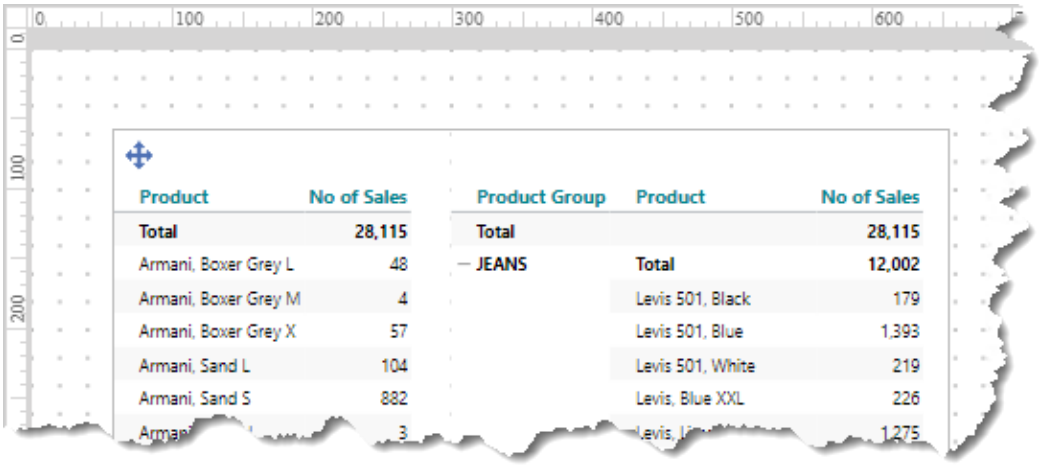
These include options about page size etc.



You also have options to improve the Layout experience.



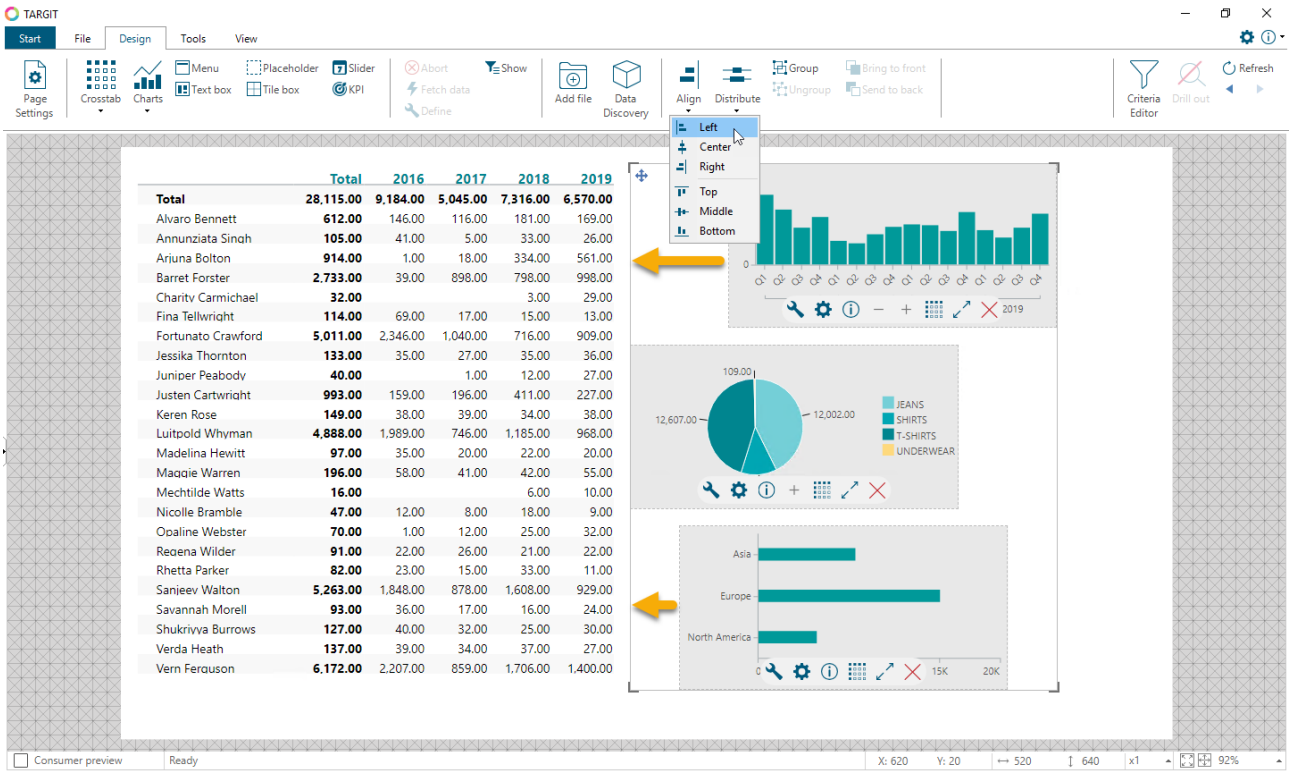
With Ruler and Grid:



Objects Alignment, Distribution, Grouping and Order

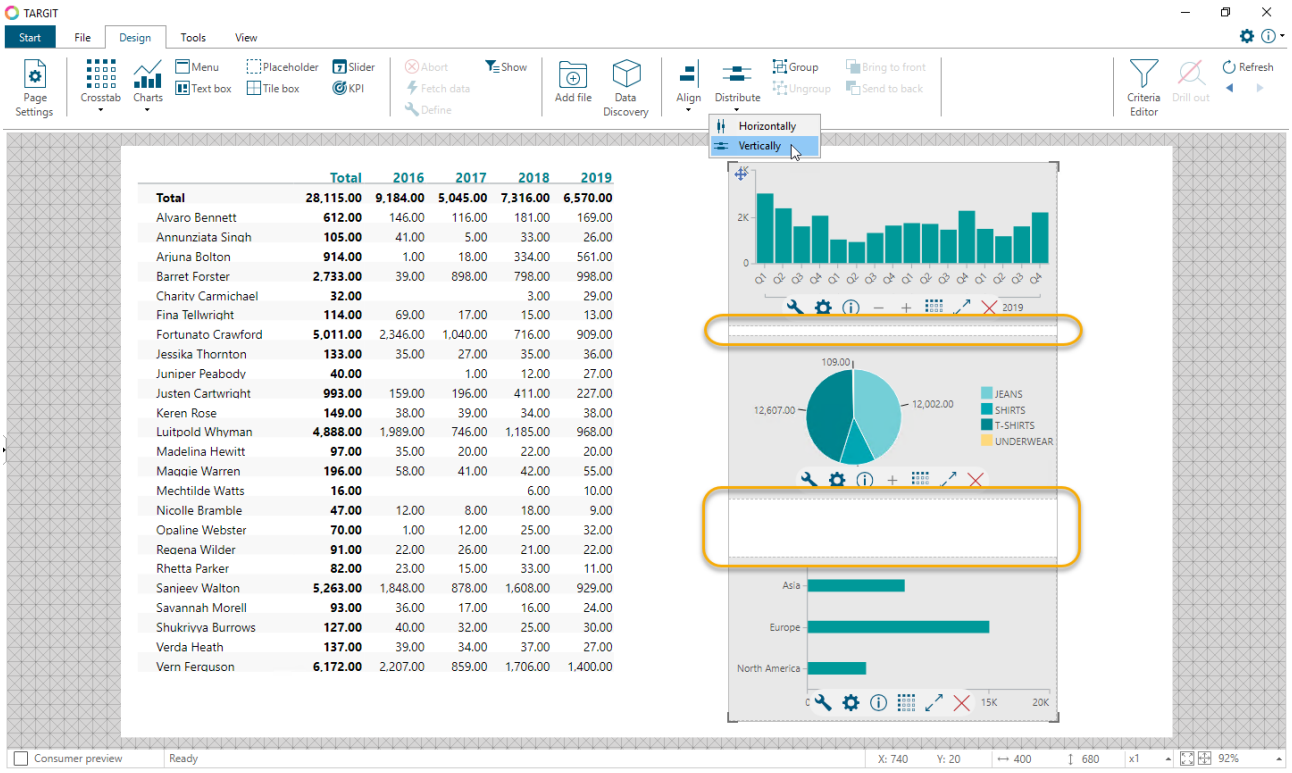
From the Design menu, you have options to align objects.

In this example, having multi-selected the three graphs, a *Left alignment* would align all three objects to the left of the multi-select container.



Likewise, a *Center alignment* would align all three objects to the center of the multi-select container, etc.

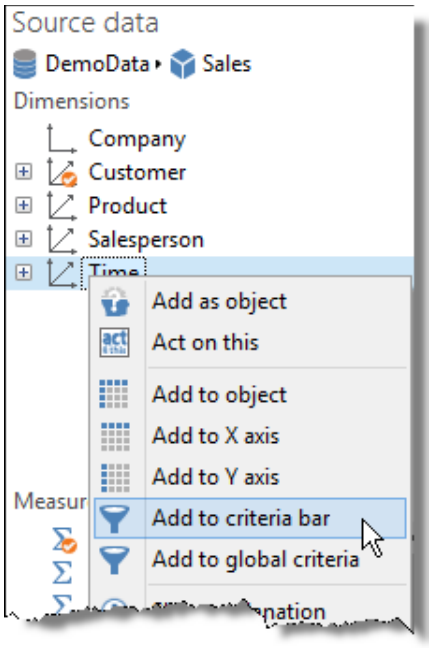
In this example, having multi-selected the three graphs, a *Distribute vertically* would adjust the spacing between the selected objects to become evenly spaced.



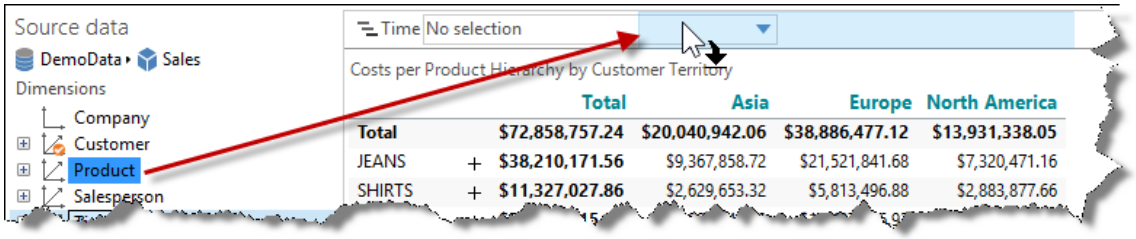
The Criteria Bar

At this point, you may have designed an analysis with maybe 3-4 objects. The objects are by default "drill down enabled" – i.e. if you click a dimension member in one object, it will apply as a filter on the other objects. This type of filters are called *Drill down criteria.*

The easiest way to work with *Global criteria* is to place some of the dimensions on a *Criteria bar* above all the objects. To add a dimension to the Criteria bar, simply right click the dimension in the Smartpad Source data and choose *Add to criteria bar*.

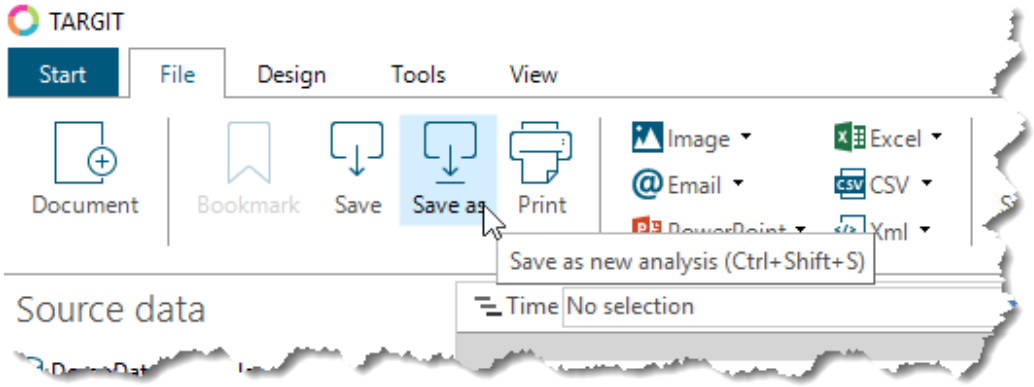


You can use the right click method to add all the dimensions you need. Alternatively, once the Criteria bar is present, you can use drag-and-drop to add further dimensions.



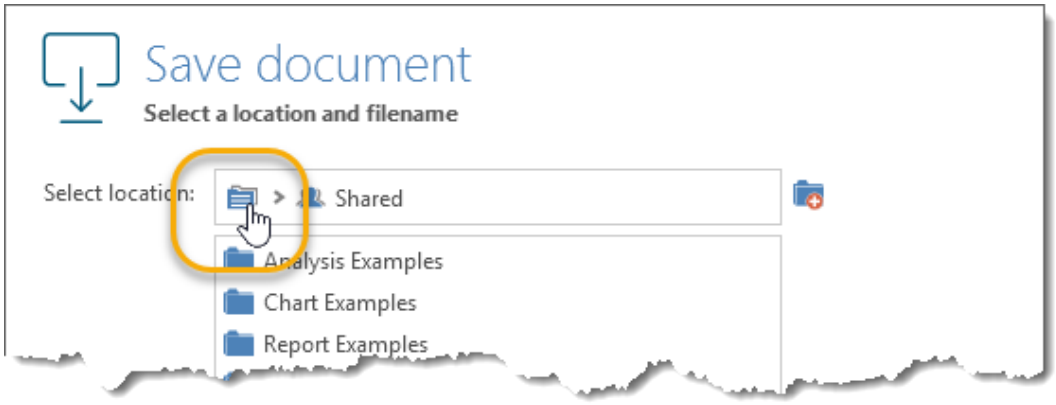
Save document

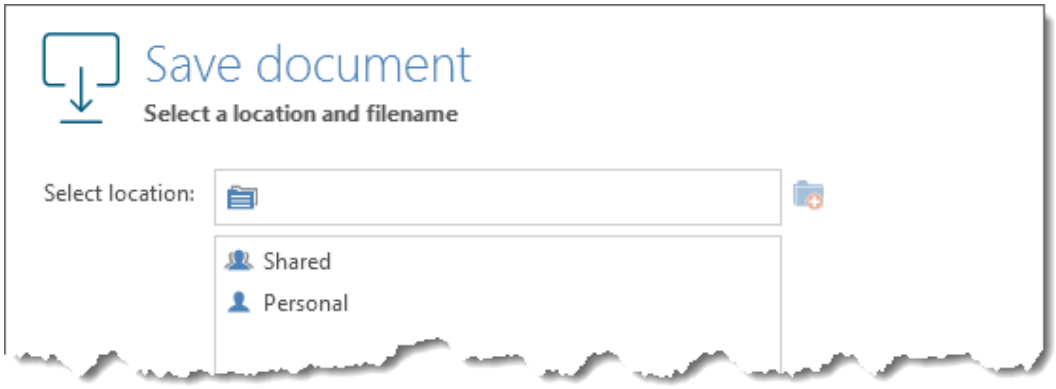
The completed analysis may now be saved for future usage.



Either choose to save this analysis as a Personal analysis (can only be opened by the user that saved it) or as a Shared analysis (can be opened by anyone within the company with access to TARGIT).

Click the "Root" folder in order to select between Personal or Shared.



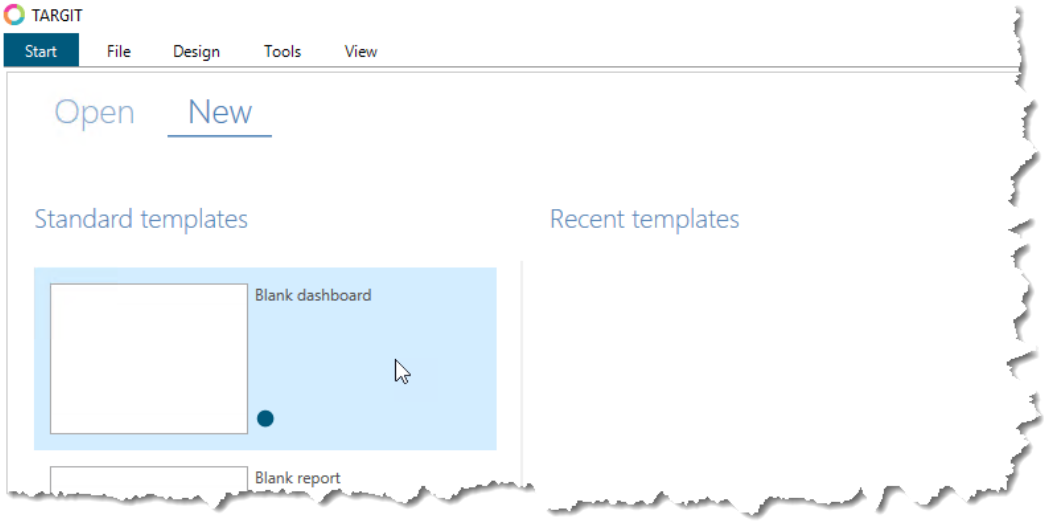


Exercises Lesson 2

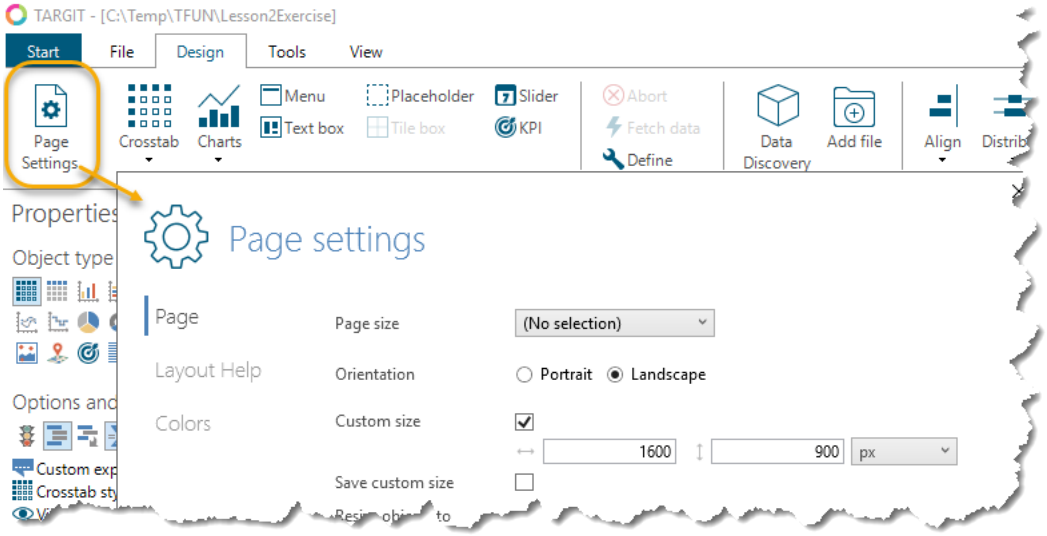
(Screenshots and exercises are based on version 2019.0 demo data. If you are working on an earlier or later version you may need to subtract or add 1 year to achieve similar results.)

Task 1

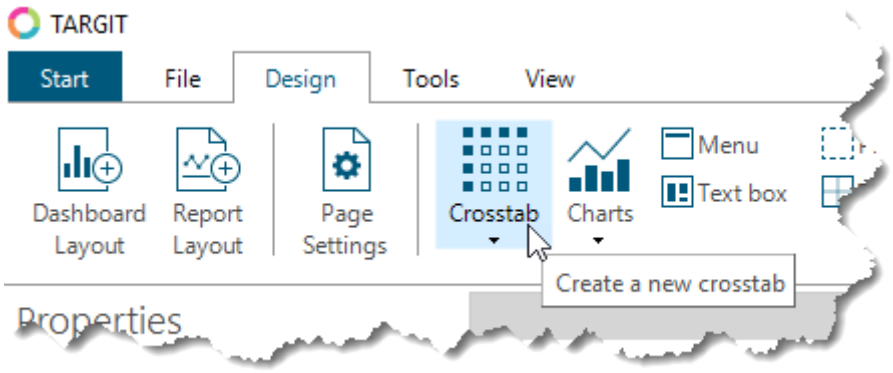
This exercise is about building a new analysis from scratch. Go to the Start page and choose New … Blank dashboard.



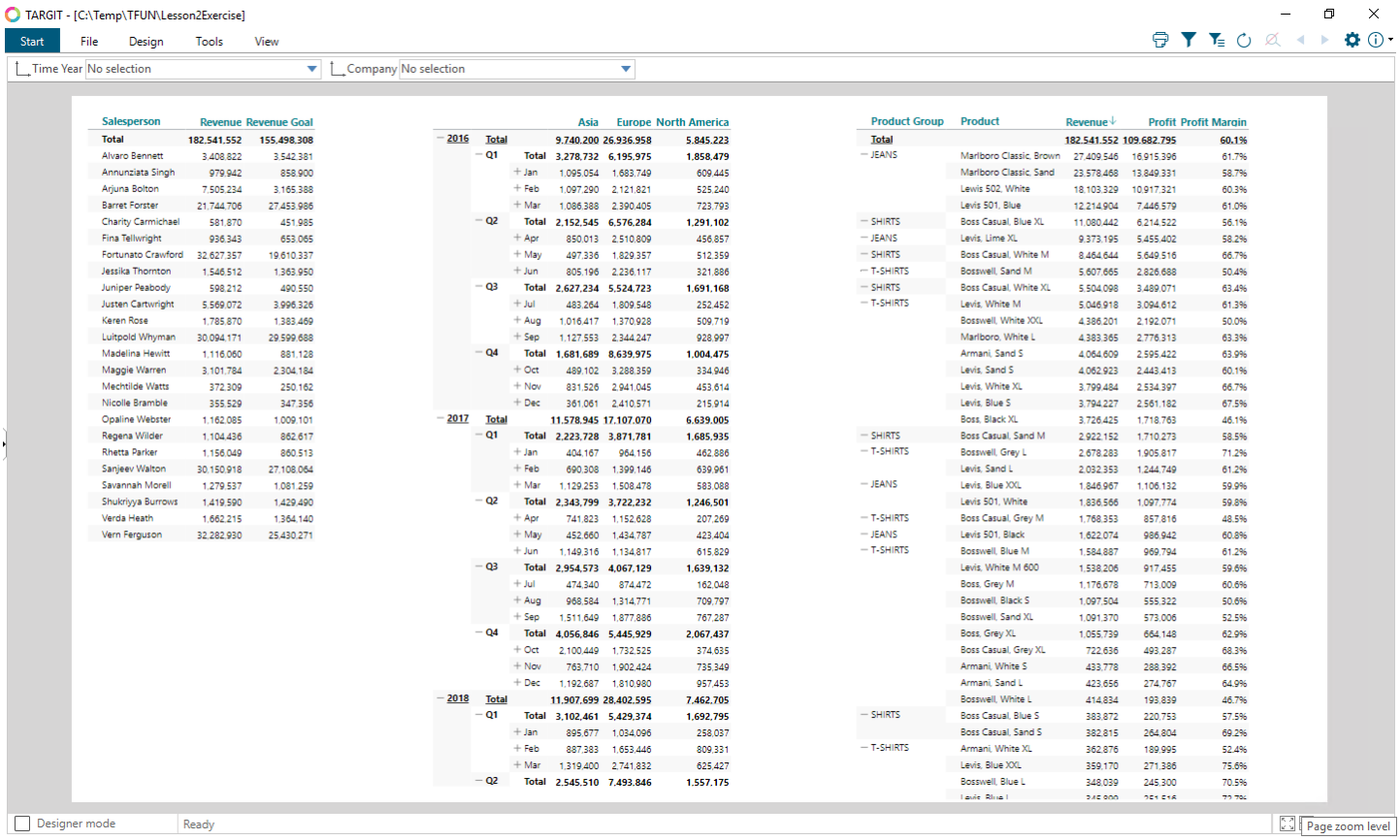
Use *Page settings* to change the page size to 1600 x 900 pixels:



And after that, add the first crosstab to the page.



Try to get the completed result to look like this, notice number formats:



Salesperson	Revenue	Revenue Goal
Total	182.541.552	155.498.308
Alvaro Bennett	3.408.822	3.542.381
Annunziata Singh	979.942	858.900
Arjuna Bolton	7.505.234	3.165.388
Barret Forster	21.744.706	27.453.986
Charity Carmichael	581.870	451.985
Fina Tellwright	936.343	653.065
Fortunato Crawford	32.627.357	19.610.337
Jessika Thornton	1.546.512	1.363.950
Juniper Peabody	598.212	490.550
Justen Cartwright	5.569.072	3.996.326
Keren Rose	1.785.870	1.383.469
Luitpold Whyman	30.094.171	29.599.688
Madelina Hewitt	1.116.060	881.128
Maggie Warren	3.101.784	2.304.184
Mechtilde Watts	372.309	250.162
Nicolle Bramble	355.529	347.356
Opaline Webster	1.162.085	1.009.101
Regena Wilder	1.104.436	862.617
Rhetta Parker	1.156.049	860.513
Sanjeev Walton	30.150.918	27.108.064
Savannah Morell	1.279.537	1.081.259
Shukriyya Burrows	1.419.590	1.429.490
Verda Heath	1.662.215	1.364.140
Vern Ferguson	32.282.930	25.430.271

		Asia	Europe	North America
2016	Total	9.740.200	26.936.958	5.845.223
Q1	Total	3.278.732	6.195.975	1.858.479
Jan		1.095.054	1.683.749	609.445
Feb		1.097.290	2.121.821	525.240
Mar		1.086.388	2.390.405	723.793
Q2	Total	2.152.545	6.576.284	1.291.102
Apr		850.013	2.510.809	456.857
May		497.336	1.829.357	512.359
Jun		805.196	2.236.117	321.886
Q3	Total	2.627.234	5.524.723	1.691.168
Jul		483.264	1.809.548	252.452
Aug		1.016.417	1.370.928	509.719
Sep		1.127.553	2.344.247	928.997
Q4	Total	1.681.689	8.639.975	1.004.475
Oct		489.102	3.288.359	334.946
Nov		831.526	2.941.045	453.614
Dec		361.061	2.410.571	215.914
2017	Total	11.578.945	17.107.070	6.639.005
Q1	Total	2.223.728	3.871.781	1.685.935
Jan		404.167	964.156	462.886
Feb		690.308	1.399.146	639.961
Mar		1.129.253	1.508.478	583.088
Q2	Total	2.343.799	3.722.232	1.246.501
Apr		741.823	1.152.628	207.269
May		452.660	1.434.787	423.404
Jun		1.149.316	1.134.817	615.829
Q3	Total	2.954.573	4.067.129	1.639.132
Jul		474.340	874.472	162.048
Aug		968.584	1.314.771	709.797
Sep		1.511.649	1.877.886	767.287
Q4	Total	4.056.846	5.445.929	2.067.437
Oct		2.100.449	1.732.525	374.635
Nov		763.710	1.902.424	735.349
Dec		1.192.687	1.810.980	957.453
2018	Total	11.907.699	28.402.595	7.462.705
Q1	Total	3.102.461	5.429.374	1.692.795
Jan		895.677	1.034.096	258.037
Feb		887.383	1.653.446	809.331
Mar		1.319.400	2.741.832	625.427
Q2	Total	2.545.510	7.493.846	1.557.175

Product Group	Product	Revenue	Profit	Profit Margin
Total		182.541.552	109.682.795	60,1%
JEANS	Marlboro Classic, Brown	27.409.546	16.915.396	61,7%
	Marlboro Classic, Sand	23.578.468	13.849.331	58,7%
	Lewis 502, White	18.103.329	10.917.321	60,3%
	Levis 501, Blue	12.214.904	7.446.579	61,0%
SHIRTS	Boss Casual, Blue XL	11.080.442	6.214.522	56,1%
JEANS	Levis, Lime XL	9.373.195	5.455.402	58,2%
SHIRTS	Boss Casual, White M	8.464.644	5.649.516	66,7%
T-SHIRTS	Bosswell, Sand M	5.607.665	2.826.688	50,4%
SHIRTS	Boss Casual, White XL	5.504.098	3.489.071	63,4%
T-SHIRTS	Levis, White M	5.046.918	3.094.612	61,3%
	Bosswell, White XXL	4.386.201	2.192.071	50,0%
	Marlboro, White L	4.383.365	2.776.313	63,3%
	Armani, Sand S	4.064.609	2.595.422	63,9%
	Levis, Sand S	4.062.923	2.443.413	60,1%
	Levis, White XL	3.799.484	2.534.397	66,7%
	Levis, Blue S	3.794.227	2.561.182	67,5%
	Boss, Black XL	3.726.425	1.718.763	46,1%
SHIRTS	Boss Casual, Sand M	2.922.152	1.710.273	58,5%
T-SHIRTS	Bosswell, Grey L	2.678.283	1.905.817	71,2%
	Levis, Sand L	2.032.353	1.244.749	61,2%
JEANS	Levis, Blue XXL	1.846.967	1.106.132	59,9%
	Levis 501, White	1.836.566	1.097.774	59,8%
T-SHIRTS	Boss Casual, Grey M	1.768.353	857.816	48,5%
JEANS	Levis 501, Black	1.622.074	986.942	60,8%
T-SHIRTS	Bosswell, Blue M	1.584.887	969.794	61,2%
	Levis, White M 600	1.538.206	917.455	59,6%
	Boss, Grey M	1.176.678	713.009	60,6%
	Bosswell, Black S	1.097.504	555.322	50,6%
	Bosswell, Sand XL	1.091.370	573.006	52,5%
	Boss, Grey XL	1.055.739	664.148	62,9%
	Boss Casual, Grey XL	722.636	493.287	68,3%
	Armani, White S	433.778	288.392	66,5%
	Armani, Sand L	423.656	274.767	64,9%
	Bosswell, White L	414.834	193.839	46,7%
SHIRTS	Boss Casual, Blue S	383.872	220.753	57,5%
	Boss Casual, Sand S	382.815	264.804	69,2%
T-SHIRTS	Armani, White XL	362.876	189.995	52,4%
	Levis, Blue XXL	359.170	271.386	75,6%
	Bosswell, Blue L	348.039	245.300	70,5%

Save the analysis as **Lesson 2 Three Crosstabs Analysis**.

The analysis is designed over three crosstabs, all from **Sales** cube:

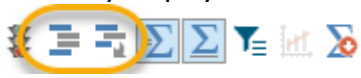
Crosstab 1: **Revenue** and **Revenue Goal** per **Salesperson (attribute)**.

Crosstab 2: **Revenue** per **Time YQMD (hierarchy)** and by **Customer Territory (attribute)**.

- Totals must be hidden; Subtotals must be visible.

Crosstab 3: **Revenue, Profit** and **Profit Margin** per **Product (hierarchy)**.

- Sort data in descending order by the Revenue column.
- You may need to change behavior for "Hierarchical collation" and "Hierarchy display".



Additionally, enable the **criteria bar** with these two dimensions:

- **Time Year**
- **Company**

Task 2

Use the analysis to answer these questions:

Which Salesperson has registered the lowest revenue for **Company = Casual Clothing Retail** in **North America** in **2017**?

Answer, Salesperson:

_____

Furthermore, which Products are included in this revenue?

Answer, Products:

_____

Lesson 3: Graphical objects

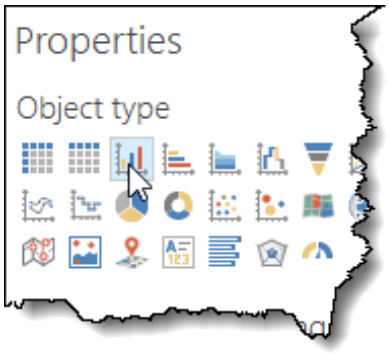
You can easily change an object from one object type, e.g. a crosstab, to another object type. E.g., we might have a crosstab like this:

Revenue per Product Hierarchy by Customer Territory

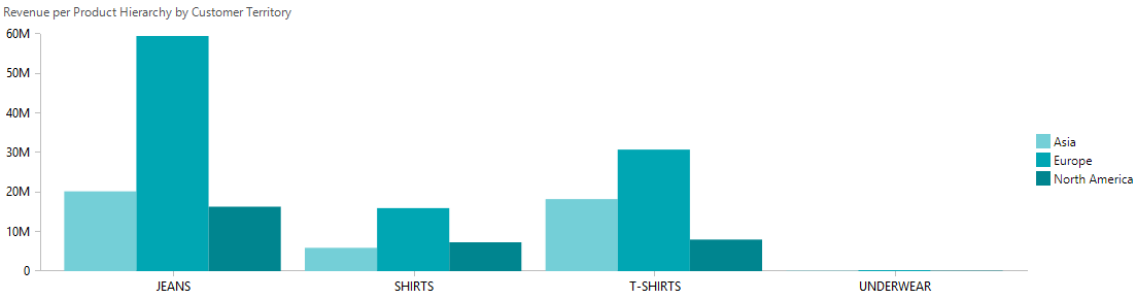
		Total	Asia	Europe	North America
Total		**$182,541,552.13**	**$44,397,608.43**	**$106,447,336.78**	**$31,696,606.91**
JEANS	+	**$95,985,048.79**	$20,177,380.14	$59,483,070.22	$16,324,598.42
SHIRTS	+	**$29,135,231.01**	$5,898,649.03	$15,939,789.76	$7,296,792.22
T-SHIRTS	+	**$56,980,758.96**	$18,230,100.69	$30,765,884.40	$7,984,773.87
UNDERWEAR	+	**$440,513.37**	$91,478.57	$258,592.40	$90,442.40

To change the object type of e.g. the crosstab we have been working on so far, we will have to move to Smartpad Properties where, at the top, we can select from a list of available object types.

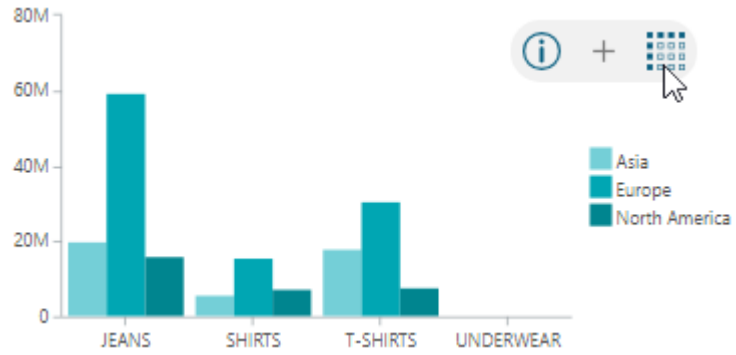
In this case, we will pick a bar chart.



In this way, data will now be presented in the bar chart graphical format.



Notice that any graphical object is in fact based upon a crosstab and that you can toggle between these two presentation forms by clicking the "Toggle chart or data" in the top right corner.



	Total	Asia	Eu	a
Total	**$182,541,552.13**	**$44,397,608.43**	**$106,447,336.78**	**$31,696,606.91**
+ JEANS	**$95,985,048.79**	$20,177,380.14	$59,483,070.22	$16,324,598.42
+ SHIRTS	**$29,135,231.01**	$5,898,649.03	$15,939,789.76	$7,296,792.22
+ T-SHIRTS	**$56,980,758.96**	$18,230,100.69	$30,765,884.40	$7,984,773.87
+ UNDERWEAR	**$440,513.37**	$91,478.57	$258,592.40	$90,442.40

Formatting graphical objects

When working with graphical objects you will see additional and different formatting options than we had with just crosstabs. Furthermore, different graphical object types may have slightly different formatting options.

The following example will be based on a crosstab where we are looking at Revenue, Profit and Profit Margin with Time.

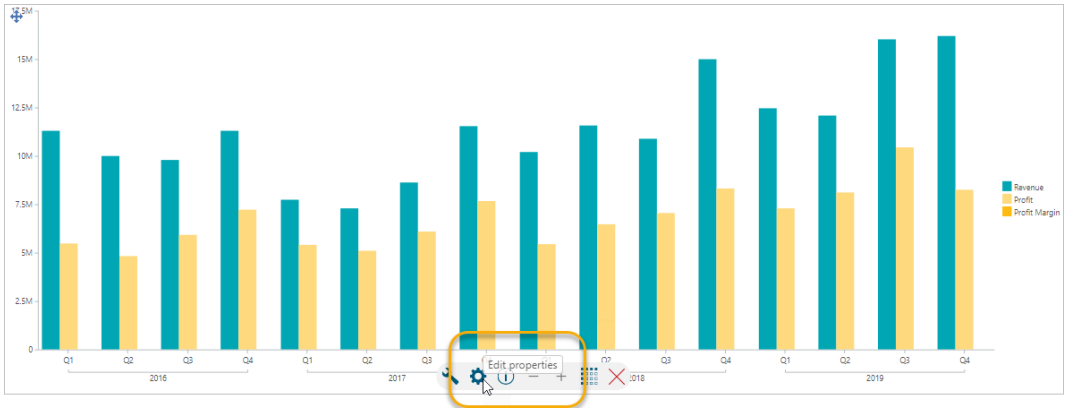
Year	Quarter	Revenue	Profit	Profit Margin
Total		**$182,541,552.13**	**$109,682,794.89**	**60.09**
− **2016**	**Total**	**$42,522,381.43**	**$23,571,783.83**	**55.43**
	+ Q1	$11,333,185.93	$5,507,121.03	48.59
	+ Q2	$10,019,931.25	$4,849,226.70	48.40
	+ Q3	$9,843,125.44	$5,961,398.78	60.56
	+ Q4	$11,326,138.82	$7,254,037.33	64.05
− **2017**	**Total**	**$35,325,020.66**	**$24,442,376.68**	**69.19**
	+ Q1	$7,781,443.44	$5,462,263.86	70.20
	+ Q2	$7,312,531.39	$5,125,859.83	70.10

We will turn this crosstab into a column chart and immediately we can see that we have a typical problem with value scales: The Profit Margin columns are simply too small to be visible together with the Revenue and Profit columns.

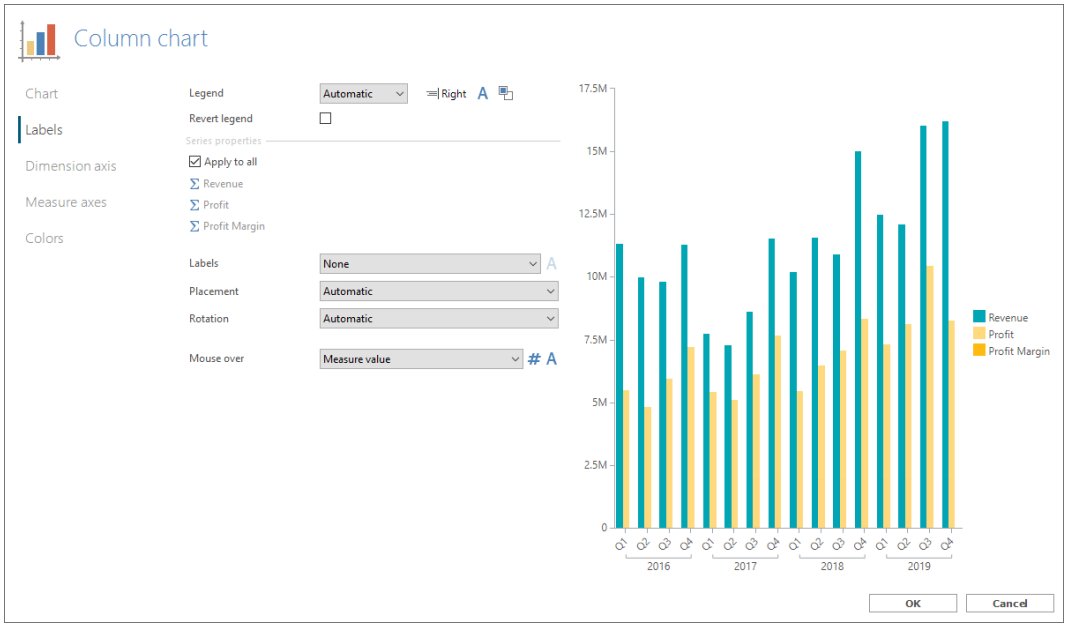
The solution is to work with a secondary measure axis on the right hand side of the object – and then let Profit Margin work on the new right axis, while Revenue and Profit stays on the left axis.

While we try to implement this solution, we will get by many of the other formatting options related to graphs.

At first, we will need to start working with properties for this chart.

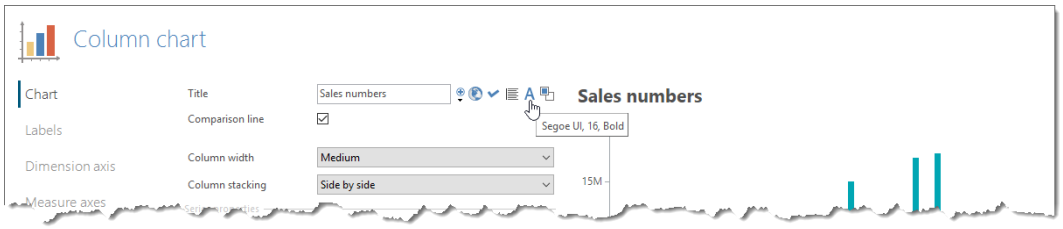


This will open the Chart dialogue:

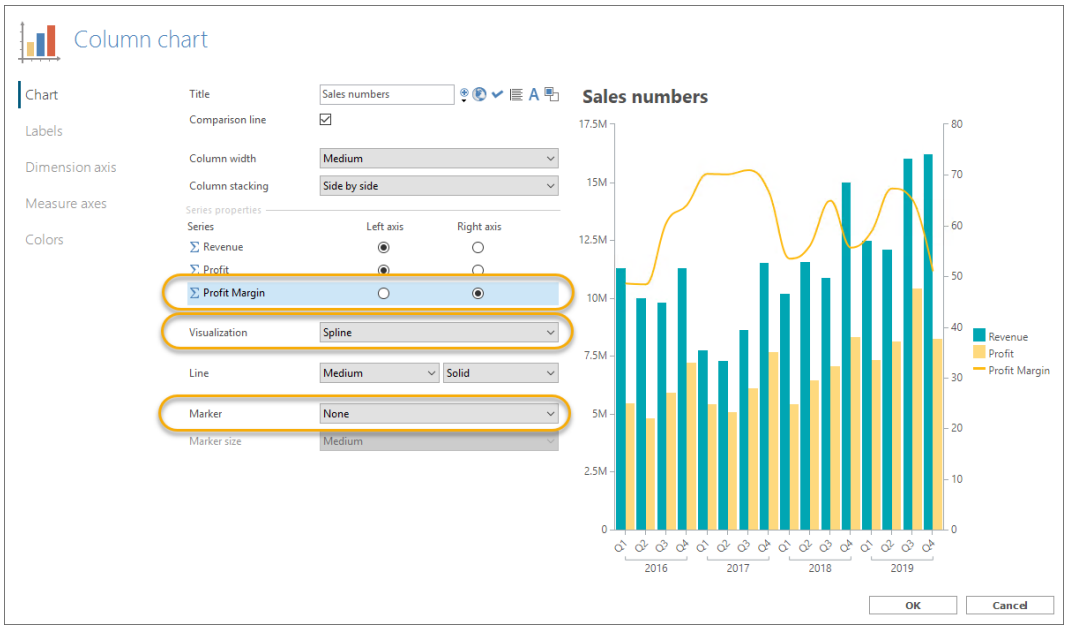


Dialogues for other graph types will have more or less the same options.

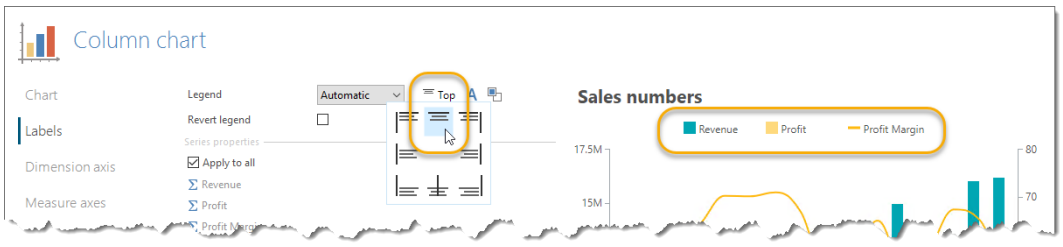
Starting from the top, the Chart settings, you can add a title to your graph. The title can also be formatted via the "A" button.



A bit further down on Chart settings tab, you can work with *series* and their individual visualization.

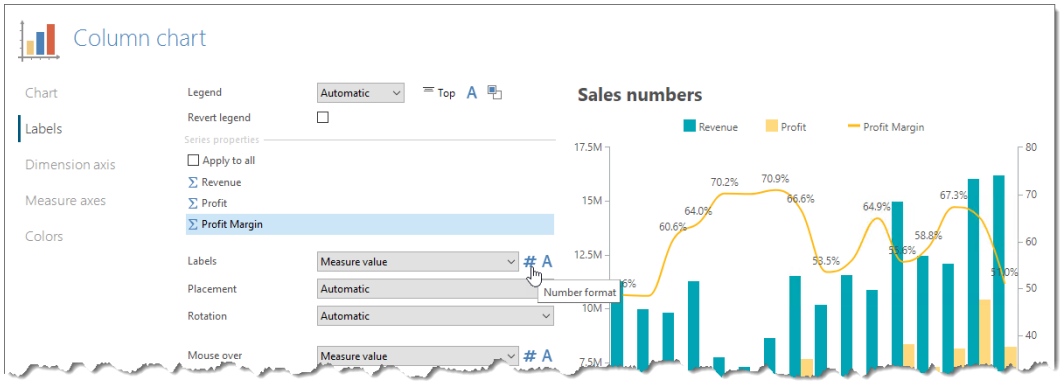


On the Labels settings tab, the first thing is related to the Legend. The Legend will by default be placed to the right, but you can move it to any other location around the graph itself.



When you start working with labels, you should consider if you need the same label for all series of data – in this example, for three series of data.

In the screenshot below, Profit Margin has been selected as the only one to receive a Label (Measure value, in this case). Furthermore, the number format of this label has been modified with the **#** button.

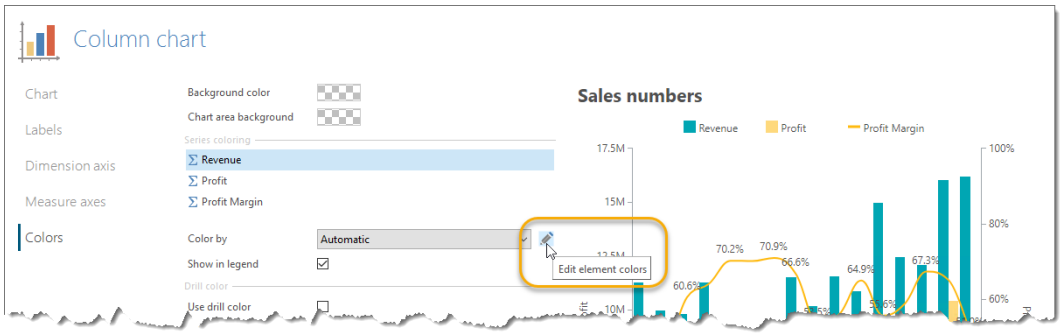


In our current scenario, the *Measure axis* tab is quite important as well.

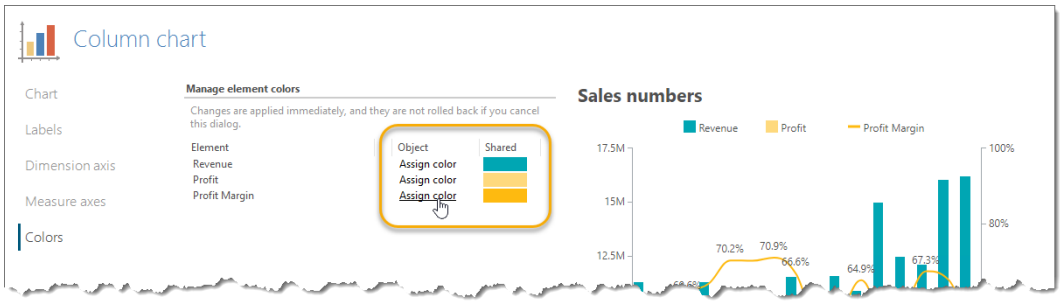
Here, we will change settings for:

- Title
- Label number format
- Custom Maximum (remember to apply with the ✓ button).

Finally, we may look into colors. Colors can be changed in many ways, but an easy way to control the current colors is to click the pencil button on this tab.

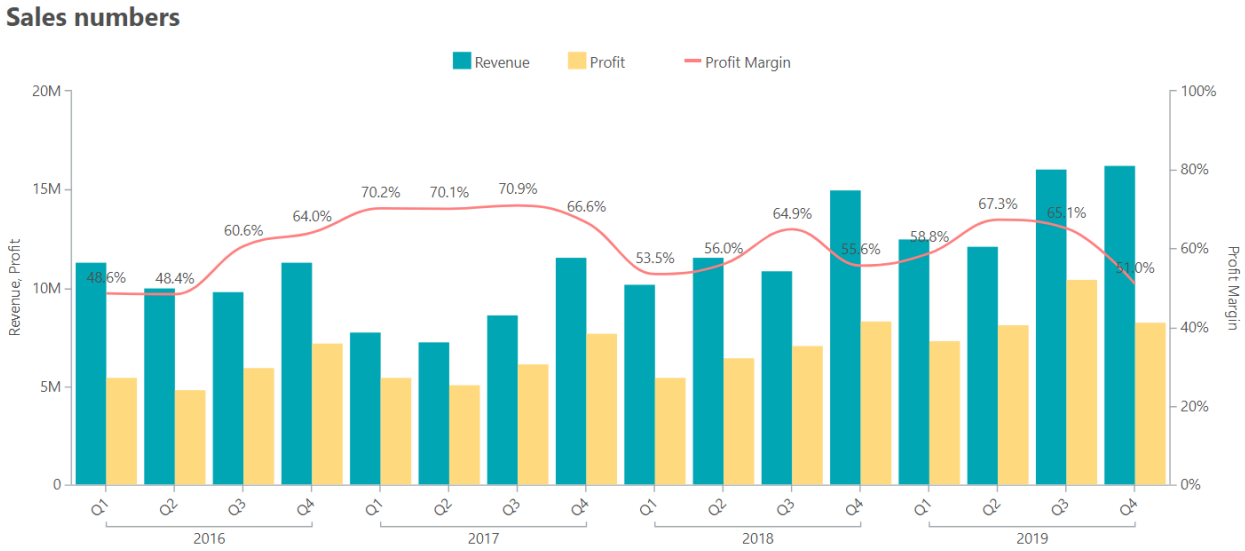


To change the colors in the current object, choose the *Assign color* option:



Warning: If you change colors via the *Shared* color option, you will change color not just for the current object, but for all objects with that measure in all analyses created by all users. In other words, the *Shared* color option has wide consequences and should only be used when you actually want a measure to change color across the entire TARGIT solution.

The final result may look like this:



Shortcuts to create new objects

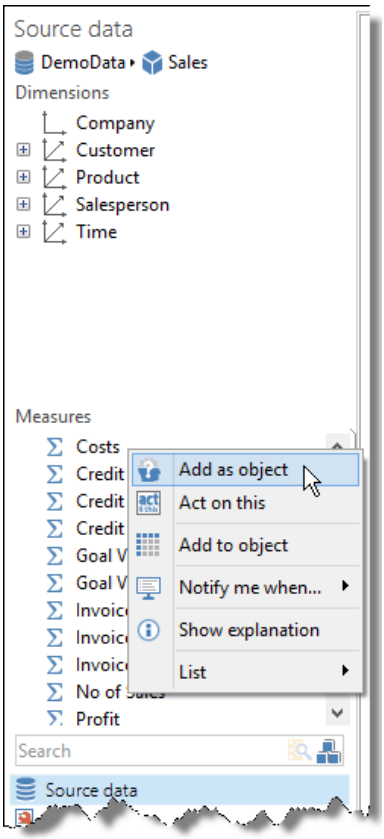
You can define the content of an object by using the manual method, as described in the last couple of lessons.

Alternatively, you can use some of the automated or semi-automated methods offered by that TARGIT client to speed up things on certain occasions.

One of these methods is to right click a measure or a dimension in the Source data tab, and then use the option *Add as object*.

Add as object works in this way:

- **Measure**: When adding a measure, one dimension will be automatically attached to the same object. The choice of dimension and presentation type will be based on *best practice* principles.
- **Dimension**: When adding a dimension, the most recently used measure will be automatically added. The choice of presentation type (crosstab or chart) will be based on *best practice* principles.



Exercises Lesson 3

(Screenshots and exercises are based on version 2019.0 demo data. If you are working on an earlier or later version you may need to add or subtract 1 year to achieve similar results.)

Task 1

Create a new Profit analysis as the one shown below. All data are based on the **Sales Cube**.

Use Page settings: 1600 x 900, landscape.

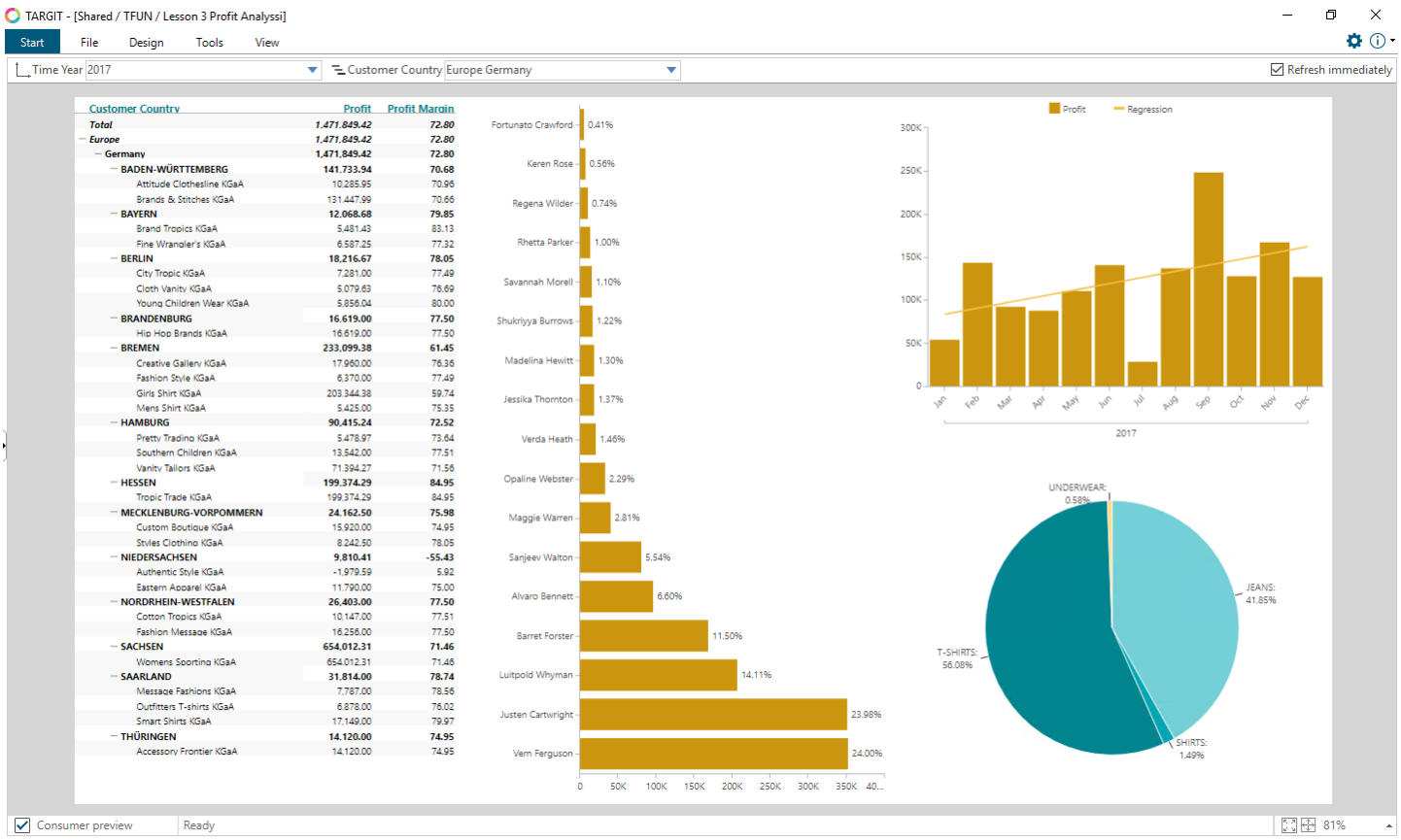
Objects:

- **Crosstab**: Profit and Profit Margin per Customer (hierarchy).
- **Bar chart**: Profit per Salesperson (attribute).
- **Column chart**: Profit per Month (hierarchy)
- **Pie chart**: Profit per Product Group (hierarchy)

Notice that data is filtered by global criteria (from the Criteria Bar):

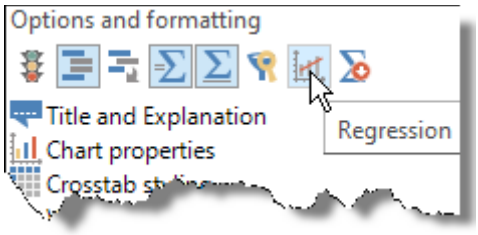
- Time = **2017**
- Customer Country = **Europe, Germany**

Tip: Please read all the useful tips on the following pages.

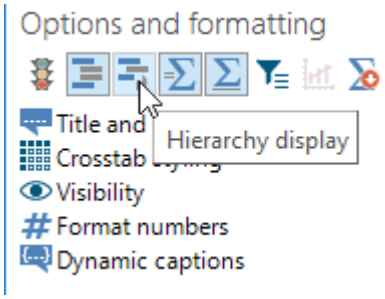


Save the analysis as **Lesson 3 Profit Analysis**.

Tip: The *Regression* line in the vertical bar chart is a toggle option from the *Properties* Smartpad:



Tip: Use *Hierarchy display* from the Properties tab to get a more compact presentation of data in crosstabs with multi-level hierarchies:



Task 2

Use the analysis to answer these questions:

Focus on data for **North America** in **2018**. Which Salesperson has the highest Profit for **T-SHIRTS**?

Answer, Salesperson:

_____

What is the general monthly trend for this Salesperson (T-SHIRTS, North America, 2018)?

Answer, trend:

_____

Lesson 4: Working with Layouts

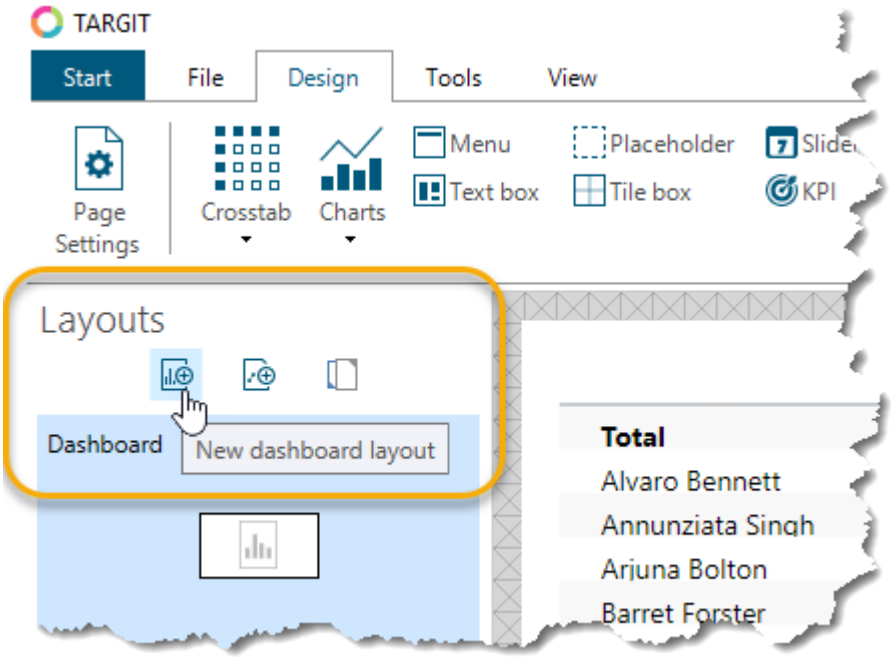
When you create something new in TARGIT, you actually create a number of new things:

- **Documents**. A *Document* is the general term used when you need to create something new in TARGIT. Also, when you open something in TARGIT, you open a *document*. A document can be one of many types, e.g. an Analysis, a Dashboard, a Report etc. – or a mix of these types.
- **Layouts**. A Document may contain a number of different *Layouts*. You may start out by designing an analysis with a layout suitable for landscape mode on PC desktops. Next, in the same document, using the same objects, you could add a new layout suitable for e.g. portrait mode on a Tablet.

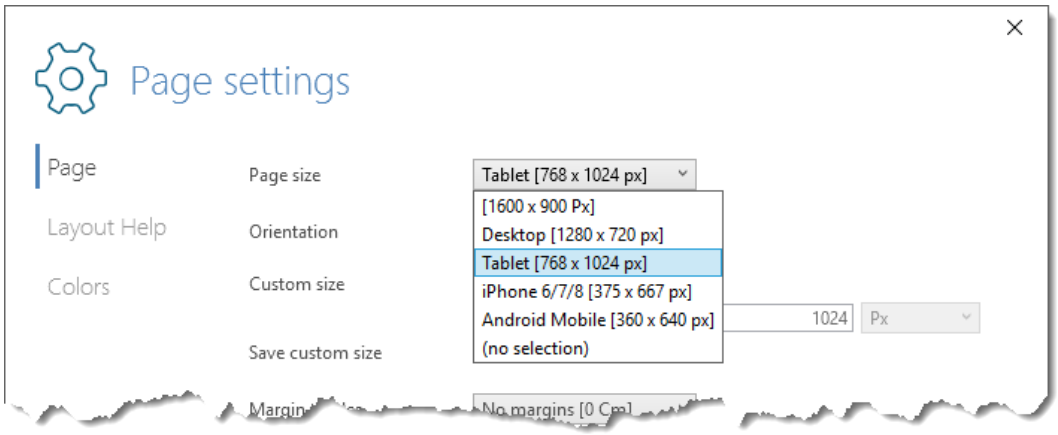
To put the above into context, if you think about a traditional TARGIT analysis, it would be a *single Document* with a *single Layout*.

When you create a new document in TARGIT, often, you will initially design this with a default *Dashboard Layout*.

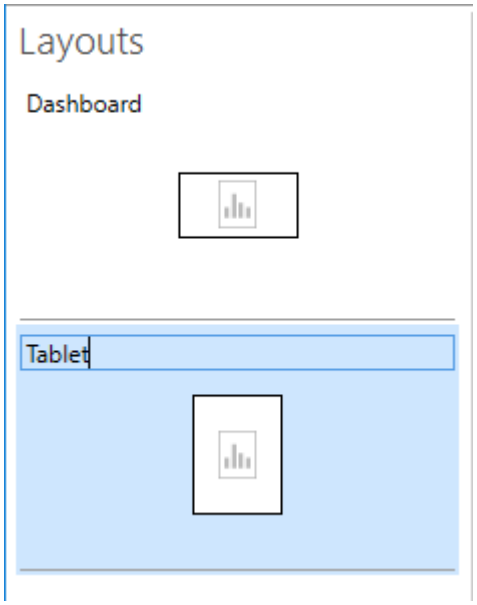
Go to the *Layouts* tab to add an extra Dashboard Layout to your existing document:



When you add a new layout, you also start out with a single page layout. The new layout page should probably have page settings different from the default page settings. You can choose from a number of different pre-defined page sizes, or you can create and save your own custom page size.



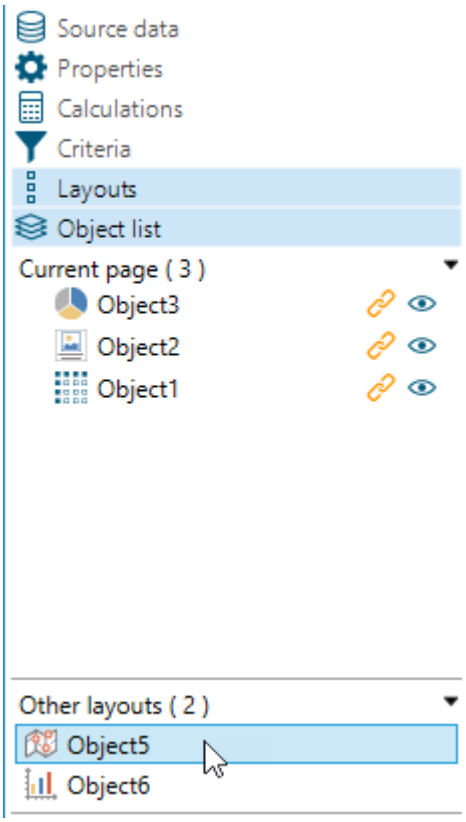
Add a proper name to the new layout, from the Layouts tab in the Smartpad:



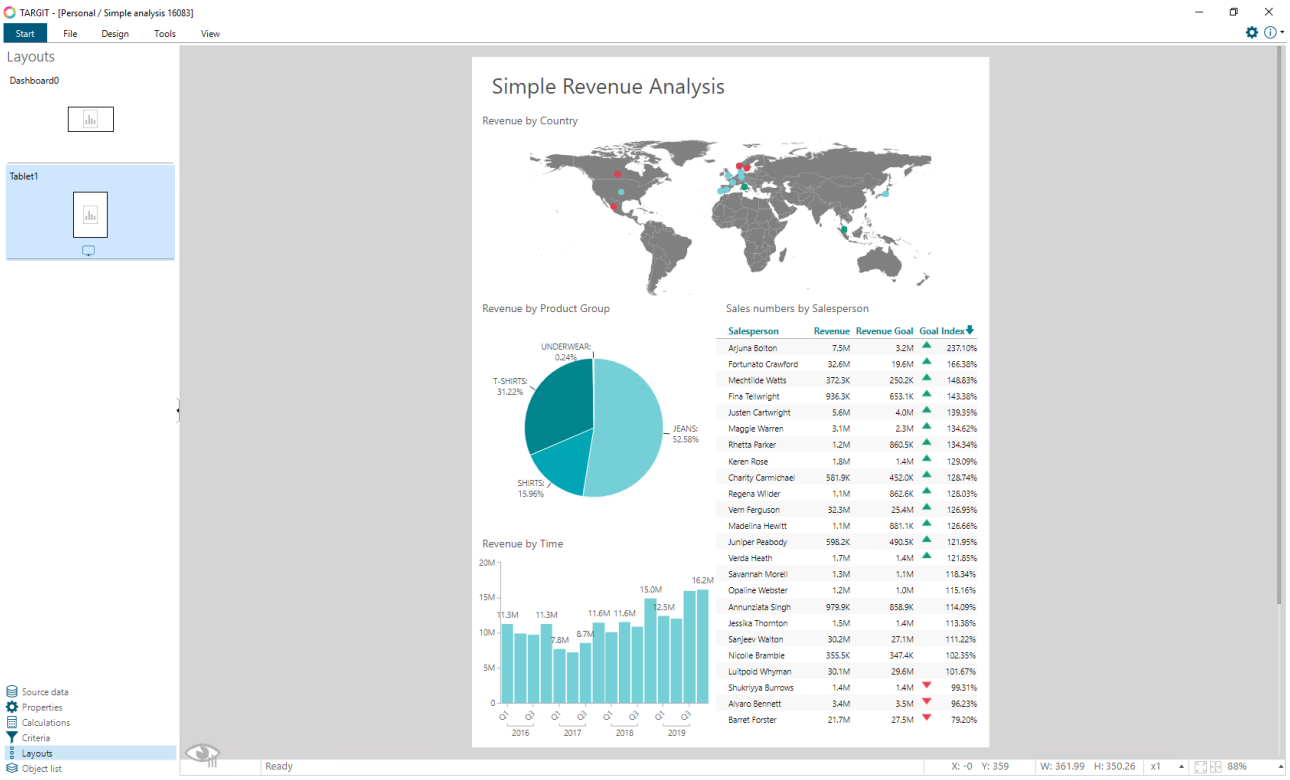
When working with a multi layout document, you will also want to work with the *Object list* in the Smartpad.

Objects that have been designed in one layout, are automatically available for all other layouts. Initially, no objects have been added to the new, blank layout.

To add an object to the new layout, go to the *Other layouts* section in your Object list. Now, **double click** the object you would like to add to the current layout.



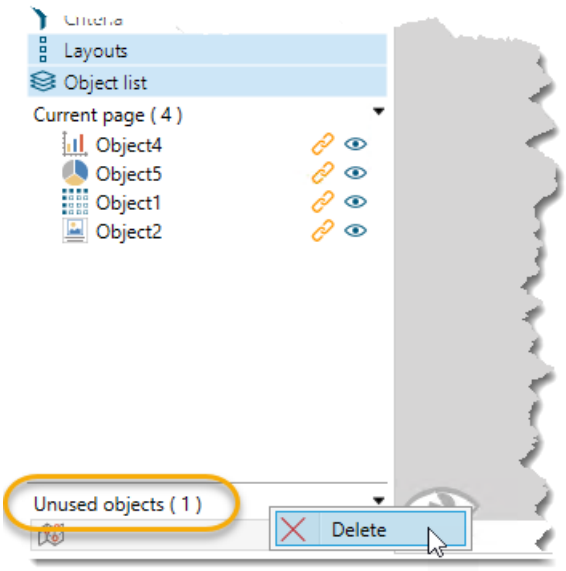
And now we may have a document with two layouts:



You can remove an object from a page. Click the red cross to remove it from the page:

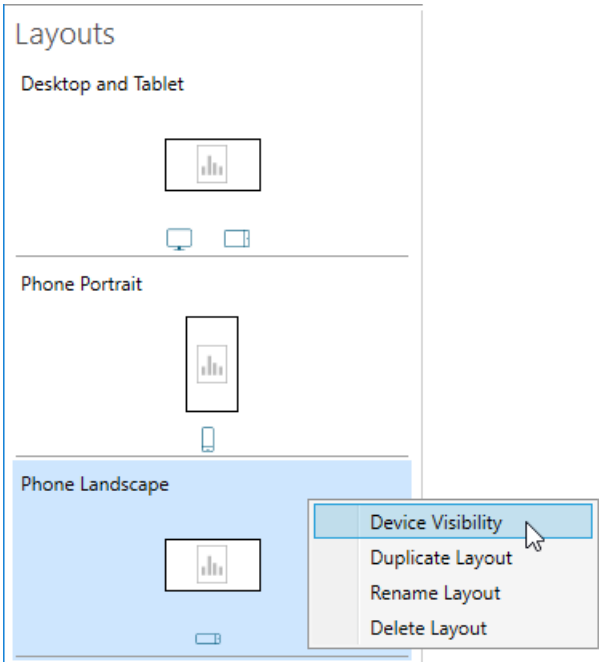
However, removing an object from a page, does not remove it from the document – you may want still want to use the object in another layout.

Only if an object is removed from all pages in all layouts, you would probably want to remove it completely from the document. Such an object will appear in the *Unused objects* list and may be completely deleted by right clicking the object in this list.



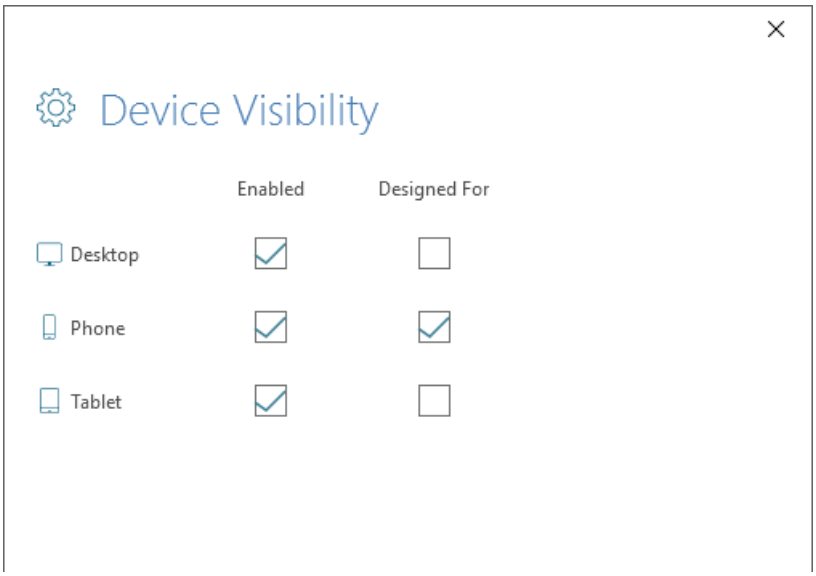
Device Visibility

In addition to designing individual dashboards in different layouts, you can also control settings for how these layout should work on different devices.



With the *Device Visibility* dialog, you can, with the *Enabled* option, control whether a Layout should be accessible at all for a specific device.

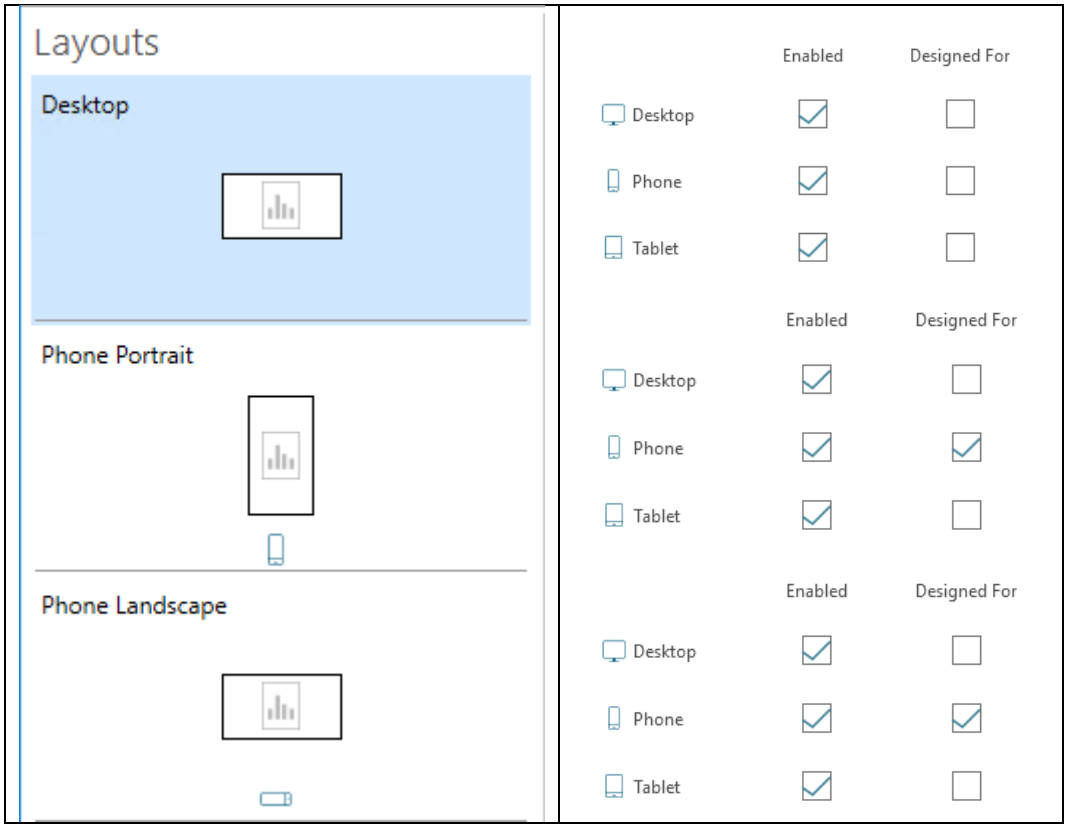
Furthermore, you can, with the *Designed for* option, control if a Layout should become the preferred layout for a specific device type.



TARGIT will use a set of rules to detect which Layout it should open by default on a specific device type:

1. TARGIT will open the first Layout (reading from top of list) that is **Enabled**, **Designed for** and matches the **Orientation** of the current device.
2. If rule 1 fails, TARGIT will open the first Layout (reading from top of list) that is **Enabled** and matches the **Orientation** of the current device.
3. If rule 1 and 2 fails, TARGIT will open the first Layout (reading from top of list) that is **Enabled** for the current device.

As an example, let's look at these Layouts and Device Visibility options:



- A **Desktop client** will by default open the first Layout (Desktop) – since this is the first layout that is enabled for Desktop, and no other Layouts have been specifically designed for Desktops and orientation is irrelevant to Desktops.
- A **Phone client in portrait orientation** will by default open the second layout (Phone Portrait) – since this is the first layout that has been enabled for Phones and specifically designed for Phones and matches the portrait mode.
- If you turn your **Phone to landscape orientation,** it will open the third layout (Phone Landscape) – since this is the first layout that has been

enabled for Phones and specifically designed for Phones and matches landscape mode.

- A **Tablet client in portrait orientation** will by default open the second layout (Phone Portrait) – since this is the first layout that has been enabled for Tablets and matches the portrait mode.
- If you turn your **Tablet to landscape orientation,** it will open the first layout (Desktop) – since this is the first layout that has been enabled for Tablets and matches landscape mode.

Exercises Lesson 4

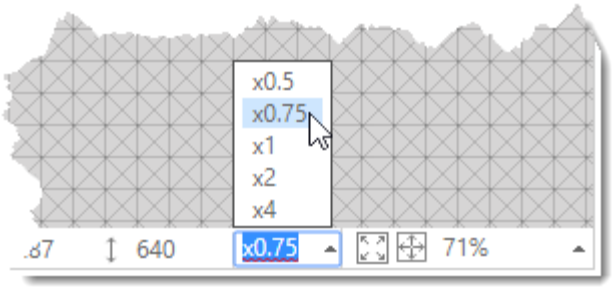
(Screenshots and exercises are based on version 2019.0 demo data. If you are working on an earlier or later version you may need to add or subtract 1 year to achieve similar results.)

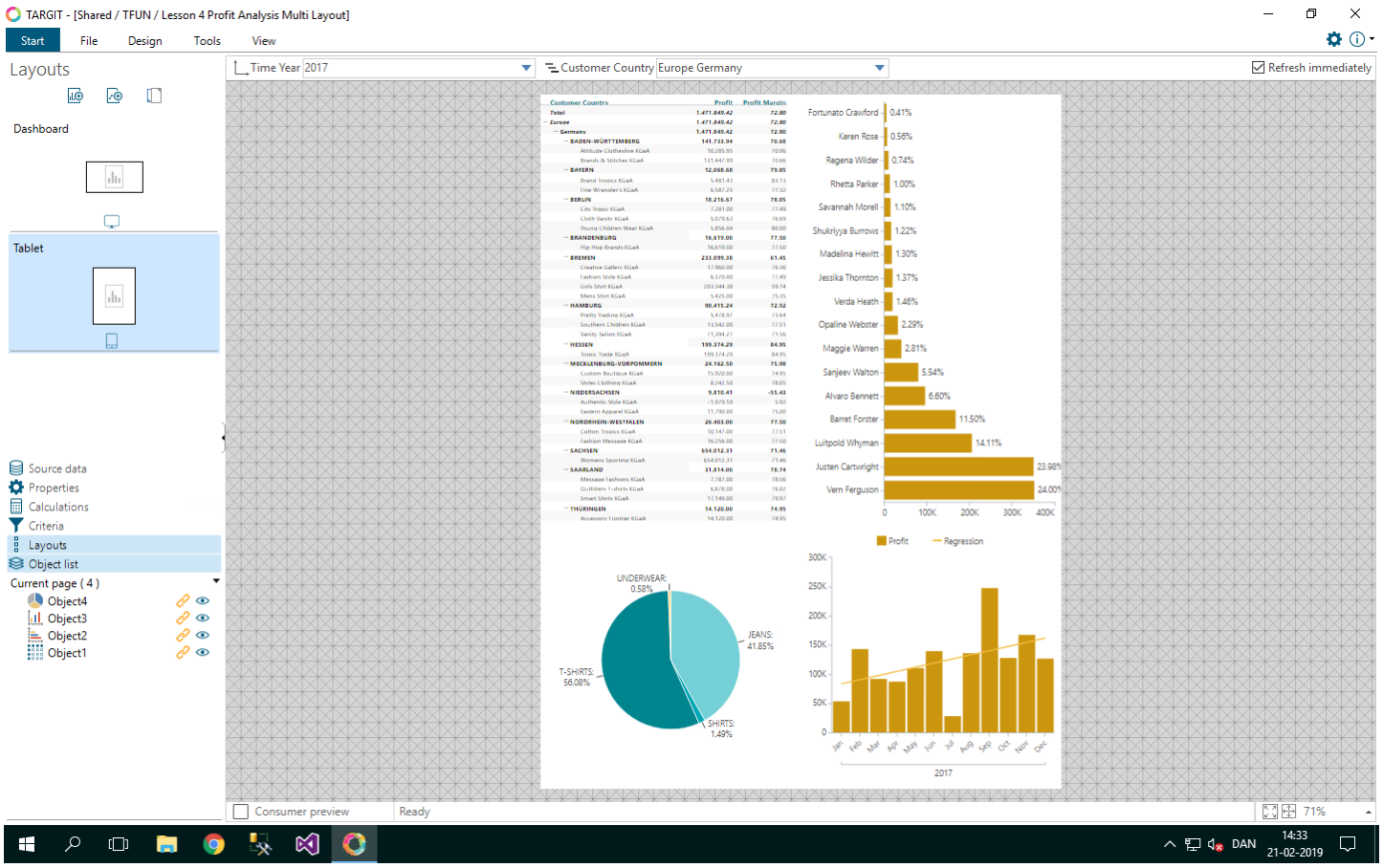
Task 1

Open the document you created in previous lesson, Lesson 3 Profit Analysis, and add a second Dashboard Layout to the document. Page settings for the second Dashboard Layout should be:

- Tablet [768 x 1024], portrait mode.

Tip: You may need to work with *object scaling* for the cross tab to make it look correct on the smaller page.





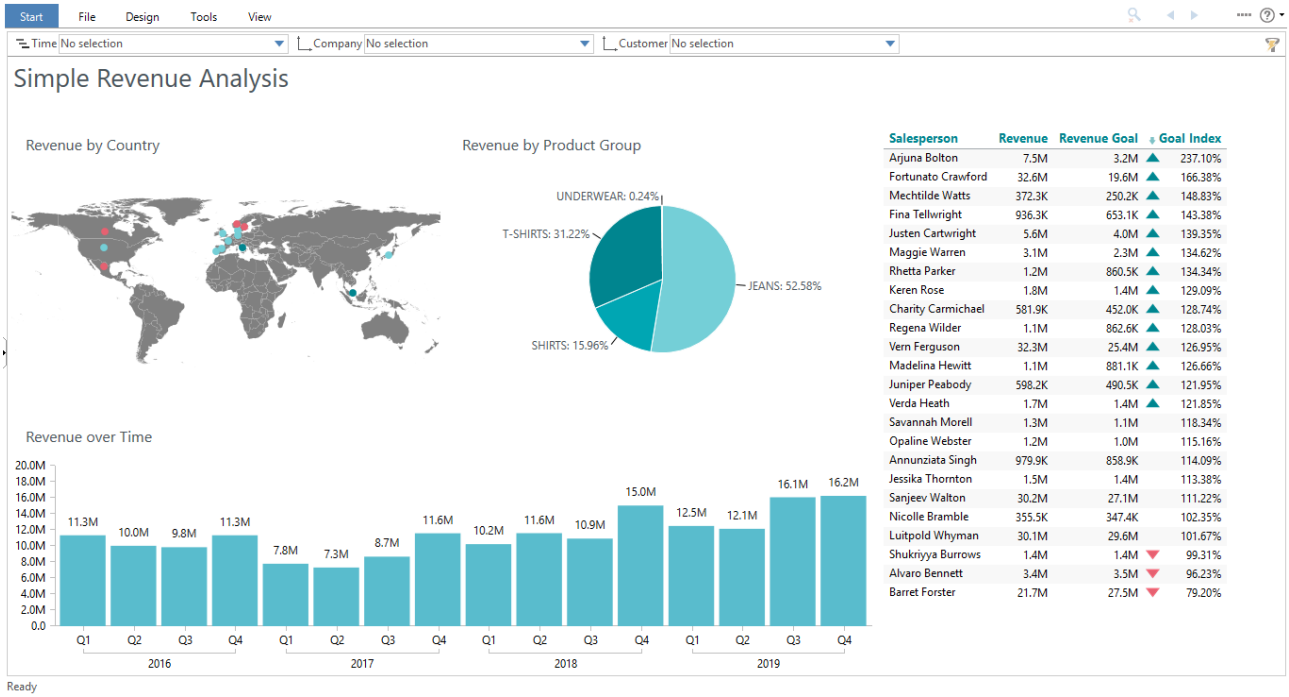
Save the document as **Lesson 4 Profit Analysis Multi Layouts**.

Lesson 5: Dynamic criteria

Dynamic criteria is a way to set up time based criteria in a dynamic way, e.g. to make an analysis always show data for the current month. Another example might be using *Year-to-date* dynamic criteria to make the analysis show data from the beginning of the year until today's date.

Dynamic criteria as global criteria

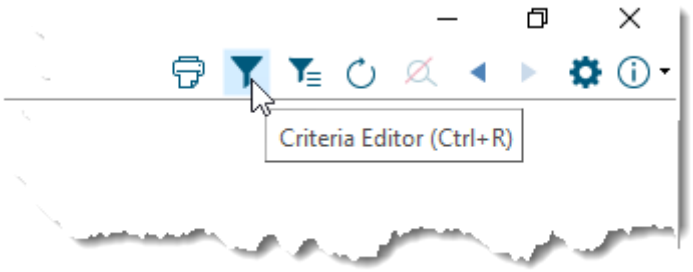
First, let us have a look at the opportunities of working with dynamic criteria as global criteria for an analysis. To demonstrate this, we might open the *Simple Revenue* analysis from the documents / Shared / Analysis Examples folder.



Initially, this analysis does not contain any global criteria. In fact, we can see that the demo data for this analysis is ranging from 2016 Q1 to 2019 Q4.

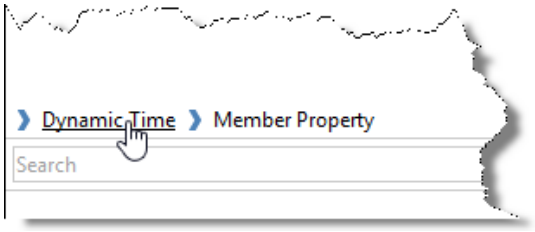
Dynamic criteria from the Criteria Editor

Open the Criteria Editor from the mini menu:



With the Criteria Editor opened, click Add criteria.

We can now go directly to dynamic criteria by clicking the related button in the lower left corner of the dialogue box.

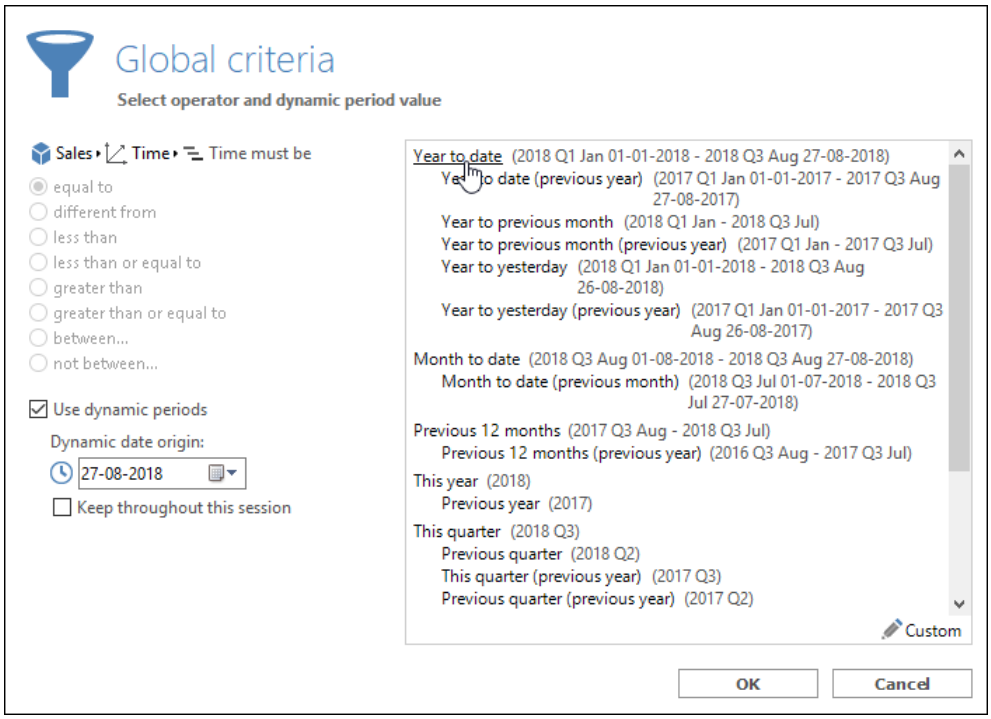


We will now see a large number of pre-defined dynamic criteria, depending on the structure of the time dimension.

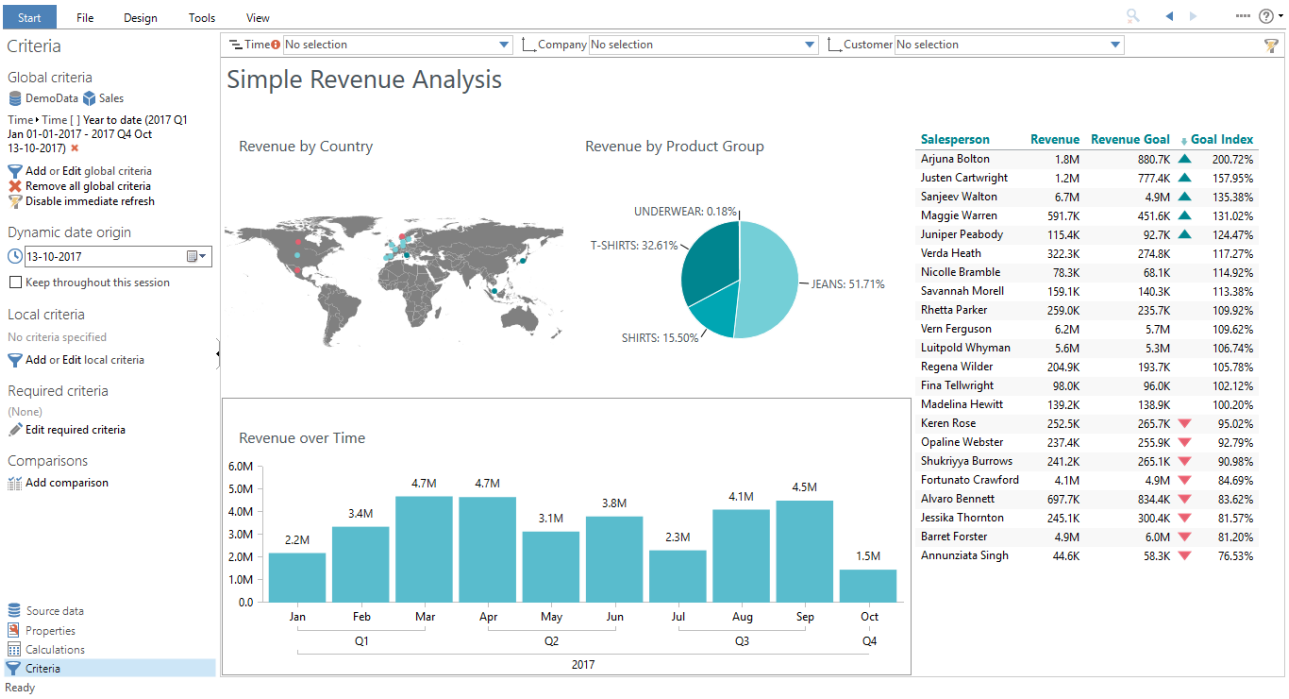
Notice that the time dimension in TARGIT demo data contains a hierarchy with four levels: Year, Quarter, Month and Date. The same four levels are reflected in the options we are offered as pre-defined dynamic criteria.

Also, notice the text in parenthesis after each of the pre-defined dynamic criteria. The text tells us what we currently can expect from each criteria option, based on today's date. The box *Dynamic date origin* is used for simulating another today's date. When used, the results on the right hand side will change accordingly.

Let us try the *Year-to-date* option.



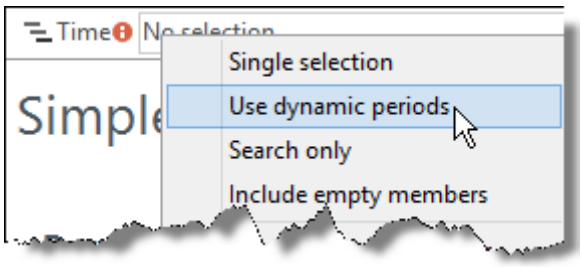
If we just accept it as it is and click OK, we will get this result:



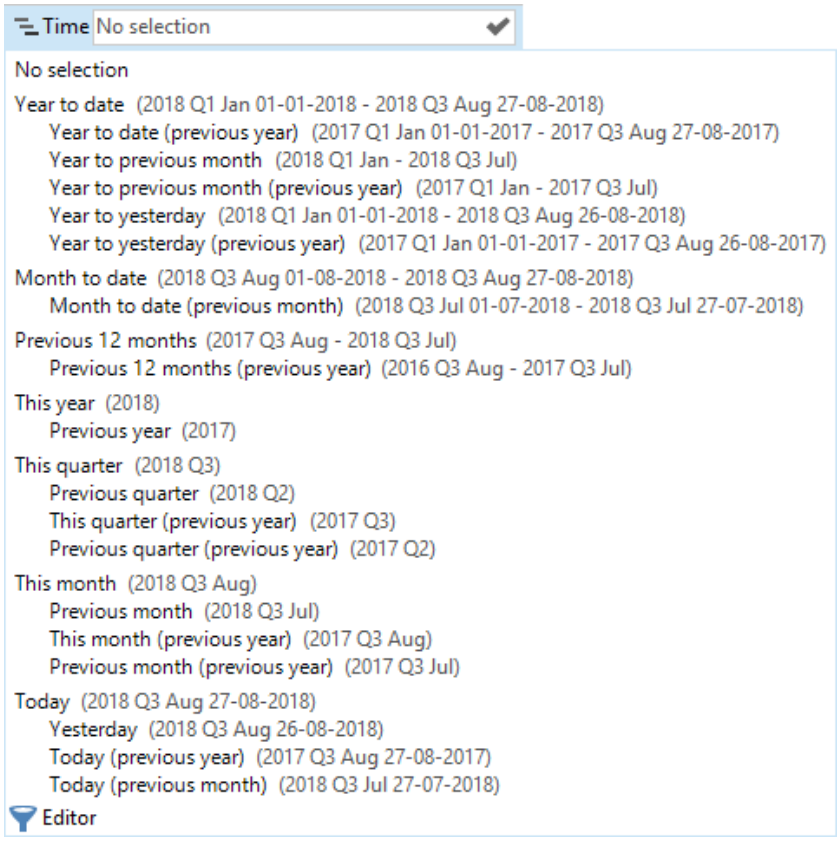
This result is based on Dynamic date origin set to October 13, 2017. Furthermore, in the bar chart, the time dimension has been expanded to the month level.

Dynamic criteria from the Criteria Bar

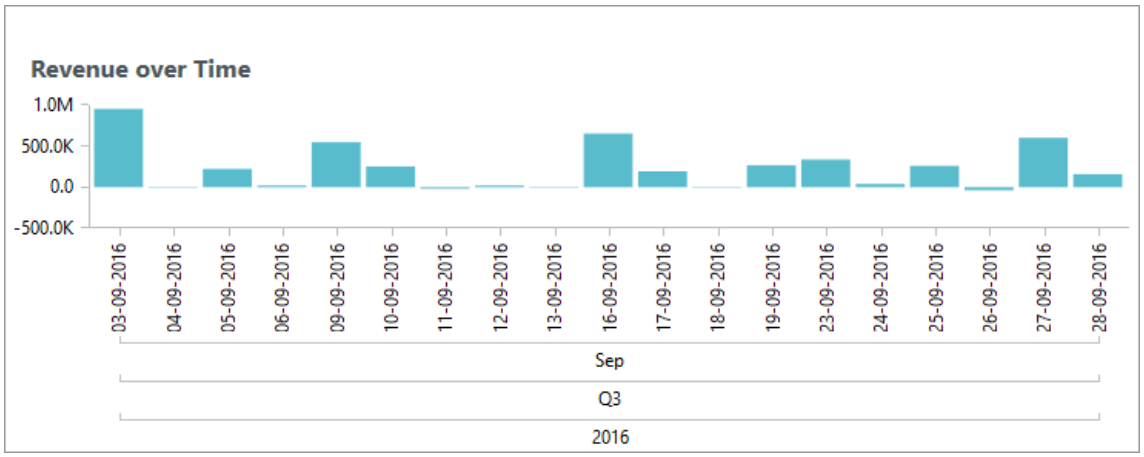
You can also add global, dynamic criteria directly from the Criteria Bar. First, you will have to add the time dimension to the Criteria Bar, if not already present. Select "Use dynamic periods" when you right-click the Time dimension in the Criteria Bar.



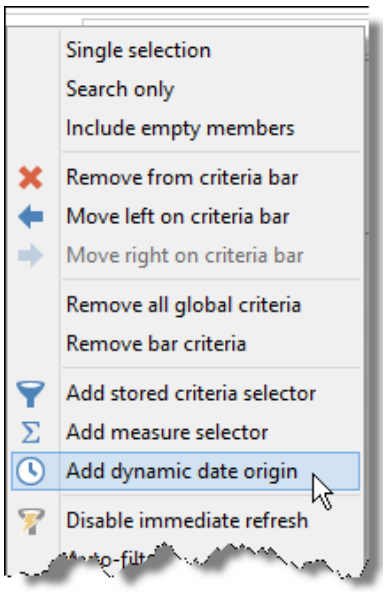
Now, if you open the drop down list from the time dimension in the Criteria Bar you will see all the pre-defined dynamic options – identical to what we saw in the Criteria Editor.



If we pick *Previous month* from the list, the bar chart will show data of the previous month (screen shot below is based Dynamic date origin set to October 2016).



If you want a handy way to change the Dynamic date origin, you can add it to the Criteria Bar so that it will always be visible while working with the analysis. Right-click somewhere on the Criteria Bar and select "Add dynamic date origin".

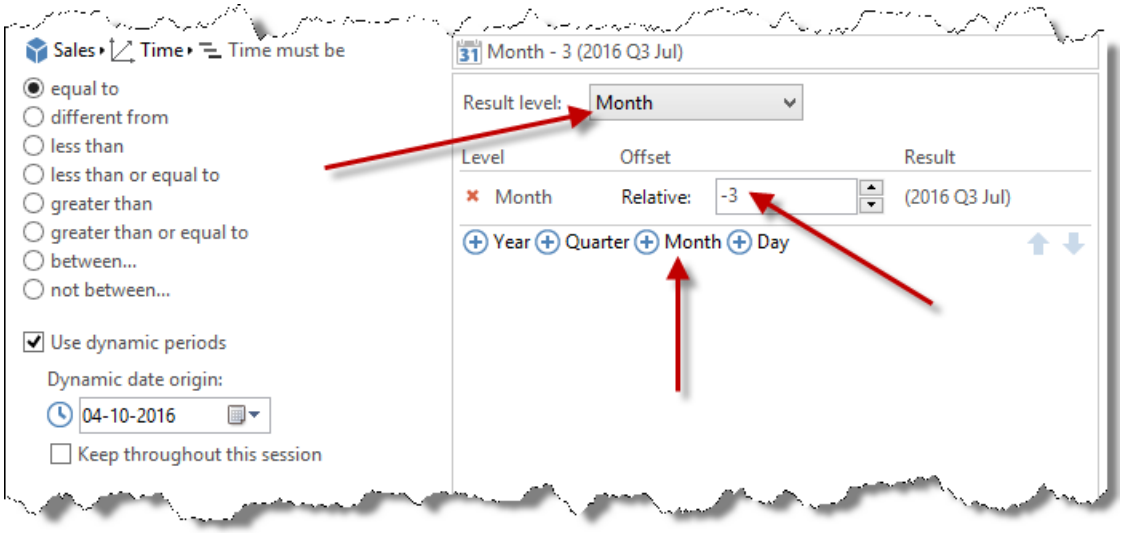


Customized dynamic criteria

Even though there is a wide range of pre-defined criteria, at some point you may be in need of setting up a customized dynamic criterion.

When working with dynamic criteria in the Criteria Editor dialogue box, there is an option to work with *Custom* dynamic criteria in the lower right corner of the box.

E.g. if we want to see data three months back relatively to the current month, we should make a definition like this:

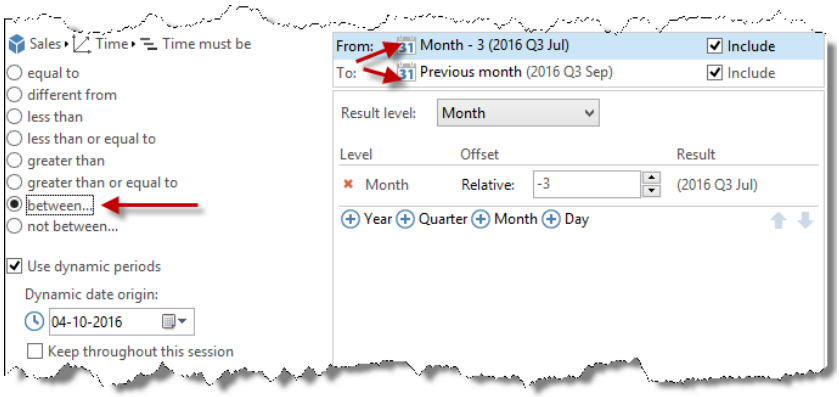


The necessary steps are these:

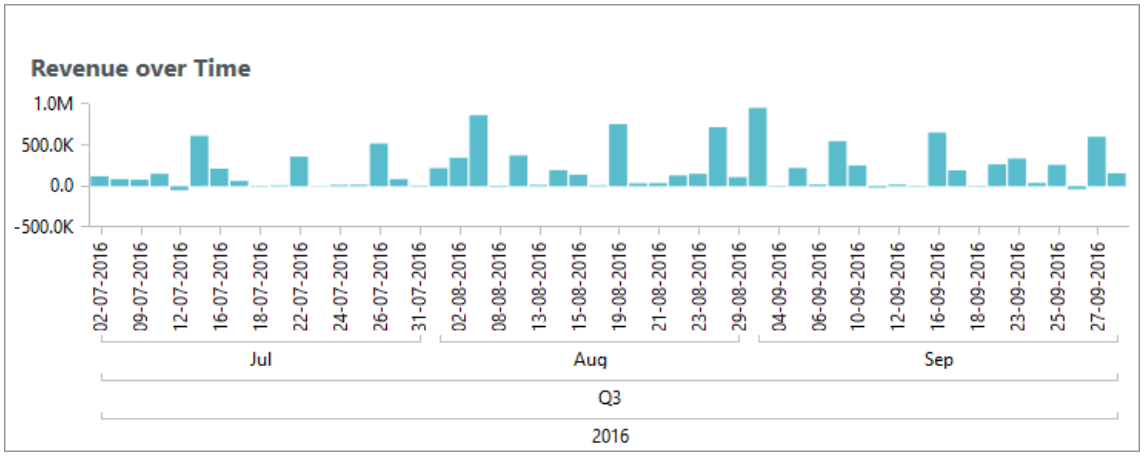
- Select the correct **Result level**. With the result level, you determine whether the outcome should be data on year, quarter, month or date basis.
- Add an **Offset**. In this sample, we picked a month offset in order to shift the criterion a number of months back in time. Add multiple offsets if necessary. The results in the right most column will reflect how each offset moves the criterion.
- An offset can be **Relative** or **Specific**. In this case, we choose a relative offset of -3 months as we wish to see data for the month three months before the current month. Click the word "Relative" to change it to "Specific" which will enable you to select a specific month like "January".

Another example on how to use custom dynamic criteria might be if we wanted to see a dynamic period of multiple months, e.g. the last three concluded months.

The dynamic criteria for this will have to use a starting point as well as an ending point. The operator "between" is useful for this purpose. When you have selected the "between" operator from the left hand side, you will be able to define these two points. Click on each line to define each one individually.



As a result of the above definition, we will now see data for the last three concluded months. The screen shot is based on Dynamic date origin set to October 2016.



Exercises Lesson 5

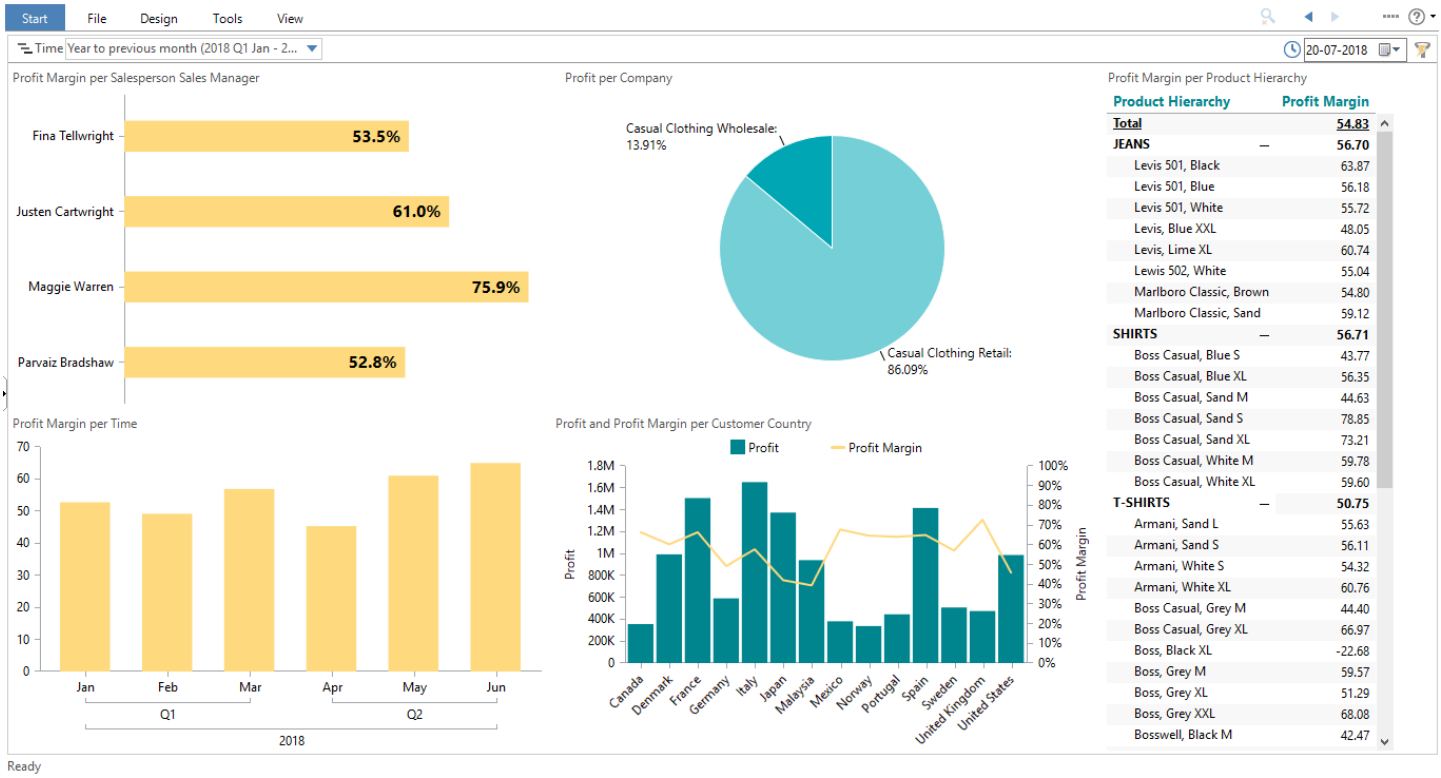
(Screenshots and exercises are based on version 2019.0 demo data. If you are working on an earlier or later version you may need to add or subtract 1 year to achieve similar results.)

Task 1

Create a *Profit Margin* analysis similar to the one shown below. All data are based on the **Sales cube**.

The result is based on a dynamic criterion:

- **Year to previous month**.
- Dynamic date origin set to **20 July 2018**.



Save the analysis as **Lesson 5 Profit Margin Analysis**.

Task 2

Change the Dynamic criterion to **Previous month** and Dynamic date origin to **20 July 2018**.

Which date saw the highest Profit Margin for **Fina Tellwright** in **United States**?

Answer: _____

Task 3

Change the Dynamic criterion to **Previous 12 months** and change Dynamic date origin to **31 March 2017**.

Which **month** saw the highest profit margin?

Answer: _____

In that month, how was the Profit distributed percentage wise between **Wholesale** and **Retail** for **Jeans** in the **United States**?

Answer: _____

Lesson 6: User dimensions

A *User dimension* is a dimension that is created by the end-user. The individual dimension members of a User dimension are defined from criteria from one or more standard dimensions.

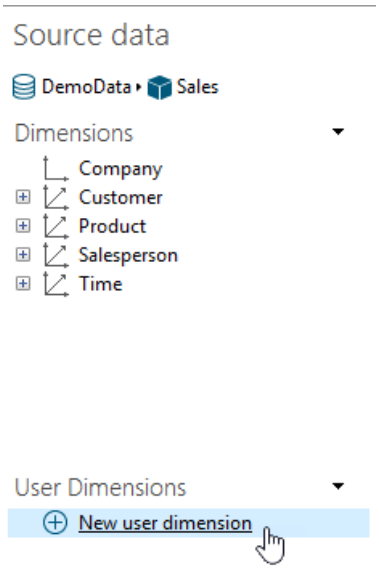
Quite often, an organization wants to analyze their data by comparing one set of data to another set of data. E.g., data for a recent period compared to the same period one year earlier.

If the comparable data sets are as trivial as e.g. two years, then you would probably just a Time dimension on the Year level, but if the comparable data sets are slightly more advanced, then you would need a *User dimension*.

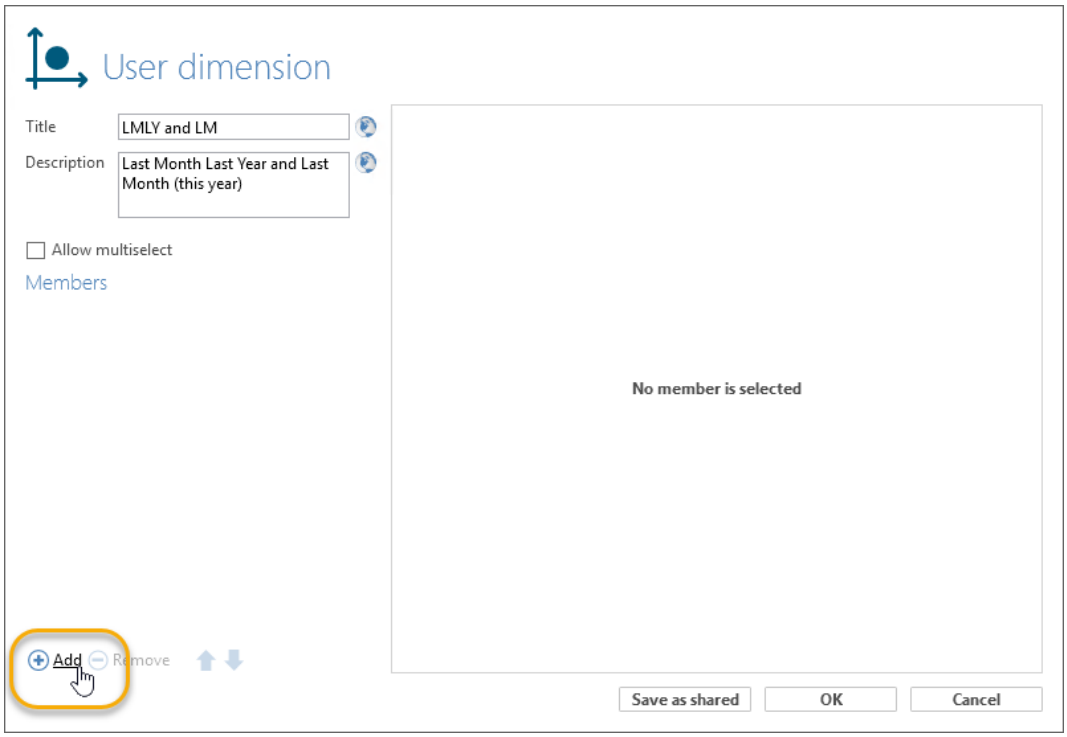
When you combine Dynamic Criteria with User dimensions, you will be able to produce dynamic analyses, such as: *Compare revenue of Year to date to revenue of the same period last year.*

Create a User dimension

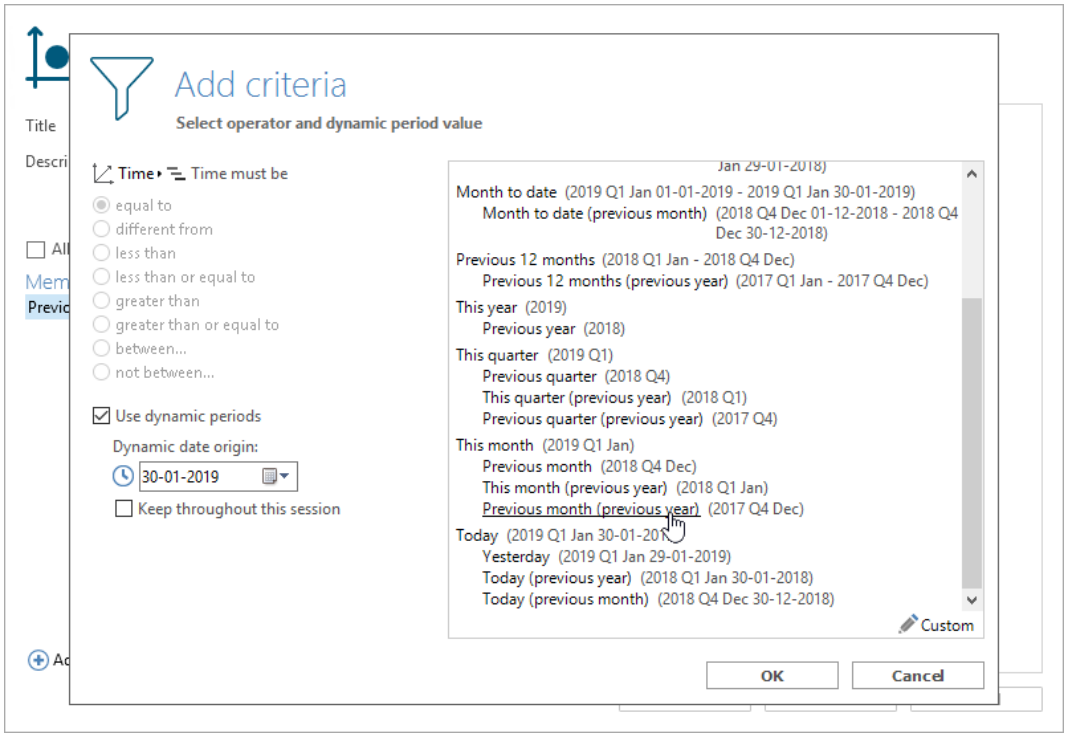
You can add a new User dimension from the Source data tab:



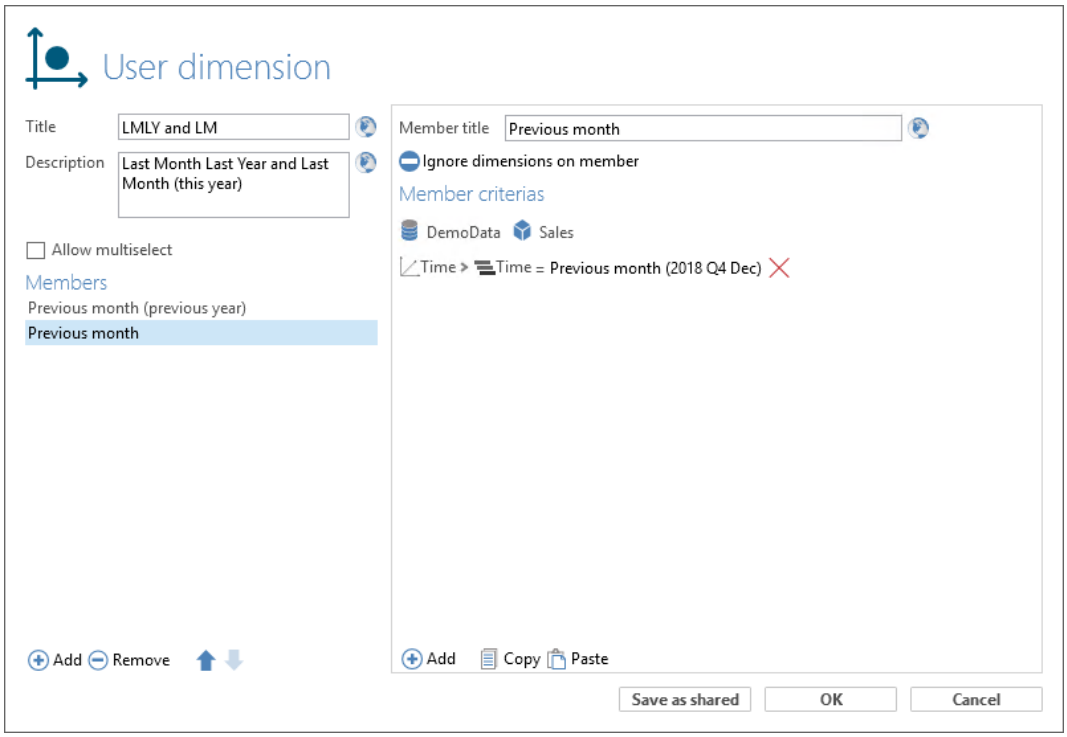
A User dimension is made up of *Members*. You can add as many members as you need:



Each member is made up of its own set of criteria. In this example, we select a dynamic criterion, Previous month (previous year), for the first comparison element.

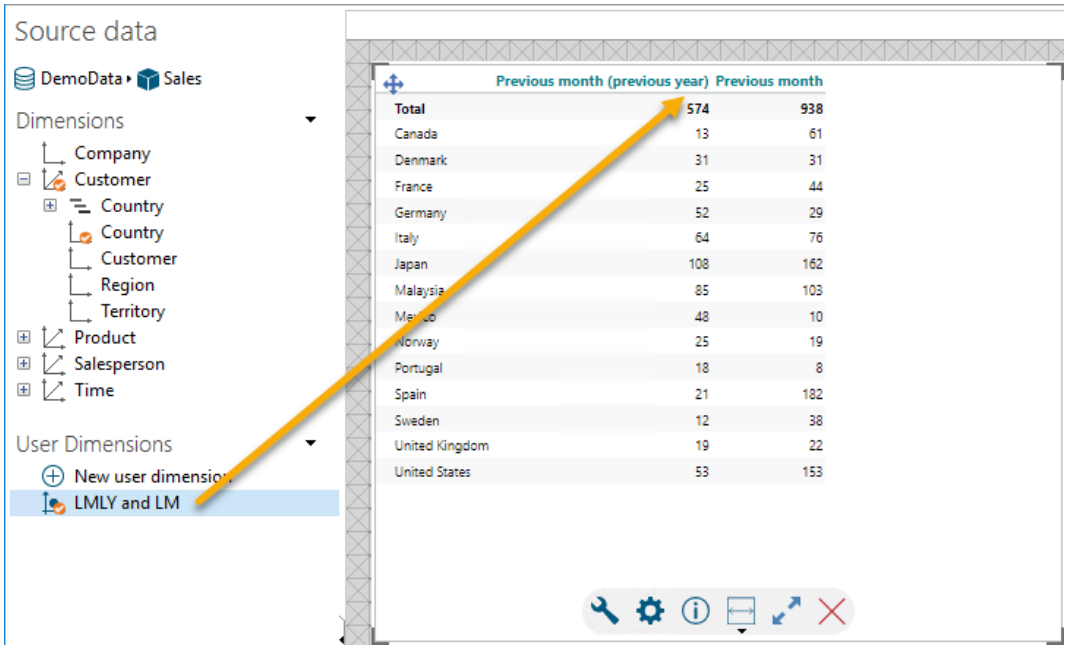


As soon as the criteria for the first member has been defined, you can add the next member etc.



Click ”Add” in lower left corner each time you want to add a new member to the User dimension.

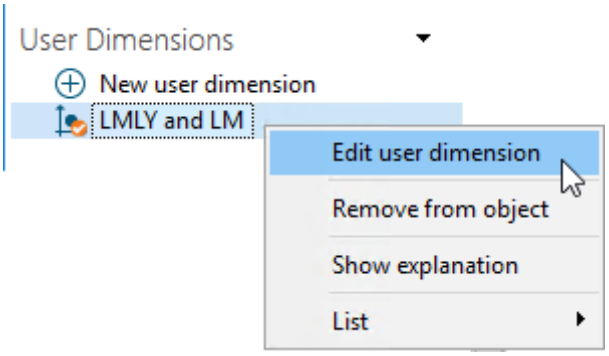
Once you are done with defining members and click the “OK” button, you will see the User dimension being added to the current object:



Edit and Share a User dimension

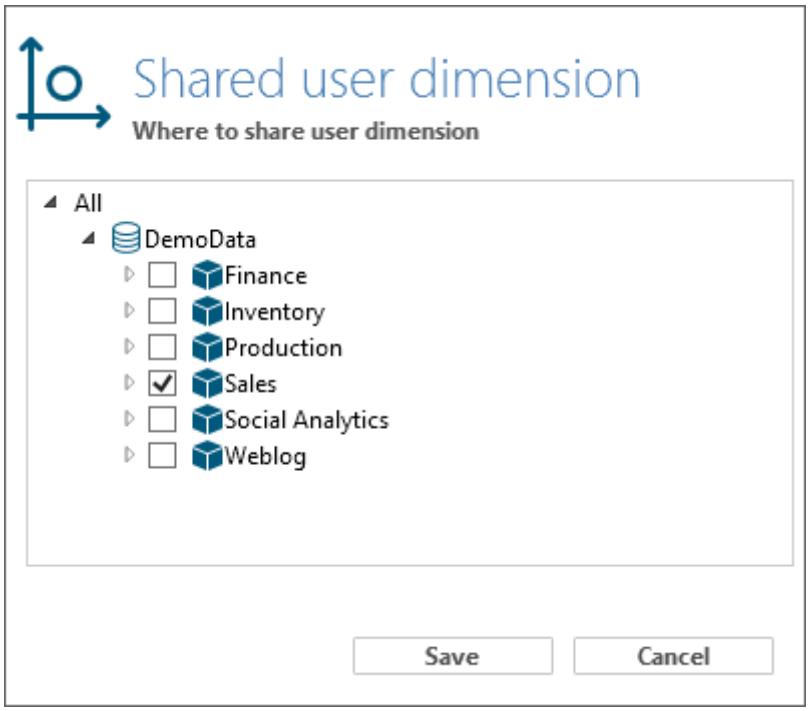
The User dimension you just created is probably just a *local* User dimension – directly associated with the object in which it was created.

To edit a User dimension, right click it in the Source data tab:



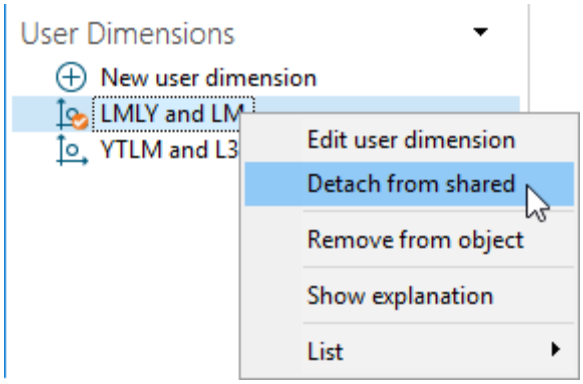
Apart from being able to edit, add or remove elements from your User dimension, you can also *Share* the User dimension to be used in other objects – even in other documents and by other users.

When you choose to share a User dimension, you will need to select in which cubes it should be shared. Sometimes it makes sense to share it only within the cube from where it was created, but for some User dimensions, based on general dimensions such as the Time dimension, you may want to share it across multiple cubes.



The advantage of having a shared User dimension is of course the re-usability and single point of administration.

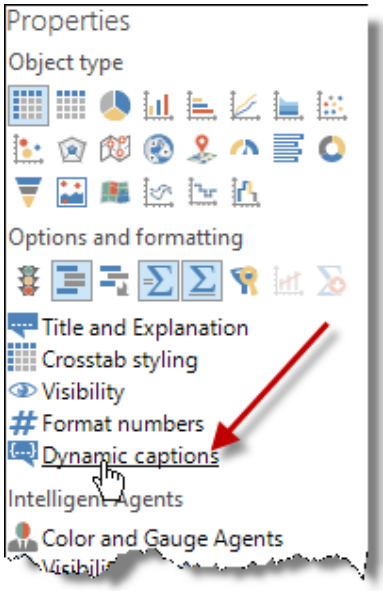
However, sometimes you may want to detach a User dimension from an object – maybe in order to make local User dimension modifications.



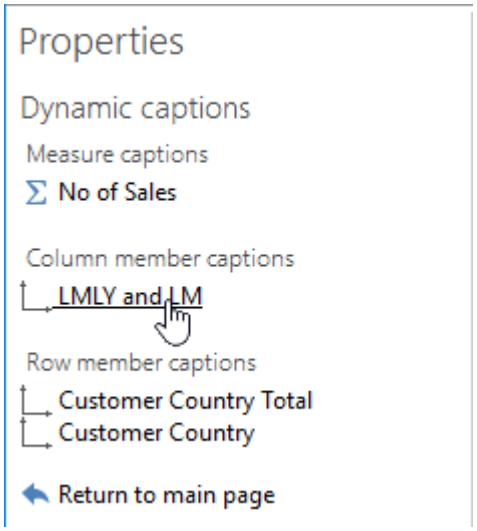
Dynamic captions

Right now, the column titles of our cross tab is simply the names that we chose for the User dimension members.

From Smartpad Properties we can make these titles dynamic, so that they will show the actual months and period represented by the individual columns.



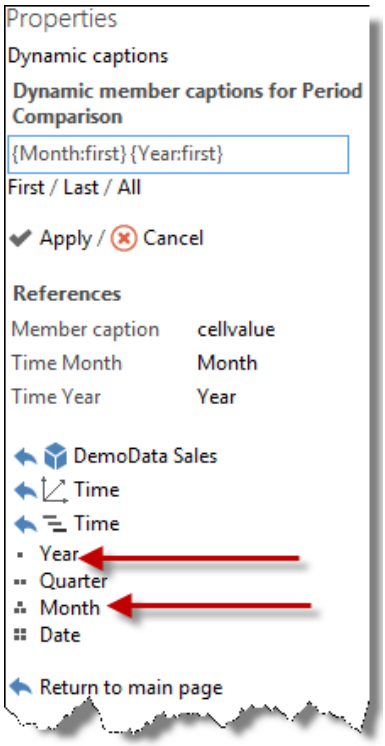
We want to apply dynamic captions for the columns of the Period Comparison.



Initially you will see a small editable field containing {cellvalue}. This variable, if kept, will insert the original title of the comparison element as part of the column titles. Often you will want to delete {cellvalue} and instead create a new title that is based completely on dynamic content.

Having deleted {cellvalue}, we can now start building up the dynamic caption. We do this by selecting dynamic references from the Time dimension. From the hierarchy in the Time dimension we select Month and Year.

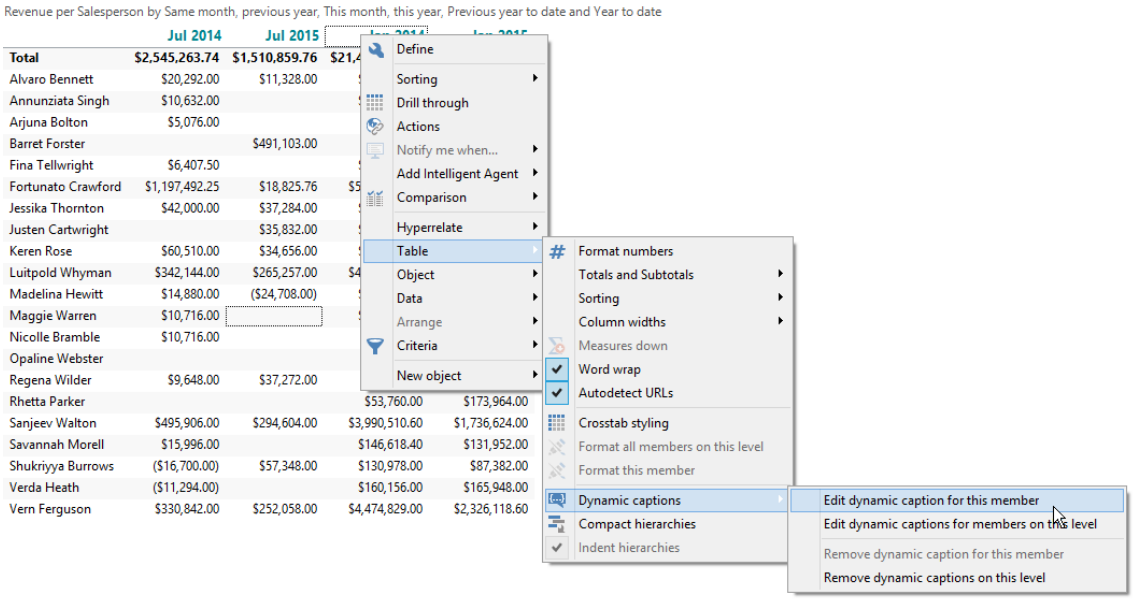
The selections are inserted as {Month:first} and {Year:first}. Also, remember to add a space between the two references.



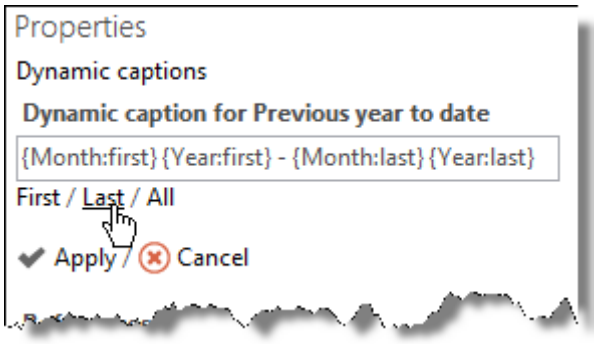
Important: When building the dynamic caption it is important to add references from the same dimension (same attribute or same hierarchy) as the one that were used for creating the dynamic criteria.

When you click "Apply", you will see the dynamic captions in the crosstab. Furthermore, you can see that all four columns are now using the same common syntax. This is why we see "January" in the last two columns – because the current syntax is relatively simple: {Month:first} {Year:first}.

We will need to modify the dynamic captions for the last two columns to display not only in which month they are stating, but also in which month they are ending. To edit the dynamic caption for a single column, you must right-click the column header and the select Table / Dynamic captions / Edit…



When we insert Month and Year again as dynamic references, we must this time change the reference type to ”Last”.



When this has been done for the last two columns, our crosstab, with dynamic captions, should look something like this:

Revenue per Salesperson by Same month, previous year, This month, this year, Previous year to date and Year to date

	Jul 2014	Jul 2015	Jan 2014 - Jul 2014	Jan 2015 - Jun 2015
Total	**$2,545,263.74**	**$1,510,859.76**	**$21,405,210.68**	**$15,093,974.83**
Alvaro Bennett	$20,292.00	$11,328.00	$371,058.00	$385,236.00
Annunziata Singh	$10,632.00		$233,129.00	$2,232.00
Arjuna Bolton	$5,076.00			
Barret Forster		$491,103.00		$2,698,715.52
Fina Tellwright	$6,407.50		$298,447.66	$84,864.96
Fortunato Crawford	$1,197,492.25	$18,825.76	$5,476,352.42	$3,371,916.73
Jessika Thornton	$42,000.00	$37,284.00	$172,627.20	$127,546.20

Exercise Lesson 6

(Screenshots and exercises are based on version 2019.0 demo data. If you are working on an earlier or later version you may need to add or subtract 1 year to achieve similar results.)

Task 1:

Build an analysis on basis of the **Sales cube**.

The objects in this analysis is using a User dimension with up to four dynamic members:

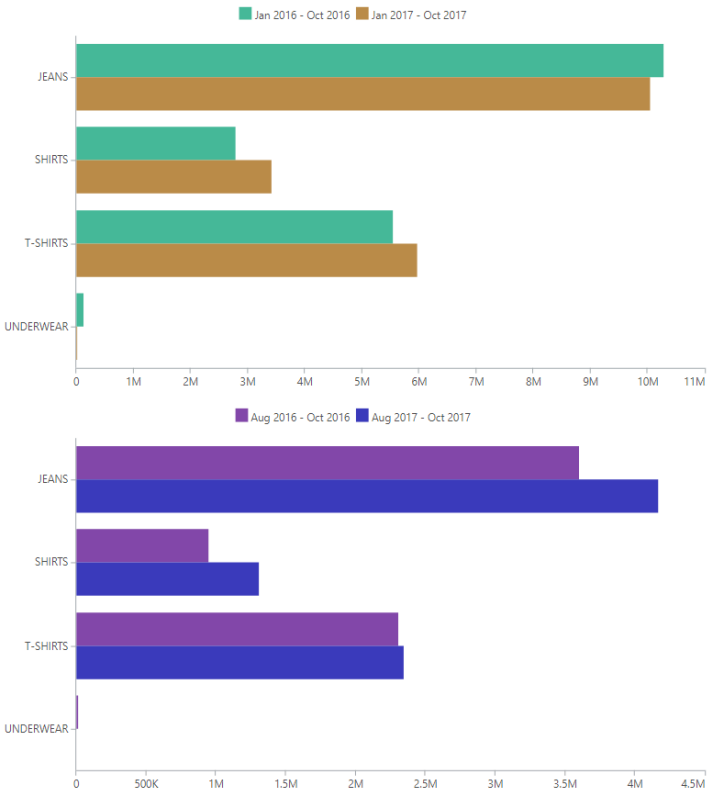
- Year to previous month (previous year)**.**
- Year to previous month**.**
- Previous 3 months (previous year).
- Previous 3 months.

Tip: Use the predefined dynamic criteria *Previous 12 months*, previous year and this year, as basis for the two 3 months' members.

Tip: First, complete the crosstab – including all User dimension members and dynamic captions. Once completed, copy the crosstab, and with slight modifications, turn it into the bar charts.

With Dynamic date origin set to **20 November 2017** the analysis should look like this:

		Jan 2016 - Oct 2016	Jan 2017 - Oct 2017	Aug 2016 - Oct 2016	Aug 2017 - Oct 2017
Total		**18,791,578**	**19,503,445**	**6,895,166**	**7,842,430**
JEANS	**Total**	**10,294,115**	**10,048,738**	**3,604,670**	**4,169,872**
	Levis 501, Black	214,746	249,767	101,594	150,989
	Levis 501, Blue	1,190,621	1,511,902	349,676	667,311
	Levis 501, White	201,085	259,840	49,064	103,987
	Levis, Blue XXL	138,585	205,606	76,145	90,979
	Levis, Lime XL	1,247,699	982,833	445,625	426,261
	Lewis 502, White	1,992,656	1,657,576	902,550	699,764
	Marlboro Classic, Brown	3,159,714	2,881,774	995,233	1,108,946
	Marlboro Classic, Sand	2,149,008	2,299,439	684,783	921,635
SHIRTS	**Total**	**2,801,435**	**3,438,341**	**955,352**	**1,315,492**
	Boss Casual, Blue L	18,702			
	Boss Casual, Blue S	33,491	76,746	8,372	43,259
	Boss Casual, Blue XL	732,009	1,265,525	273,412	439,665
	Boss Casual, Sand M	274,361	241,211	101,318	95,891
	Boss Casual, Sand S	20,941	60,614	1,194	19,014
	Boss Casual, Sand XL	63,982	27,519	35,862	16,795
	Boss Casual, White M	1,152,460	1,065,538	340,590	492,814
	Boss Casual, White XL	505,490	701,188	194,605	208,055
T-SHIRTS	**Total**	**5,551,842**	**5,985,441**	**2,313,850**	**2,349,654**
	Armani, Sand L	101,721	15,996	30,379	13,705
	Armani, Sand S	588,910	340,386	219,034	56,157
	Armani, White L	2,511			
	Armani, White S	98,387	54,744	36,347	27,961
	Armani, White XL	105,767	44,021	10,136	16,775
	Boss Casual, Grey M	118,935	151,766	43,447	49,625
	Boss Casual, Grey XL	50,172	88,219	21,429	34,321
	Boss Casual, White M		42,056		
	Boss, Black M	25,997	-9,133		-10,832
	Boss, Black XL	288,132	380,712	195,238	155,812
	Boss, Grey M	70,617	168,901	27,215	62,404
	Boss, Grey XL	126,197	100,635	25,175	39,969
	Bosswell, Black M	-951			
	Bosswell, Black S	123,174	41,888	20,182	5,679
	Bosswell, Blue L	52,789	79,665	13,868	
	Bosswell, Blue M	193,493	243,949	72,190	150,808



Save the analysis as **Lesson 6 YTLM and last 3 months analysis.**

Lesson 7: Calculations and color agents

Client based calculations can add a lot of extra value to your analyses.

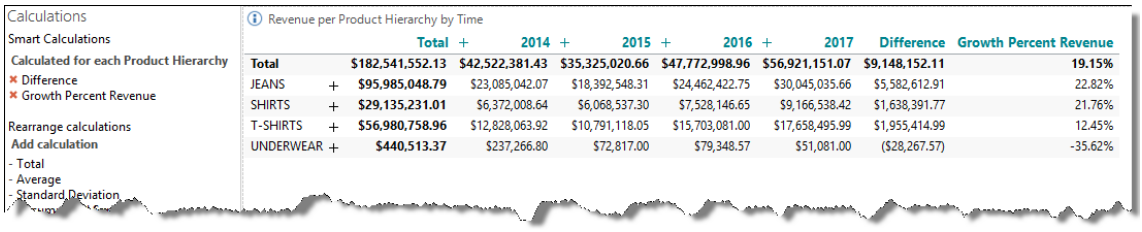
Calculations can be added in three different ways in the TARGIT client:

- **Smart calculations** are a set of pre-defined calculations that with a single click and in an intelligent way can be added to existing objects. The end-user does no need to know about the calculation syntax to use Smart calculations.
- **Advanced calculations** is a kind of calculations editor that can be useful when creating calculations that is not covered by the Smart calculations. In the Advanced calculations editor you create calculations in a point-and-click manner.
- **Custom calculations** require the end-user to be able to write the calculation syntax from scratch. Knowledge about the full calculations syntax is achieved by participating in the TARGIT Calculations Expert course.

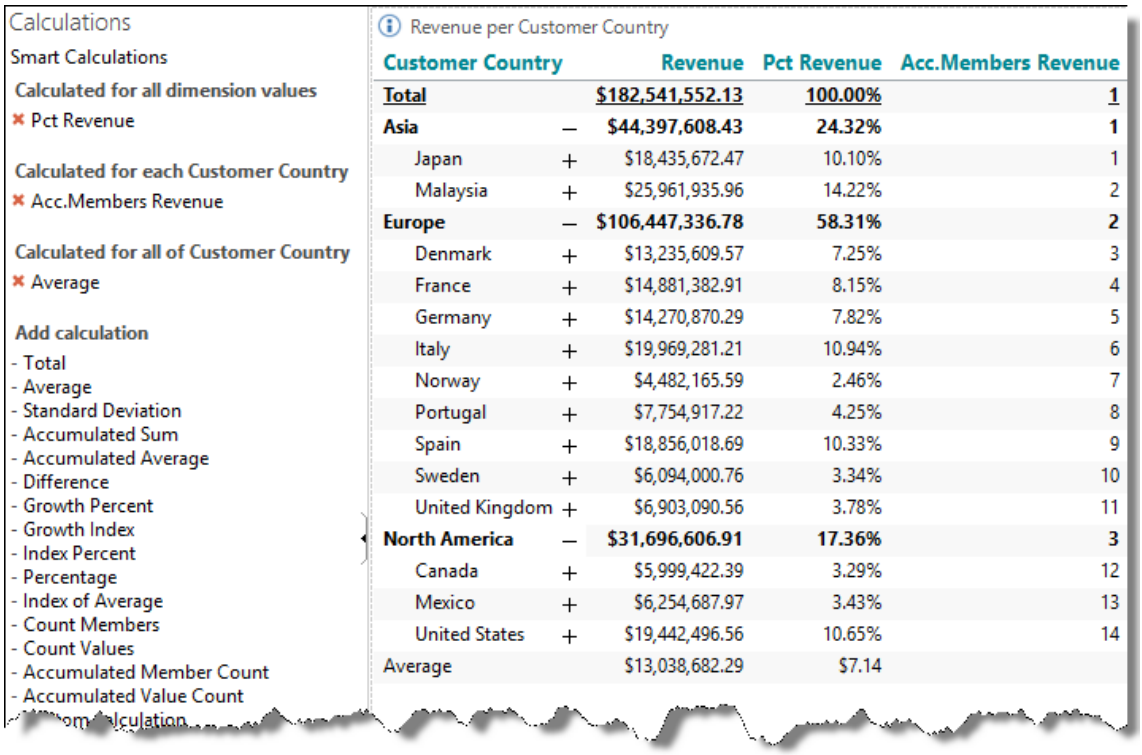
Pre-defined calculations

The list of pre-defined calculations, called Smart calculations, is found on Smartpad Calculations.

The pre-defined calculations has been designed, in an intelligent manner, to add as much value as possible in relation to the current context. In the example below, we have added a Difference and a Growth percent calculation to a crosstab with dimensions on both axes.



Another example, a crosstab with a dimension on just one axis, shows how the Average, Percent and Accumulated members count will behave when added as Smart calculations.

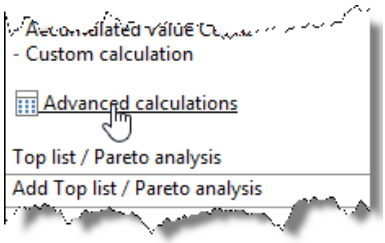


Customer Country		Revenue	Pct Revenue	Acc.Members Revenue
Total		**$182,541,552.13**	**100.00%**	**1**
Asia	–	**$44,397,608.43**	**24.32%**	**1**
Japan	+	$18,435,672.47	10.10%	1
Malaysia	+	$25,961,935.96	14.22%	2
Europe	–	**$106,447,336.78**	**58.31%**	**2**
Denmark	+	$13,235,609.57	7.25%	3
France	+	$14,881,382.91	8.15%	4
Germany	+	$14,270,870.29	7.82%	5
Italy	+	$19,969,281.21	10.94%	6
Norway	+	$4,482,165.59	2.46%	7
Portugal	+	$7,754,917.22	4.25%	8
Spain	+	$18,856,018.69	10.33%	9
Sweden	+	$6,094,000.76	3.34%	10
United Kingdom	+	$6,903,090.56	3.78%	11
North America	–	**$31,696,606.91**	**17.36%**	**3**
Canada	+	$5,999,422.39	3.29%	12
Mexico	+	$6,254,687.97	3.43%	13
United States	+	$19,442,496.56	10.65%	14
Average		$13,038,682.29	$7.14	

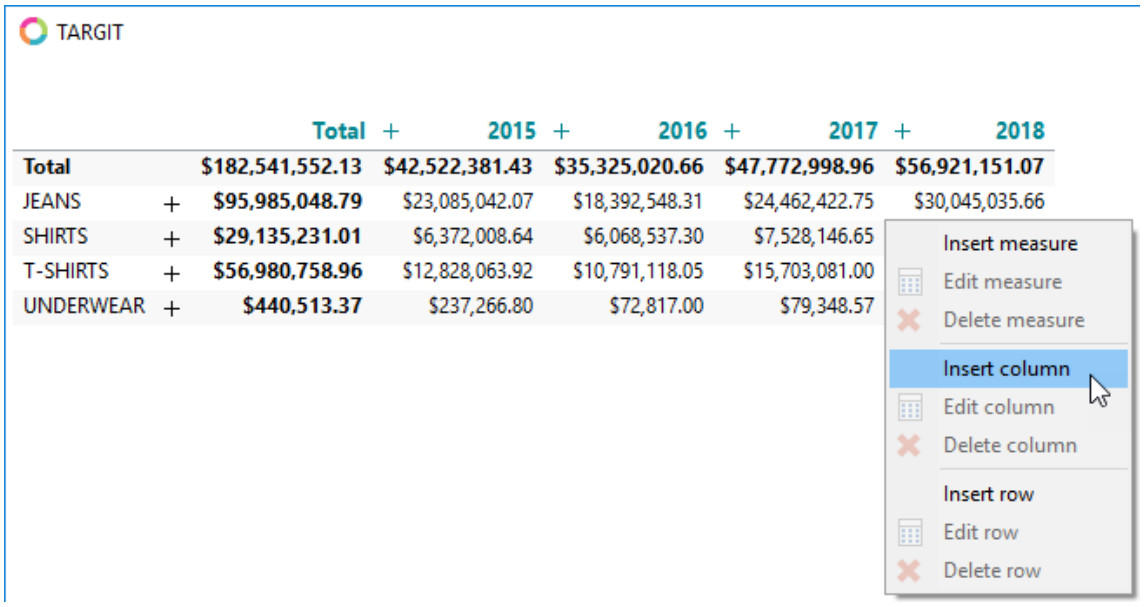
Advanced calculations

”Advanced calculations” is in reality a kind of calculations editor where the end-user can build calculations by pointing to and clicking individual rows or columns in a crosstab.

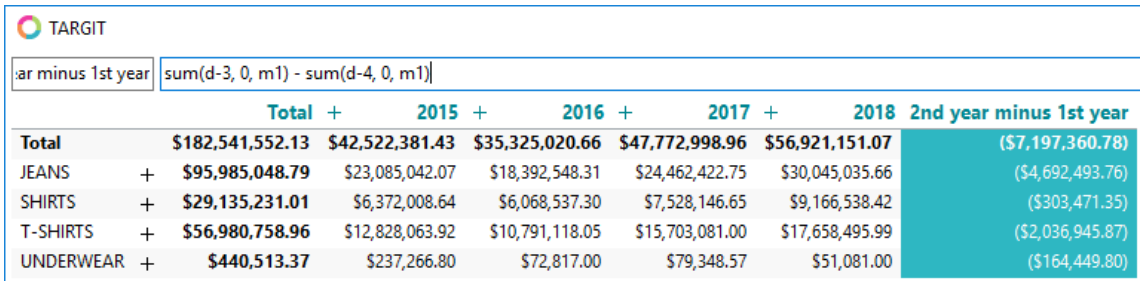
The advanced calculations editor is opened from Smartpad Calculations.



The current crosstab is then pulled into the advanced calculations editor where new calculations can be added as a new measure, as a new column or as a new row.

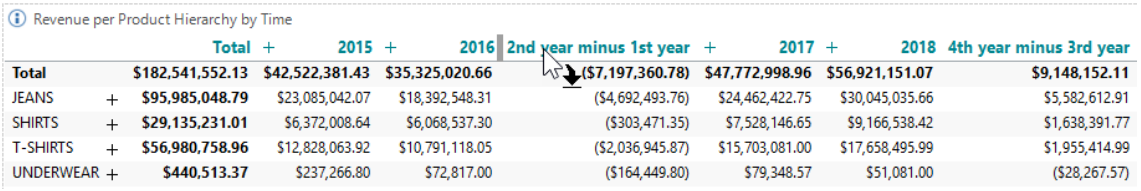


In this example, a new calculation has been inserted as a new column. The calculation has been given a title "2nd year minus 1st year". The formula has been made by clicking the second and the first columns respectively. You can click anywhere in the column. The operator (the minus) has been inserted from the keyboard.



When the formula is complete, click the OK button in top right corner to insert the next calculation etc. When the last calculation is done, click OK an extra time to close the Advanced calculations editor.

When the Advanced calculations editor has been closed, we can continue working on the crosstab in the analysis. The individual calculated columns can be pulled in between the other columns if desired. In this example, it makes more sense to place the "2nd year minus 1st year" calculation immediately after the second column.



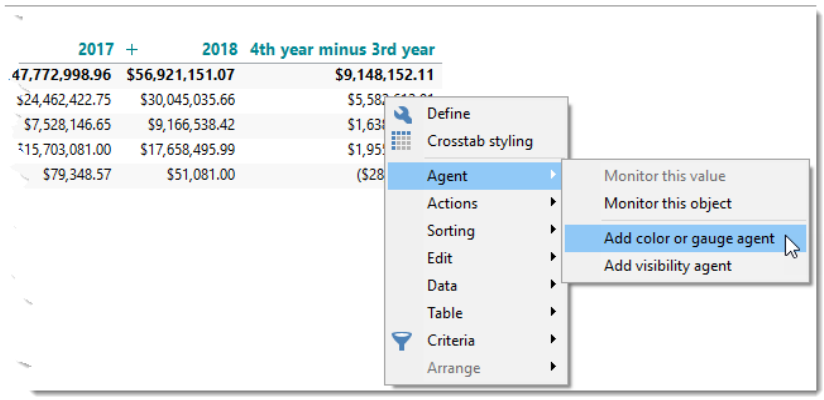
Revenue per Product Hierarchy by Time

	Total	2015	2016	2nd year minus 1st year	2017	2018	4th year minus 3rd year
Total	**$182,541,552.13**	**$42,522,381.43**	**$35,325,020.66**	**($7,197,360.78)**	**$47,772,998.96**	**$56,921,151.07**	**$9,148,152.11**
JEANS +	**$95,985,048.79**	$23,085,042.07	$18,392,548.31	($4,692,493.76)	$24,462,422.75	$30,045,035.66	$5,582,612.91
SHIRTS +	**$29,135,231.01**	$6,372,008.64	$6,068,537.30	($303,471.35)	$7,528,146.65	$9,166,538.42	$1,638,391.77
T-SHIRTS +	**$56,980,758.96**	$12,828,063.92	$10,791,118.05	($2,036,945.87)	$15,703,081.00	$17,658,495.99	$1,955,414.99
UNDERWEAR +	**$440,513.37**	$237,266.80	$72,817.00	($164,449.80)	$79,348.57	$51,081.00	($28,267.57)

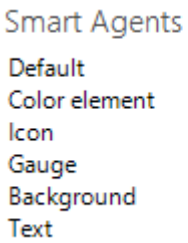
Color agents

Color agents are useful to highlight specific data in an analysis, e.g. if a calculation results in positive as well as negative trends.

The simplest way to add a color agent to a column is by right-clicking the column and then select "Agent / Add color or gauge agent".



This will open the Agent options in the Smartpad:



Many different options are available – in this example, we have selected an Icon agent, suitable for highlighting positive and negative trends.

Note:

- An agent with **2 states** will have one color for **positive** values and another color for **negative** values.
- An agent with **3 states** will have one color for values **significantly above average** (average + 1 standard deviation), another color for values **significantly below average** (average – 1 standard deviation), and a third color for values in between.

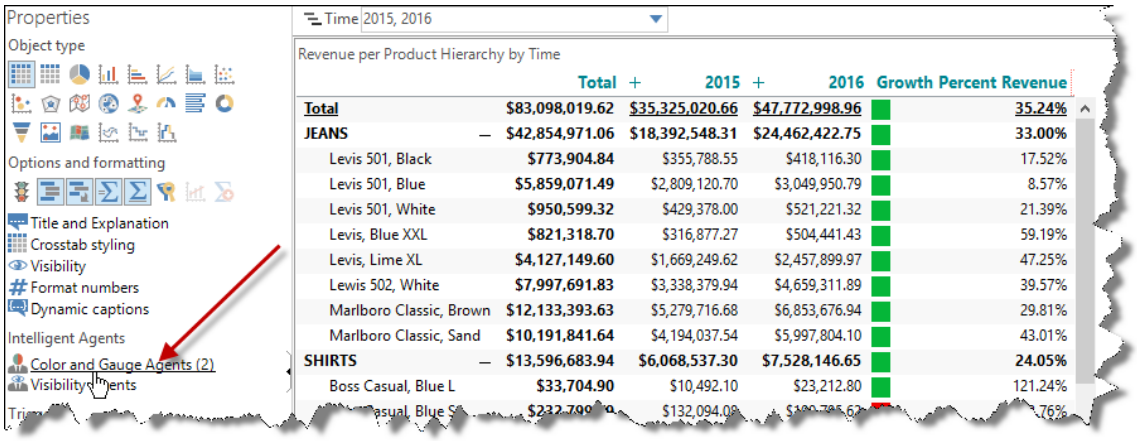
The agent "Classic LED (2 states)" has been used on the two calculated columns in the example below:

	Total	2015	2016	2nd year minus 1st year	2017	2018	4th year minus 3rd year
Total	**$182,541,552.13**	**$42,522,381.43**	**$35,325,020.66**	**($7,197,360.78)**	**$47,772,998.96**	**$56,921,151.07**	**$9,148,152.11**
JEANS +	**$95,985,048.79**	$23,085,042.07	$18,392,548.31	($4,692,493.76)	$24,462,422.75	$30,045,035.66	$5,582,612.91
SHIRTS +	**$29,135,231.01**	$6,372,008.64	$6,068,537.30	($303,471.35)	$7,528,146.65	$9,166,538.42	$1,638,391.77
T-SHIRTS +	**$56,980,758.96**	$12,828,063.92	$10,791,118.05	($2,036,945.87)	$15,703,081.00	$17,658,495.99	$1,955,414.99
UNDERWEAR +	**$440,513.37**	$237,266.80	$72,817.00	($164,449.80)	$79,348.57	$51,081.00	($28,267.57)

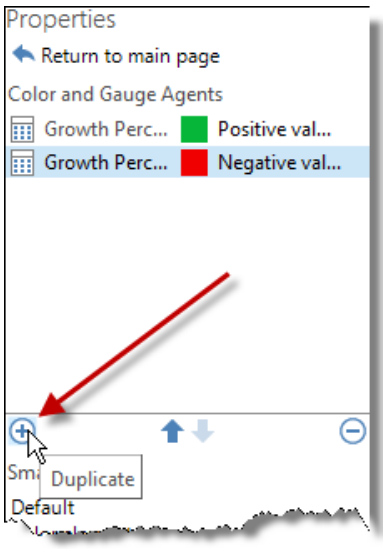
Customized color agents

An agent is not limited to the available standard conditions. These conditions can be customized if required.

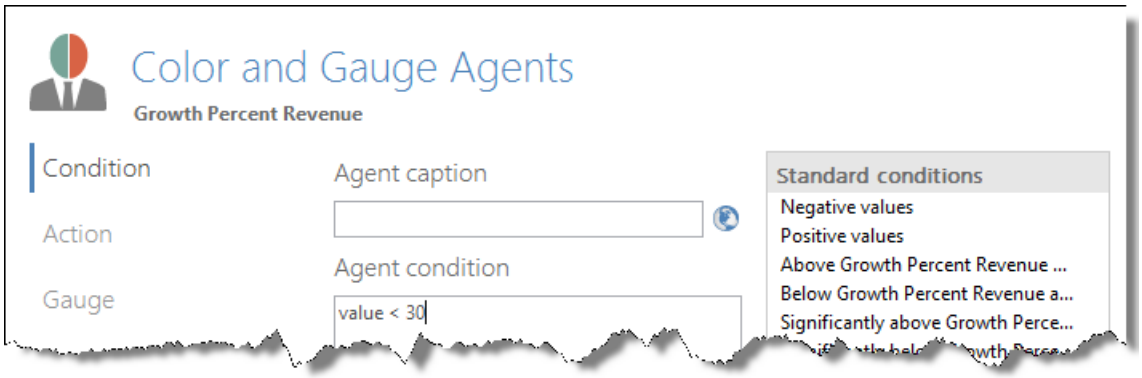
In this example, we have added a simple "Color element (2 states)" agent on the calculation in the crosstab. To edit an agent you will have open them from Smartpad Properties where you can click "Color and Gauge agents". Notice the number in parenthesis that tells you how many agents have been applied to the current object.



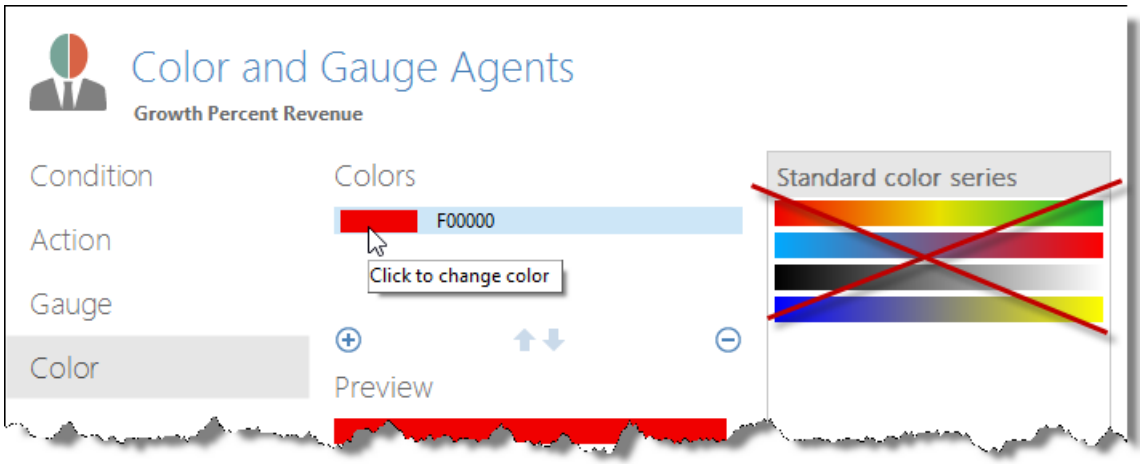
From the list of agents you can edit the individual agents (click the right side of the agent) or you can duplicate one agent in order to create even more states.



When editing an existing agent or when creating a new agent, you can select from the standard conditions on the right hand side – or you can manually customize the condition in the Agent condition field.

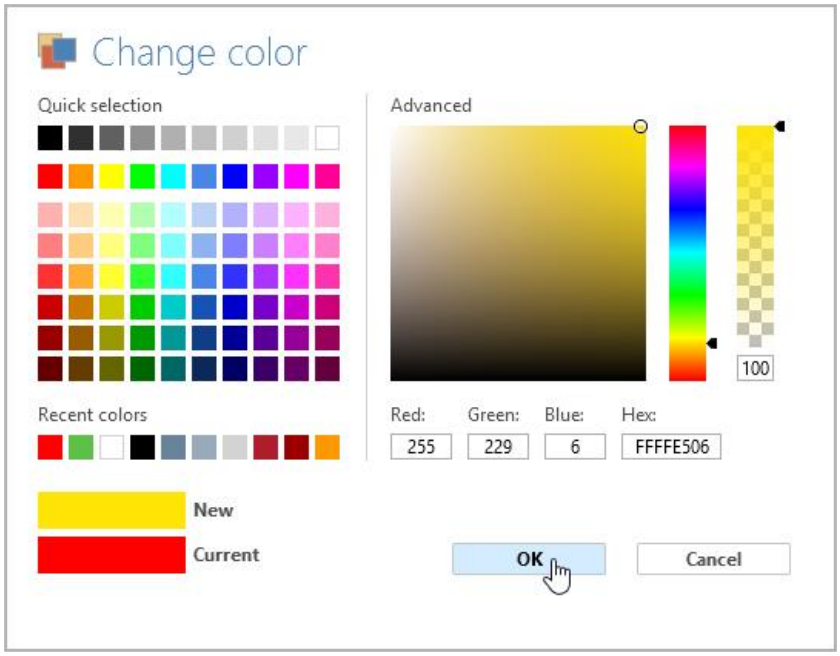


In this example, we will add a new agent for Growth percentages below 30, and we should determine a new color for this agent.

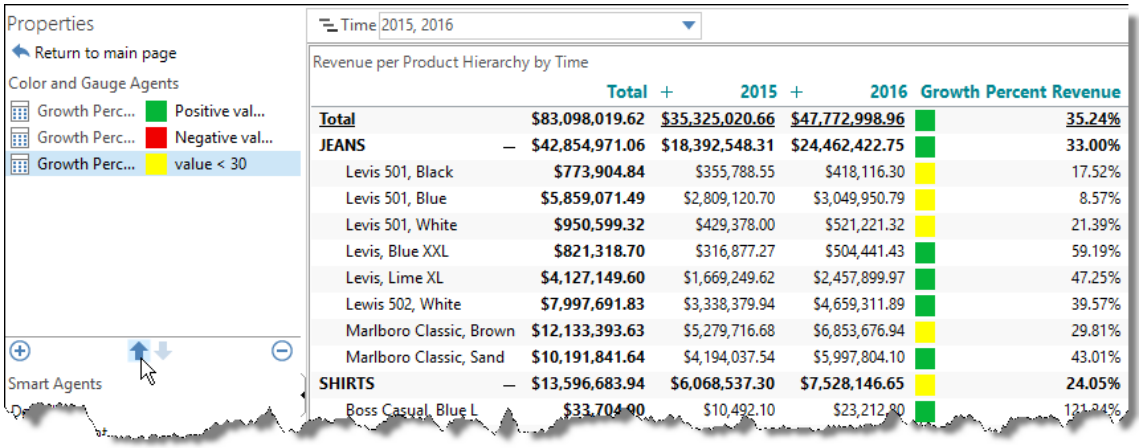


Note: Click the small colored filed on top to change the color. Do not use the standard color series on the right hand side unless you want to make special color agents where the color should automatically graduate from one to another color.

Pick the color from one of the standard colors, from the color palette or by précising the R/G/B or Hex value. When the correct color has been selected, close the box by clicking the "OK" button below the palette.

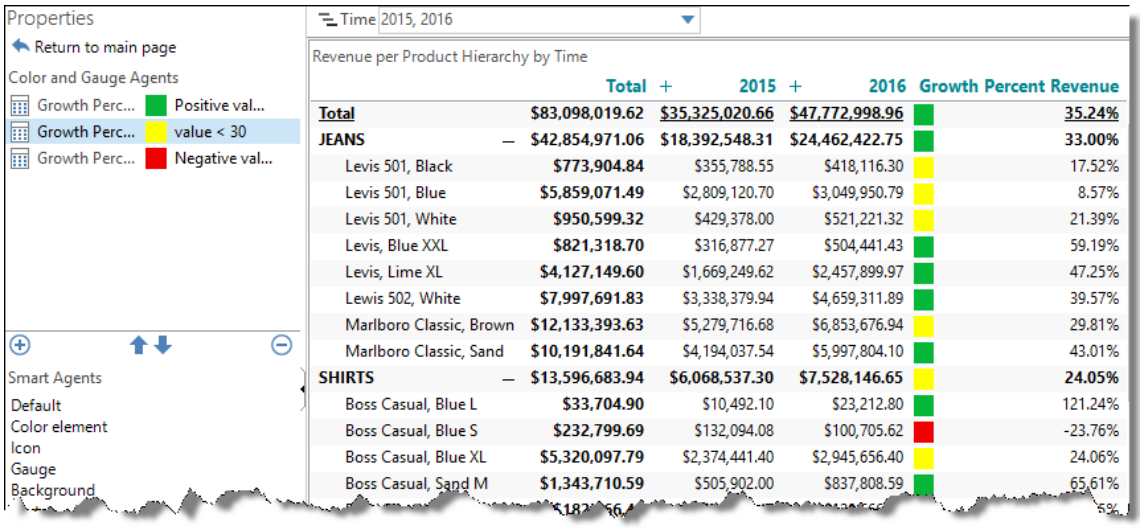


Sometimes you will experience that a newly added color agent will overwrite one of the other agents. In this case, we see an issue with all values below 30 being colored yellow (including the negative values that was otherwise colored red).



The sequence of color agents has an effect on how data is colored. To re-arrange the agents, select one of them and use the arrow buttons below the list of agents to move them up or down.

Moving the yellow agent up one step will result in this:



	Total +	2015 +	2016	Growth Percent Revenue
Total	**$83,098,019.62**	**$35,325,020.66**	**$47,772,998.96**	**35.24%**
JEANS	**$42,854,971.06**	**$18,392,548.31**	**$24,462,422.75**	**33.00%**
Levis 501, Black	**$773,904.84**	$355,788.55	$418,116.30	17.52%
Levis 501, Blue	**$5,859,071.49**	$2,809,120.70	$3,049,950.79	8.57%
Levis 501, White	**$950,599.32**	$429,378.00	$521,221.32	21.39%
Levis, Blue XXL	**$821,318.70**	$316,877.27	$504,441.43	59.19%
Levis, Lime XL	**$4,127,149.60**	$1,669,249.62	$2,457,899.97	47.25%
Lewis 502, White	**$7,997,691.83**	$3,338,379.94	$4,659,311.89	39.57%
Marlboro Classic, Brown	**$12,133,393.63**	$5,279,716.68	$6,853,676.94	29.81%
Marlboro Classic, Sand	**$10,191,841.64**	$4,194,037.54	$5,997,804.10	43.01%
SHIRTS	**$13,596,683.94**	**$6,068,537.30**	**$7,528,146.65**	**24.05%**
Boss Casual, Blue L	**$33,704.90**	$10,492.10	$23,212.80	121.24%
Boss Casual, Blue S	**$232,799.69**	$132,094.08	$100,705.62	-23.76%
Boss Casual, Blue XL	**$5,320,097.79**	$2,374,441.40	$2,945,656.40	24.06%
Boss Casual, Sand M	**$1,343,710.59**	$505,902.00	$837,808.59	65.61%

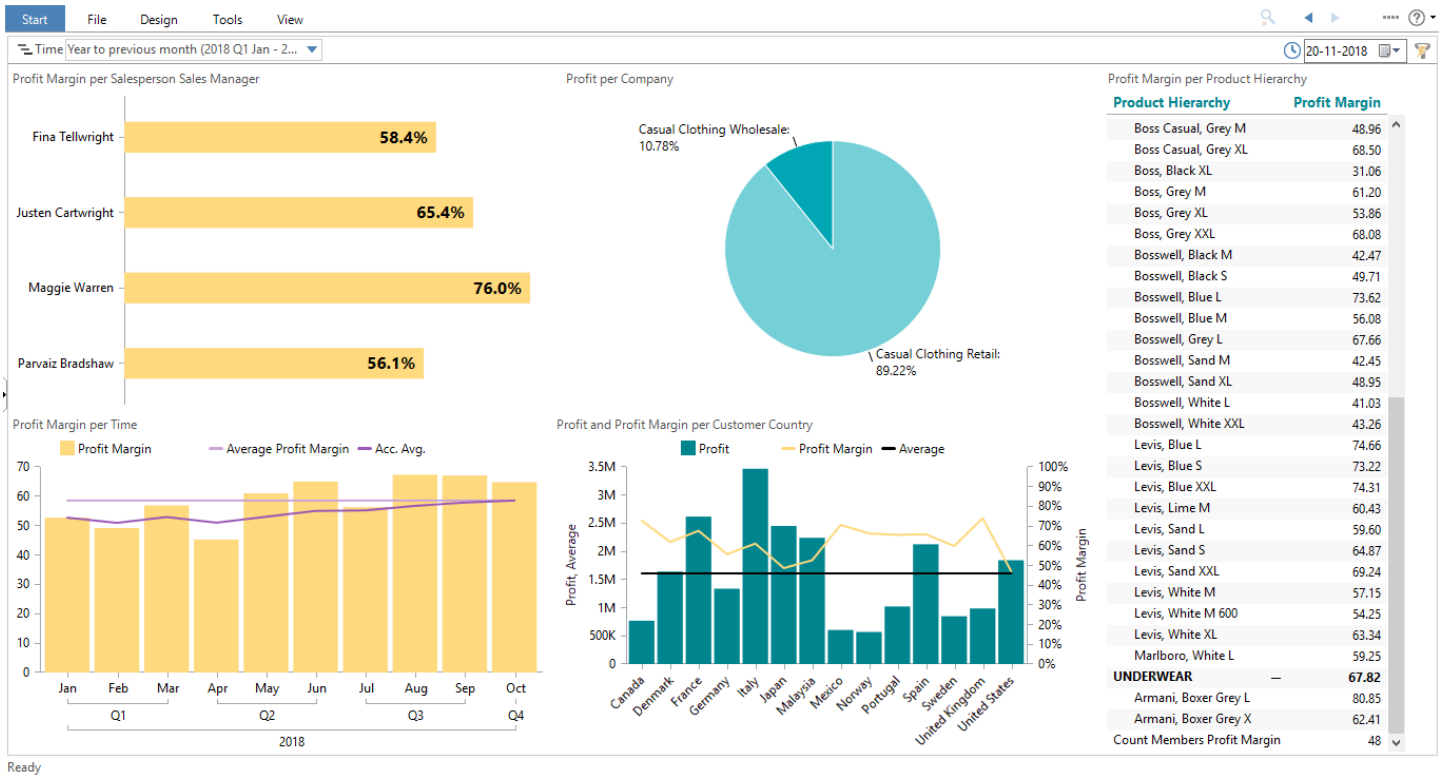
Exercises Lesson 7

(Screenshots and exercises are based on version 2019.0 demo data. If you are working on an earlier or later version you may need to add or subtract 1 year to achieve similar results.)

Task 1:

- Open the **Lesson 5 Profit Margin analysis**.
- Add an **Average** and an **Accumulated Average** calculation to the Profit Margin per Time bar chart.
- Add a **Count Members** calculation to the Profit Margin per Product Hierarchy crosstab.
- Add an **Average** calculation to the Profit and Profit Margin per Customer Country bar chart.

The result should look like this (dynamic date origin set to 11 November 2018):

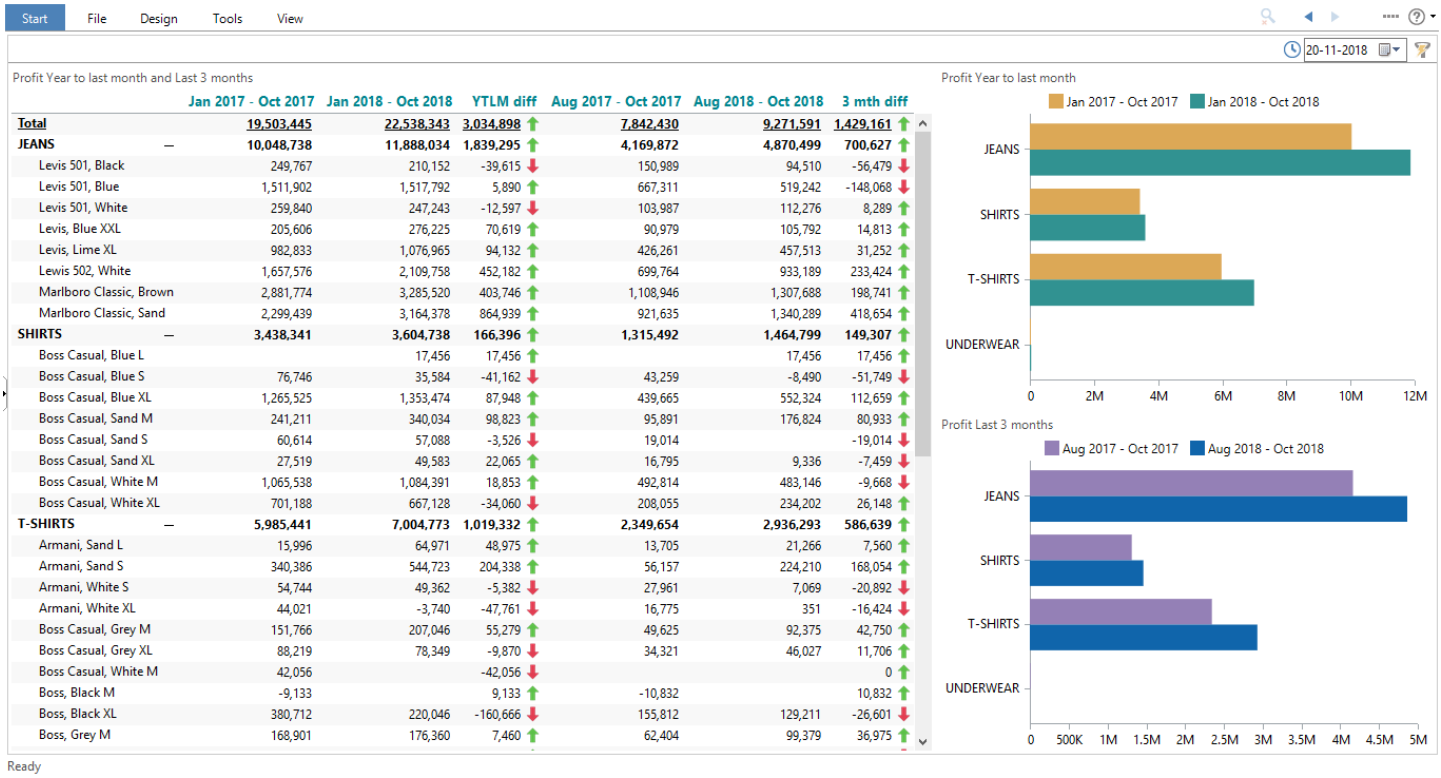


Save the analysis as **Lesson 7 Profit Margin analysis**.

Task 2:

- Open the **Lesson 6 YTLM and last 3 months analysis**.
- Add two calculations:
  - **YTLM diff:** Difference between column 1 and 2.
  - **3 mth diff:** Difference between column 3 and 4.
- Add positive and negative icon agents to the calculations.

The result should look like this (dynamic date origin set to 20 November 2018):



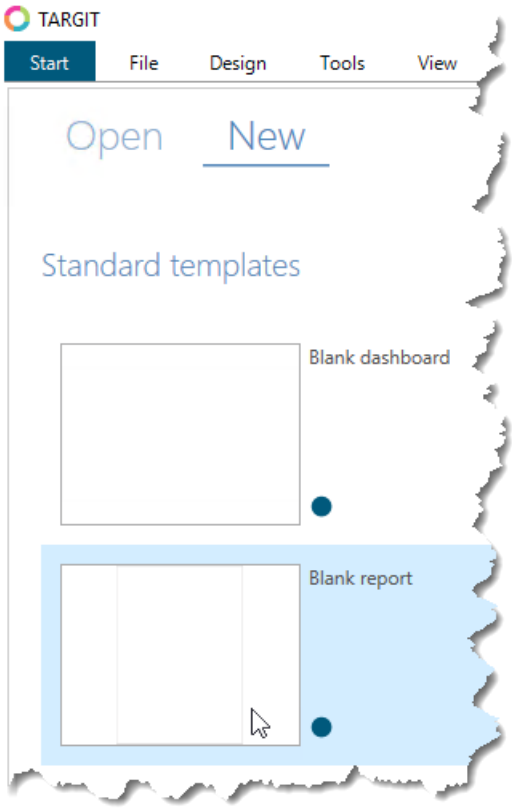
	Jan 2017 - Oct 2017	Jan 2018 - Oct 2018	YTLM diff	Aug 2017 - Oct 2017	Aug 2018 - Oct 2018	3 mth diff
Total	**19,503,445**	**22,538,343**	**3,034,898**	**7,842,430**	**9,271,591**	**1,429,161**
JEANS	**10,048,738**	**11,888,034**	**1,839,295**	**4,169,872**	**4,870,499**	**700,627**
Levis 501, Black	249,767	210,152	-39,615	150,989	94,510	-56,479
Levis 501, Blue	1,511,902	1,517,792	5,890	667,311	519,242	-148,068
Levis 501, White	259,840	247,243	-12,597	103,987	112,276	8,289
Levis, Blue XXL	205,606	276,225	70,619	90,979	105,792	14,813
Levis, Lime XL	982,833	1,076,965	94,132	426,261	457,513	31,252
Lewis 502, White	1,657,576	2,109,758	452,182	699,764	933,189	233,424
Marlboro Classic, Brown	2,881,774	3,285,520	403,746	1,108,946	1,307,688	198,741
Marlboro Classic, Sand	2,299,439	3,164,378	864,939	921,635	1,340,289	418,654
SHIRTS	**3,438,341**	**3,604,738**	**166,396**	**1,315,492**	**1,464,799**	**149,307**
Boss Casual, Blue L		17,456	17,456		17,456	17,456
Boss Casual, Blue S	76,746	35,584	-41,162	43,259	-8,490	-51,749
Boss Casual, Blue XL	1,265,525	1,353,474	87,948	439,665	552,324	112,659
Boss Casual, Sand M	241,211	340,034	98,823	95,891	176,824	80,933
Boss Casual, Sand S	60,614	57,088	-3,526	19,014		-19,014
Boss Casual, Sand XL	27,519	49,583	22,065	16,795	9,336	-7,459
Boss Casual, White M	1,065,538	1,084,391	18,853	492,814	483,146	-9,668
Boss Casual, White XL	701,188	667,128	-34,060	208,055	234,202	26,148
T-SHIRTS	**5,985,441**	**7,004,773**	**1,019,332**	**2,349,654**	**2,936,293**	**586,639**
Armani, Sand L	15,996	64,971	48,975	13,705	21,266	7,560
Armani, Sand S	340,386	544,723	204,338	56,157	224,210	168,054
Armani, White S	54,744	49,362	-5,382	27,961	7,069	-20,892
Armani, White XL	44,021	-3,740	-47,761	16,775	351	-16,424
Boss Casual, Grey M	151,766	207,046	55,279	49,625	92,375	42,750
Boss Casual, Grey XL	88,219	78,349	-9,870	34,321	46,027	11,706
Boss Casual, White M	42,056		-42,056			0
Boss, Black M	-9,133		9,133	-10,832		10,832
Boss, Black XL	380,712	220,046	-160,666	155,812	129,211	-26,601
Boss, Grey M	168,901	176,360	7,460	62,404	99,379	36,975

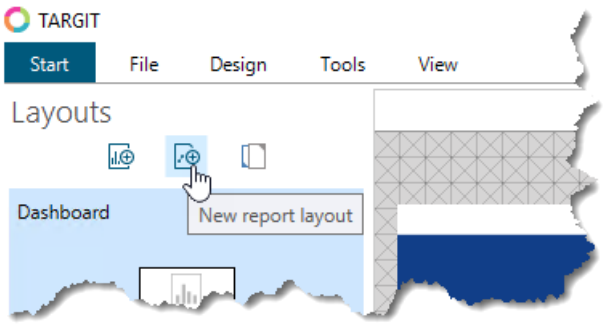
Save the analysis as **Lesson 7 YTLM and latest 3 mths analysis**.

Tip: The right alignment of the green and red arrows is a property of the individual color agents. Look for *Action / Right justify in cell*.

Lesson 8: Report Layouts

When working with a document, whether that is a new document or an existing one, you can add a *Report layout* to the document.





A Report is something that you would typically design for printing purposes – either print to paper or print to PDF.

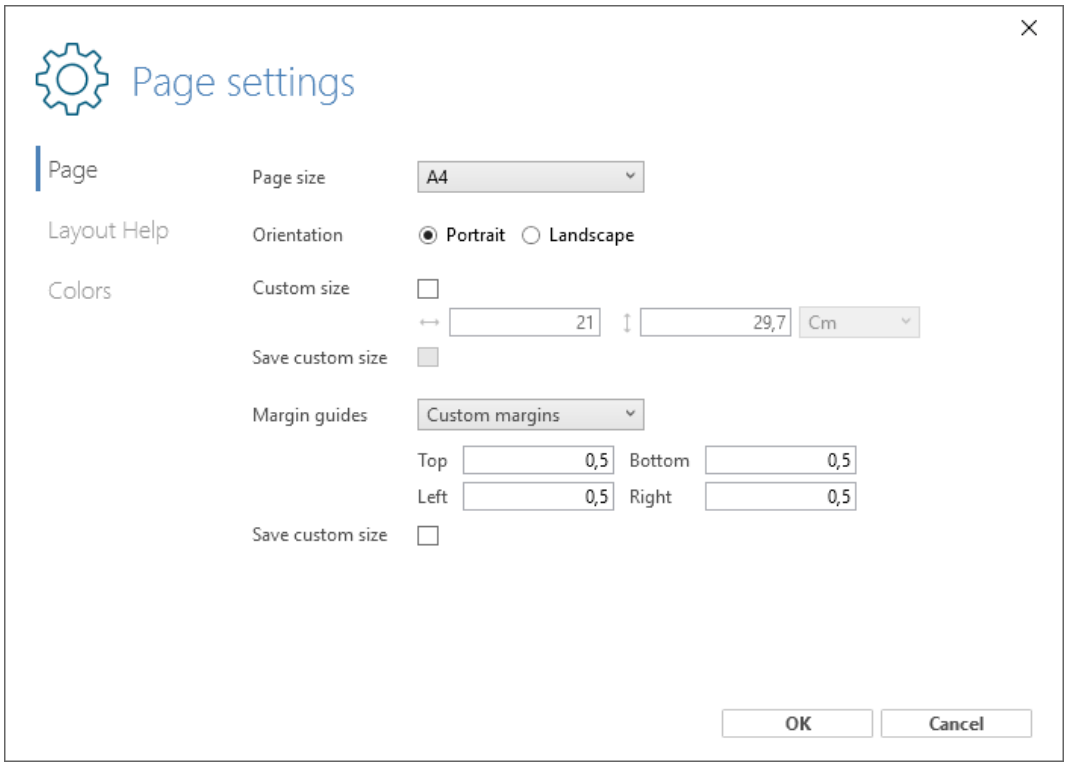
The essence of adding data to a Report Layout - crosstabs, graphs, KPI objects etc. - is identical to that of adding data to a Dashboard Layout.

You can even have a Document with both layout types - Dashboard Layouts and Report Layouts - sharing objects from the Objects list.

Report Layouts differ from Dashboard Layouts mainly on these topics:

- **Pages.** A Report Layout may contain multiple pages with different layout and different content on each page. Pages can be of different sizes and formats.
- **Repeater page**. The *Repeater page* in a Report Layout repeats content on as many pages as necessary. E.g. a very long crosstab may need to be repeated (continued) across multiple pages to show all the data.

If necessary, you may want to visit the Page Settings dialog for setting page size, orientation and margins.

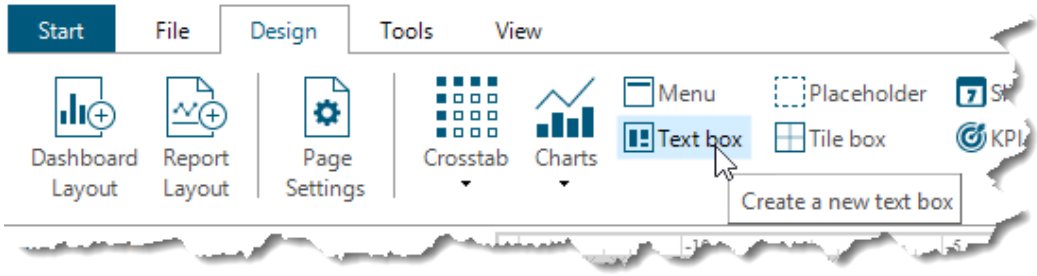


On the Layout Help tab, you can also enable the Ruler, and now your report, in Design mode, may look like this:

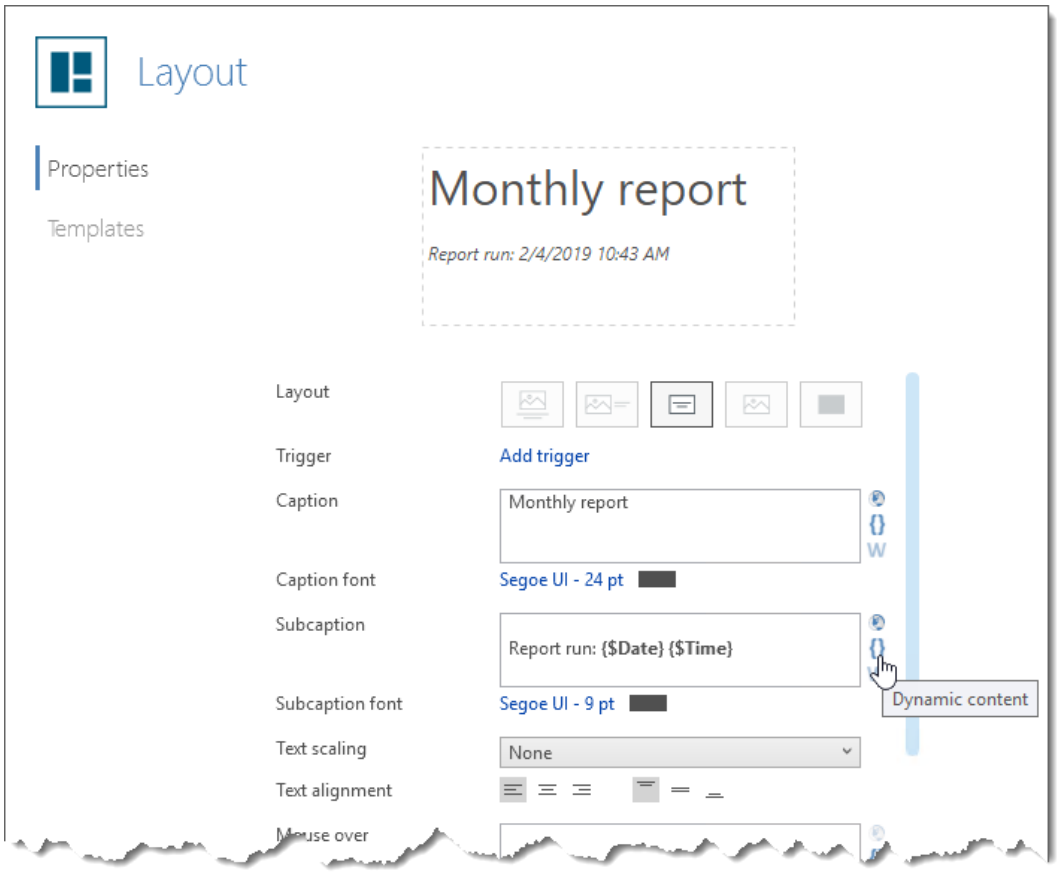
Page header and Page footer

Everything you add on the first page of your report layout will be repeated on the following pages – unless you specify that is shouldn't. More about that, when we look into *repeater pages*.

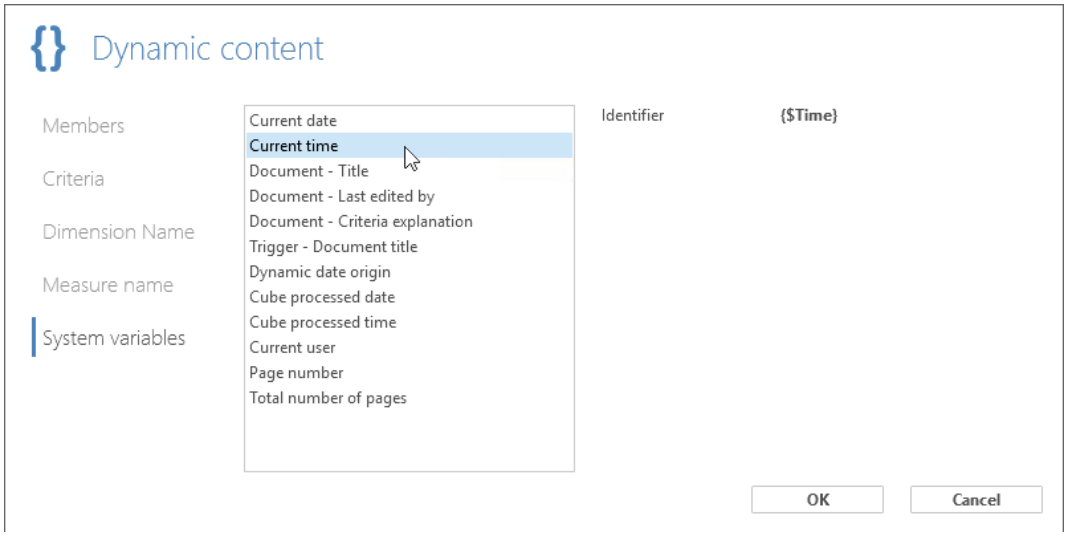
Page headers and footers would typically be added as Layout boxes with text, dynamic content or images.



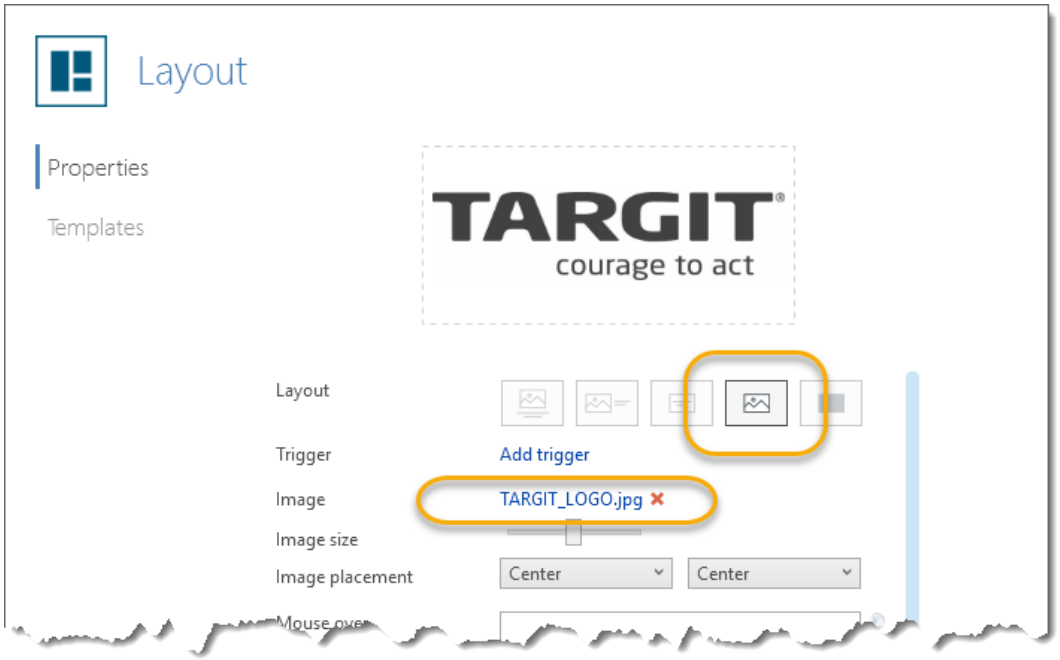
In this example, we are using the Caption and Subcaption fields of a text box to design the report header:



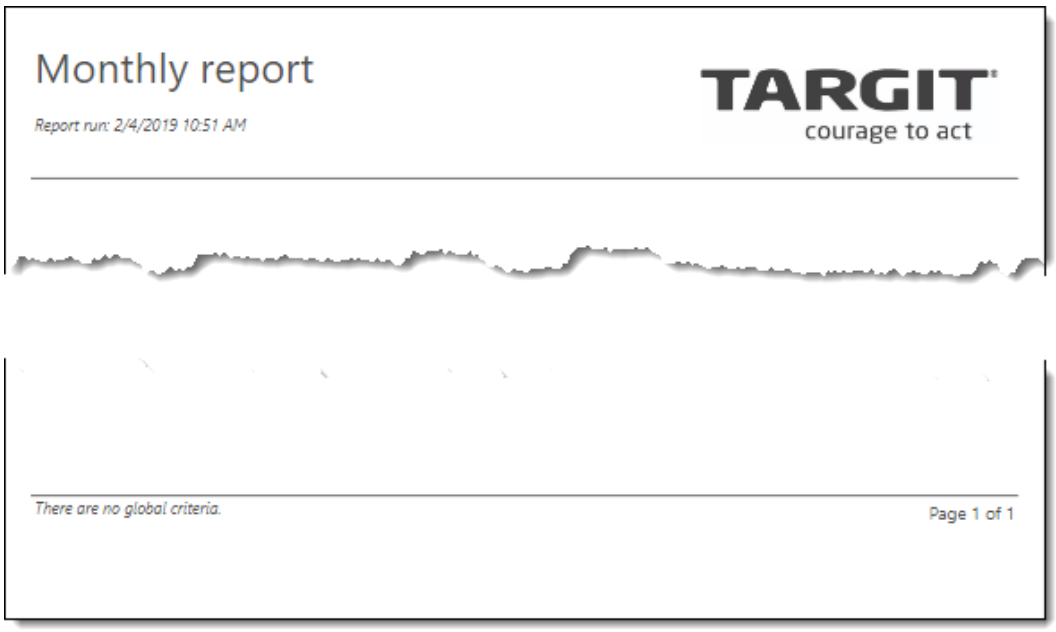
The Subcaption is made up from a mix of fixed text together with dynamic text. The dynamic content dialog offers a number of System variables that may be quite useful for report headers or footers:



To add an image, e.g. a company logo, you will also start out with a Layout object, which you will then turn into the Image layout type and then add the image from a file browser.



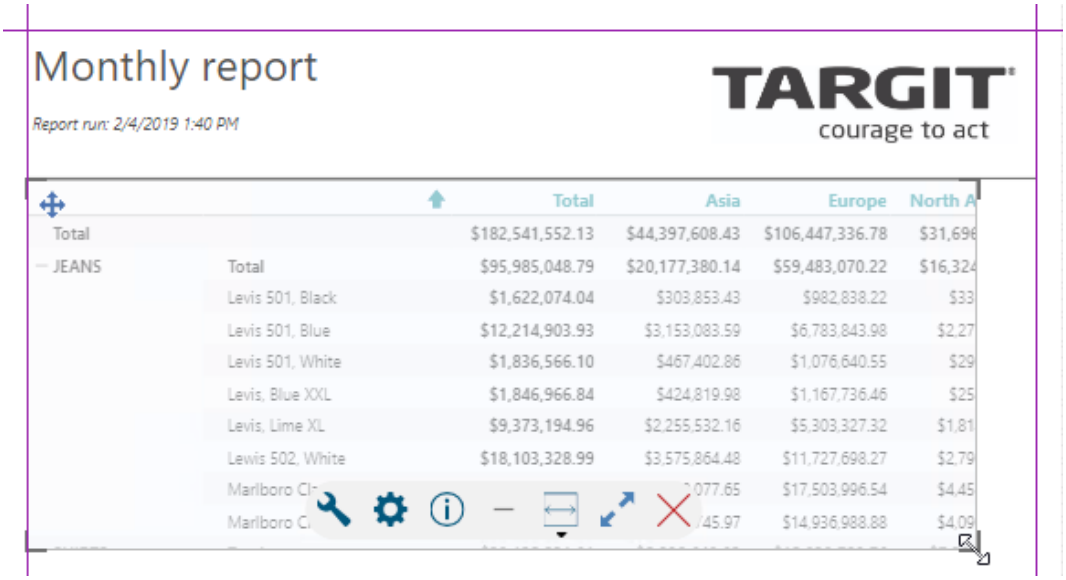
The report's header and footer may eventually become something like this:



In the footer, two text boxes have been used – one with a *criteria explanation* dynamic element, and the other with *page* and *page total* dynamic elements.

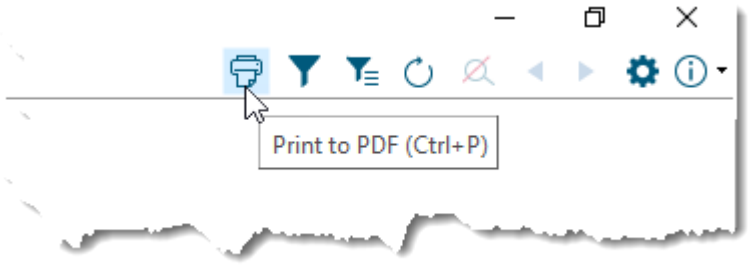
PDF Output

If we furthermore add a crosstab to the area between the header and the footer, we would end up with something that might be a complete report.

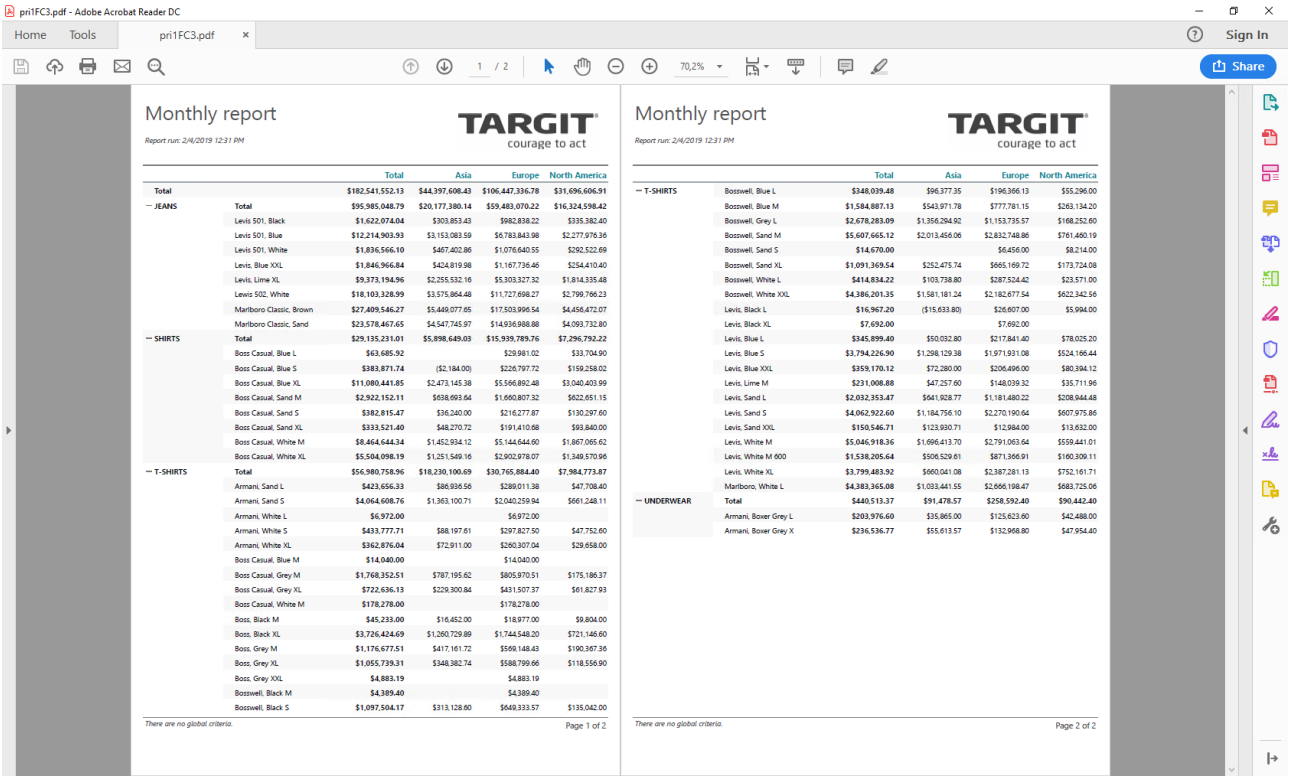


Notice that if you add a crosstab that is bigger than a single page, then the report will automatically add the necessary additional pages in the output.

The TARGIT client does not offer an option to preview a multi-page report – you will only be able to preview the first page in Consumer mode. However, hitting the *Print to PDF* button in the mini menu will immediately produce and present a PDF file with all pages.



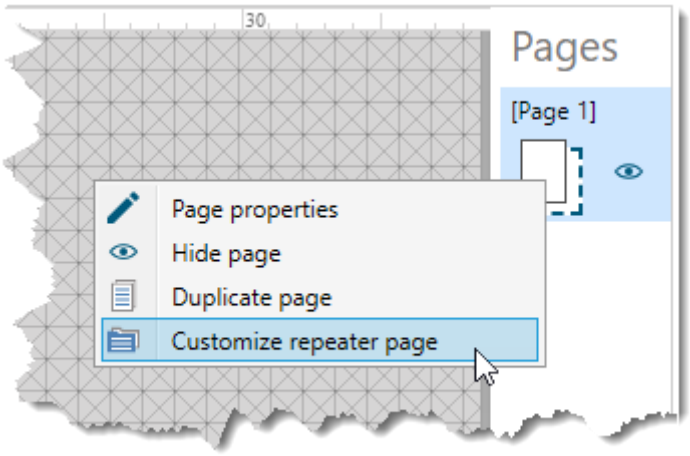
This is what the report might look like in the resulting PDF file:



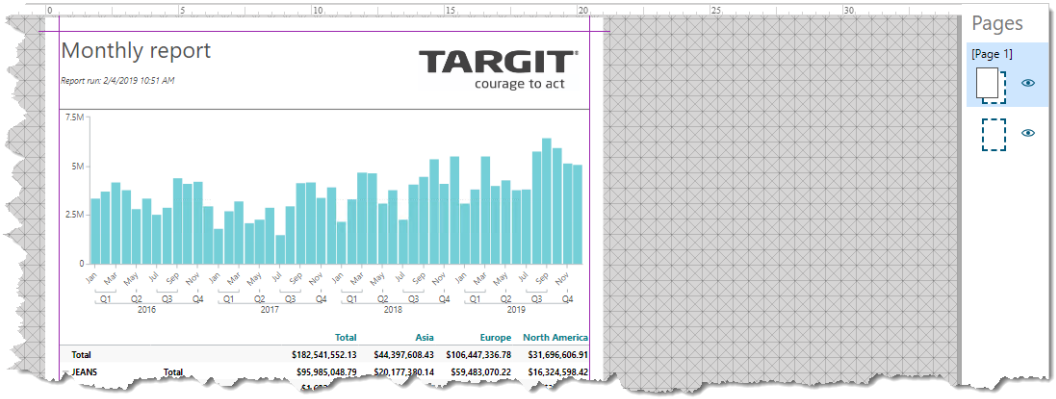
Repeater pages

As we saw from above, the report layout will automatically repeat (continue) a crosstab on the following pages, for as many pages as necessary to show the full crosstab.

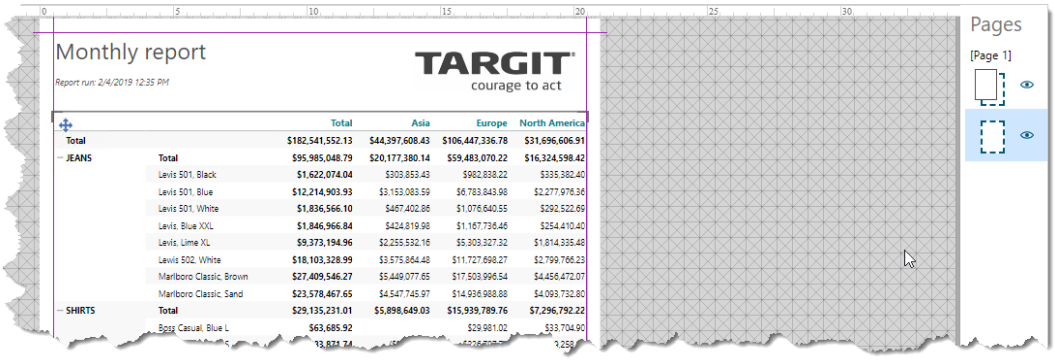
As you start to insert other objects in your report layout, you may need to *Customize repeater page*. If you don't, all objects on the first page will be repeated – and usually you don't want that.



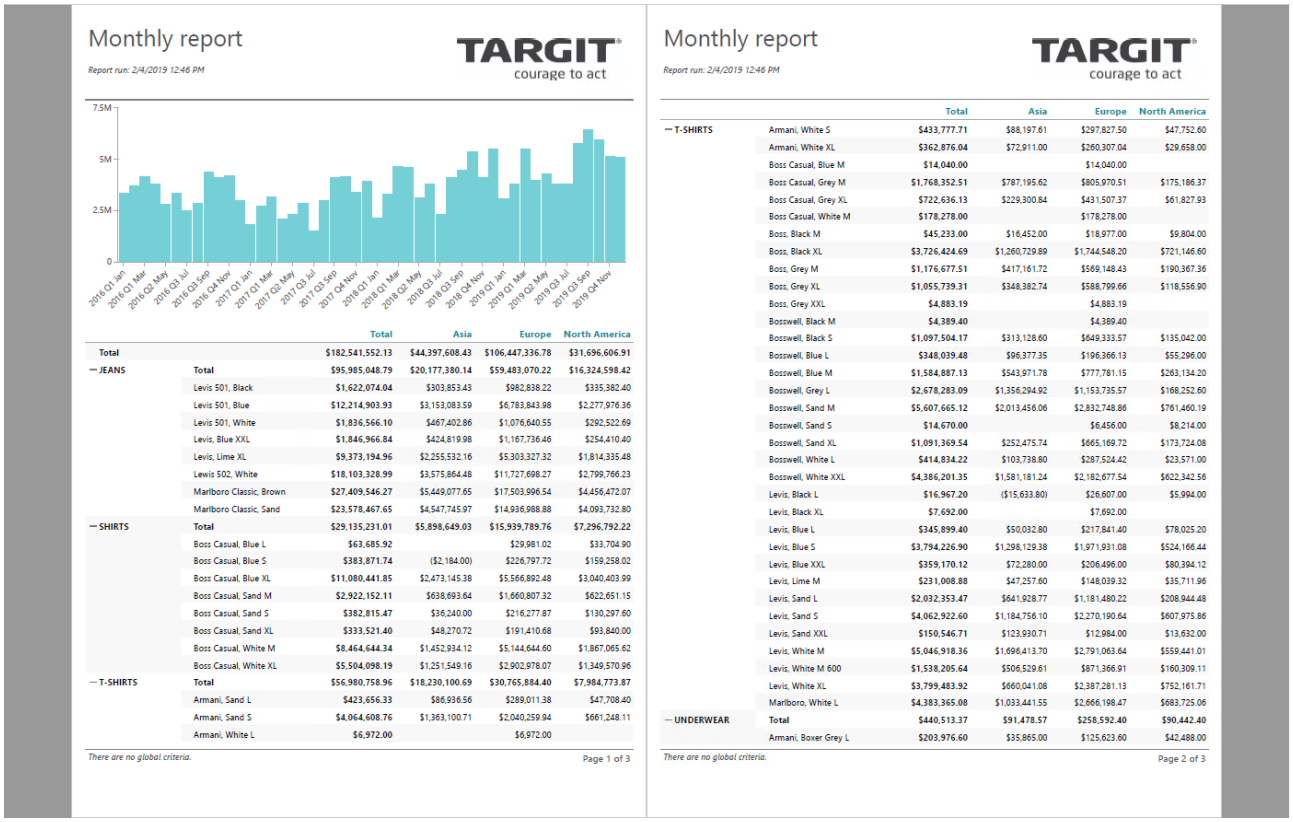
In this example, we have added a column chart to the first page. If we just used the default repeater page functionality, the (same) column chart would be repeated on every single page.



However, we want the column chart to appear on the first page only, so, on the customized repeater page we will actively *remove* the column chart so that only the crosstab will remain:



When printed to PDF, it will look like this:



Monthly report

Report run: 2/4/2019 12:46 PM

TARGIT courage to act

		Total	Asia	Europe	North America
Total		$182,541,552.13	$44,397,608.43	$106,447,336.78	$31,696,606.91
− JEANS	Total	$95,985,048.79	$20,177,380.14	$59,483,070.22	$16,324,598.42
	Levis 501, Black	$1,622,074.04	$303,853.43	$982,838.22	$335,382.40
	Levis 501, Blue	$12,214,903.93	$3,153,083.59	$6,783,843.98	$2,277,976.36
	Levis 501, White	$1,836,566.10	$467,402.86	$1,076,640.55	$292,522.69
	Levis, Blue XXL	$1,846,966.84	$424,819.98	$1,167,736.46	$254,410.40
	Levis, Lime XL	$9,373,194.96	$2,255,532.16	$5,303,327.32	$1,814,335.48
	Lewis 502, White	$18,103,328.99	$3,575,864.48	$11,727,698.27	$2,799,766.23
	Marlboro Classic, Brown	$27,409,546.27	$5,449,077.65	$17,503,996.54	$4,456,472.07
	Marlboro Classic, Sand	$23,578,467.65	$4,547,745.97	$14,936,988.88	$4,093,732.80
− SHIRTS	Total	$29,135,231.01	$5,898,649.03	$15,939,789.76	$7,296,792.22
	Boss Casual, Blue L	$63,685.92		$29,981.02	$33,704.90
	Boss Casual, Blue S	$383,871.74	($2,184.00)	$226,797.72	$159,258.02
	Boss Casual, Blue XL	$11,080,441.85	$2,473,145.38	$5,566,892.48	$3,040,403.99
	Boss Casual, Sand M	$2,922,152.11	$638,693.64	$1,660,807.32	$622,651.15
	Boss Casual, Sand S	$382,815.47	$36,240.00	$216,277.87	$130,297.60
	Boss Casual, Sand XL	$333,521.40	$48,270.72	$191,410.68	$93,840.00
	Boss Casual, White M	$8,464,644.34	$1,452,934.12	$5,144,644.60	$1,867,065.62
	Boss Casual, White XL	$5,504,098.19	$1,251,549.16	$2,902,978.07	$1,349,570.96
− T-SHIRTS	Total	$56,980,758.96	$18,230,100.69	$30,765,884.40	$7,984,773.87
	Armani, Sand L	$423,656.33	$86,936.56	$289,011.38	$47,708.40
	Armani, Sand S	$4,064,608.76	$1,363,100.71	$2,040,259.94	$661,248.11
	Armani, White L	$6,972.00		$6,972.00	

There are no global criteria.

Page 1 of 3

Monthly report

Report run: 2/4/2019 12:46 PM

TARGIT courage to act

		Total	Asia	Europe	North America
− T-SHIRTS	Armani, White S	$433,777.71	$88,197.61	$297,827.50	$47,752.60
	Armani, White XL	$362,876.04	$72,911.00	$260,307.04	$29,658.00
	Boss Casual, Blue M	$14,040.00		$14,040.00	
	Boss Casual, Grey M	$1,768,352.51	$787,195.62	$805,970.51	$175,186.37
	Boss Casual, Grey XL	$722,636.13	$229,300.84	$431,507.37	$61,827.93
	Boss Casual, White M	$178,278.00		$178,278.00	
	Boss, Black M	$45,233.00	$16,452.00	$18,977.00	$9,804.00
	Boss, Black XL	$3,726,424.69	$1,260,729.89	$1,744,548.20	$721,146.60
	Boss, Grey M	$1,176,677.51	$417,161.72	$569,148.43	$190,367.36
	Boss, Grey XL	$1,055,739.31	$348,382.74	$588,799.66	$118,556.90
	Boss, Grey XXL	$4,883.19		$4,883.19	
	Bosswell, Black M	$4,389.40		$4,389.40	
	Bosswell, Black S	$1,097,504.17	$313,128.60	$649,333.57	$135,042.00
	Bosswell, Blue L	$348,039.48	$96,377.35	$196,366.13	$55,296.00
	Bosswell, Blue M	$1,584,887.13	$543,971.78	$777,781.15	$263,134.20
	Bosswell, Grey L	$2,678,283.09	$1,356,294.92	$1,153,735.57	$168,252.60
	Bosswell, Sand M	$5,607,665.12	$2,013,456.06	$2,832,748.86	$761,460.19
	Bosswell, Sand S	$14,670.00		$6,456.00	$8,214.00
	Bosswell, Sand XL	$1,091,369.54	$252,475.74	$665,169.72	$173,724.08
	Bosswell, White L	$414,834.22	$103,738.80	$287,524.42	$23,571.00
	Bosswell, White XXL	$4,386,201.35	$1,581,181.24	$2,182,677.54	$622,342.56
	Levis, Black L	$16,967.20	($15,633.80)	$26,607.00	$5,994.00
	Levis, Black XL	$7,692.00		$7,692.00	
	Levis, Blue L	$345,899.40	$50,032.80	$217,841.40	$78,025.20
	Levis, Blue S	$3,794,226.90	$1,298,129.38	$1,971,931.08	$524,166.44
	Levis, Blue XXL	$359,170.12	$72,280.00	$206,496.00	$80,394.12
	Levis, Lime M	$231,008.88	$47,257.60	$148,039.32	$35,711.96
	Levis, Sand L	$2,032,353.47	$641,928.77	$1,181,480.22	$208,944.48
	Levis, Sand S	$4,062,922.60	$1,184,756.10	$2,270,190.64	$607,975.86
	Levis, Sand XXL	$150,546.71	$123,930.71	$12,984.00	$13,632.00
	Levis, White M	$5,046,918.36	$1,696,413.70	$2,791,063.64	$559,441.01
	Levis, White M 600	$1,538,205.64	$506,529.61	$871,366.91	$160,309.11
	Levis, White XL	$3,799,483.92	$660,041.08	$2,387,281.13	$752,161.71
	Marlboro, White L	$4,383,365.08	$1,033,441.55	$2,666,198.47	$683,725.06
− UNDERWEAR	Total	$440,513.37	$91,478.57	$258,592.40	$90,442.40
	Armani, Boxer Grey L	$203,976.60	$35,865.00	$125,623.60	$42,488.00

There are no global criteria.

Page 2 of 3

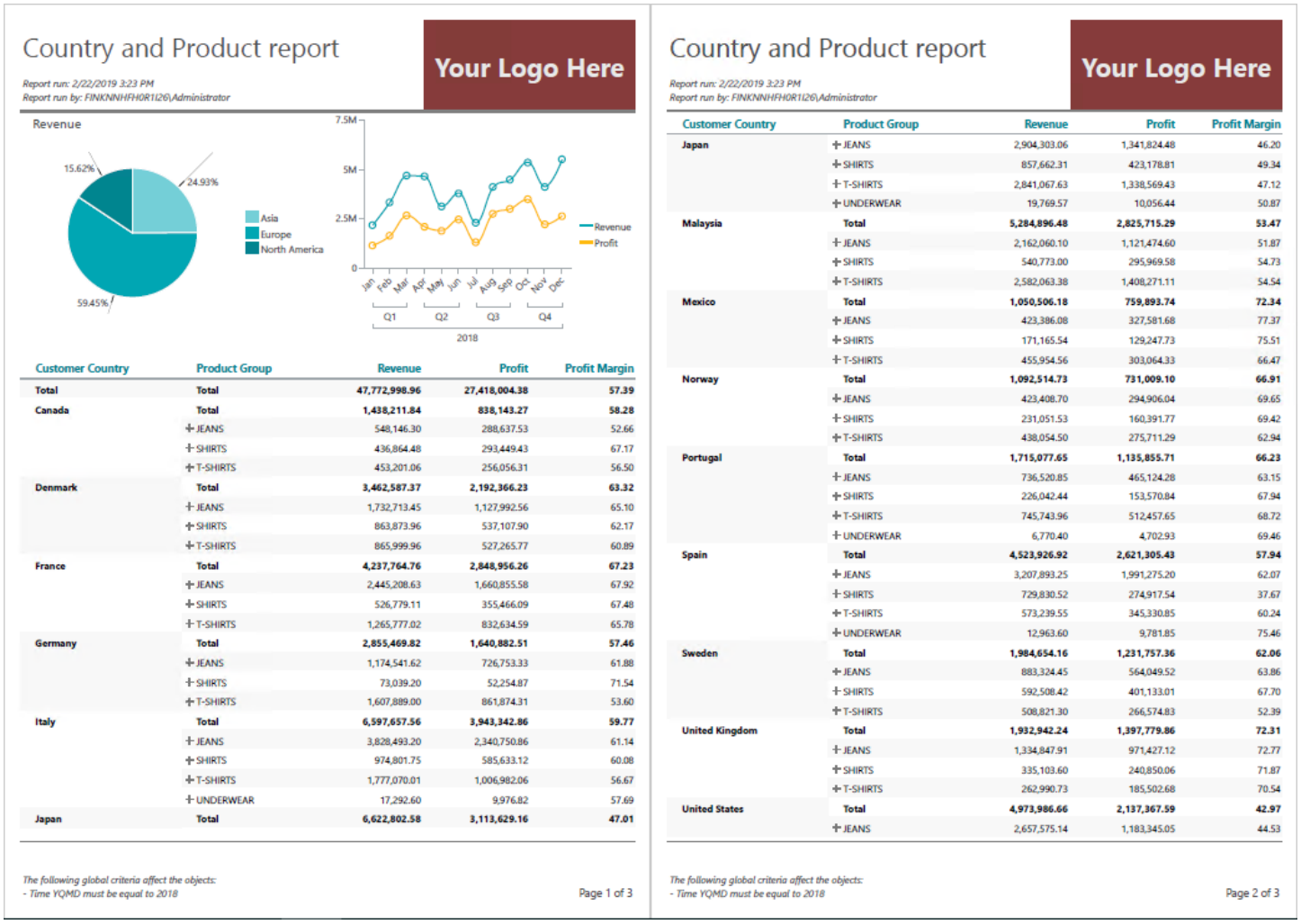
Exercises Lesson 8

(Screenshots and exercises are based on version 2019.0 demo data. If you are working on an earlier or later version you may need to add or subtract 1 year to achieve similar results.)

Task 1:

Create a report like this.

From the Internet, download and insert your own logo in the header.



Country and Product report

Your Logo Here

Report run: 2/22/2019 3:23 PM
Report run by: FINKNNHFH0R1I26\Administrator

Revenue

Customer Country	Product Group	Revenue	Profit	Profit Margin
Total	**Total**	**47,772,998.96**	**27,418,004.38**	**57.39**
Canada	**Total**	**1,438,211.84**	**838,143.27**	**58.28**
	+ JEANS	548,146.30	288,637.53	52.66
	+ SHIRTS	436,864.48	293,449.43	67.17
	+ T-SHIRTS	453,201.06	256,056.31	56.50
Denmark	**Total**	**3,462,587.37**	**2,192,366.23**	**63.32**
	+ JEANS	1,732,713.45	1,127,992.56	65.10
	+ SHIRTS	863,873.96	537,107.90	62.17
	+ T-SHIRTS	865,999.96	527,265.77	60.89
France	**Total**	**4,237,764.76**	**2,848,956.26**	**67.23**
	+ JEANS	2,445,208.63	1,660,855.58	67.92
	+ SHIRTS	526,779.11	355,466.09	67.48
	+ T-SHIRTS	1,265,777.02	832,634.59	65.78
Germany	**Total**	**2,855,469.82**	**1,640,882.51**	**57.46**
	+ JEANS	1,174,541.62	726,753.33	61.88
	+ SHIRTS	73,039.20	52,254.87	71.54
	+ T-SHIRTS	1,607,889.00	861,874.31	53.60
Italy	**Total**	**6,597,657.56**	**3,943,342.86**	**59.77**
	+ JEANS	3,828,493.20	2,340,750.86	61.14
	+ SHIRTS	974,801.75	585,633.12	60.08
	+ T-SHIRTS	1,777,070.01	1,006,982.06	56.67
	+ UNDERWEAR	17,292.60	9,976.82	57.69
Japan	**Total**	**6,622,802.58**	**3,113,629.16**	**47.01**

The following global criteria affect the objects:
- Time YQMD must be equal to 2018

Page 1 of 3

Country and Product report

Your Logo Here

Report run: 2/22/2019 3:23 PM
Report run by: FINKNNHFH0R1I26\Administrator

Customer Country	Product Group	Revenue	Profit	Profit Margin
Japan	+ JEANS	2,904,303.06	1,341,824.48	46.20
	+ SHIRTS	857,662.31	423,178.81	49.34
	+ T-SHIRTS	2,841,067.63	1,338,569.43	47.12
	+ UNDERWEAR	19,769.57	10,056.44	50.87
Malaysia	**Total**	**5,284,896.48**	**2,825,715.29**	**53.47**
	+ JEANS	2,162,060.10	1,121,474.60	51.87
	+ SHIRTS	540,773.00	295,969.58	54.73
	+ T-SHIRTS	2,582,063.38	1,408,271.11	54.54
Mexico	**Total**	**1,050,506.18**	**759,893.74**	**72.34**
	+ JEANS	423,386.08	327,581.68	77.37
	+ SHIRTS	171,165.54	129,247.73	75.51
	+ T-SHIRTS	455,954.56	303,064.33	66.47
Norway	**Total**	**1,092,514.73**	**731,009.10**	**66.91**
	+ JEANS	423,408.70	294,906.04	69.65
	+ SHIRTS	231,051.53	160,391.77	69.42
	+ T-SHIRTS	438,054.50	275,711.29	62.94
Portugal	**Total**	**1,715,077.65**	**1,135,855.71**	**66.23**
	+ JEANS	736,520.85	465,124.28	63.15
	+ SHIRTS	226,042.44	153,570.84	67.94
	+ T-SHIRTS	745,743.96	512,457.65	68.72
	+ UNDERWEAR	6,770.40	4,702.93	69.46
Spain	**Total**	**4,523,926.92**	**2,621,305.43**	**57.94**
	+ JEANS	3,207,893.25	1,991,275.20	62.07
	+ SHIRTS	729,830.52	274,917.54	37.67
	+ T-SHIRTS	573,239.55	345,330.85	60.24
	+ UNDERWEAR	12,963.60	9,781.85	75.46
Sweden	**Total**	**1,984,654.16**	**1,231,757.36**	**62.06**
	+ JEANS	883,324.45	564,049.52	63.86
	+ SHIRTS	592,508.42	401,133.01	67.70
	+ T-SHIRTS	508,821.30	266,574.83	52.39
United Kingdom	**Total**	**1,932,942.24**	**1,397,779.86**	**72.31**
	+ JEANS	1,334,847.91	971,427.12	72.77
	+ SHIRTS	335,103.60	240,850.06	71.87
	+ T-SHIRTS	262,990.73	185,502.68	70.54
United States	**Total**	**4,973,986.66**	**2,137,367.59**	**42.97**
	+ JEANS	2,657,575.14	1,183,345.05	44.53

The following global criteria affect the objects:
- Time YQMD must be equal to 2018

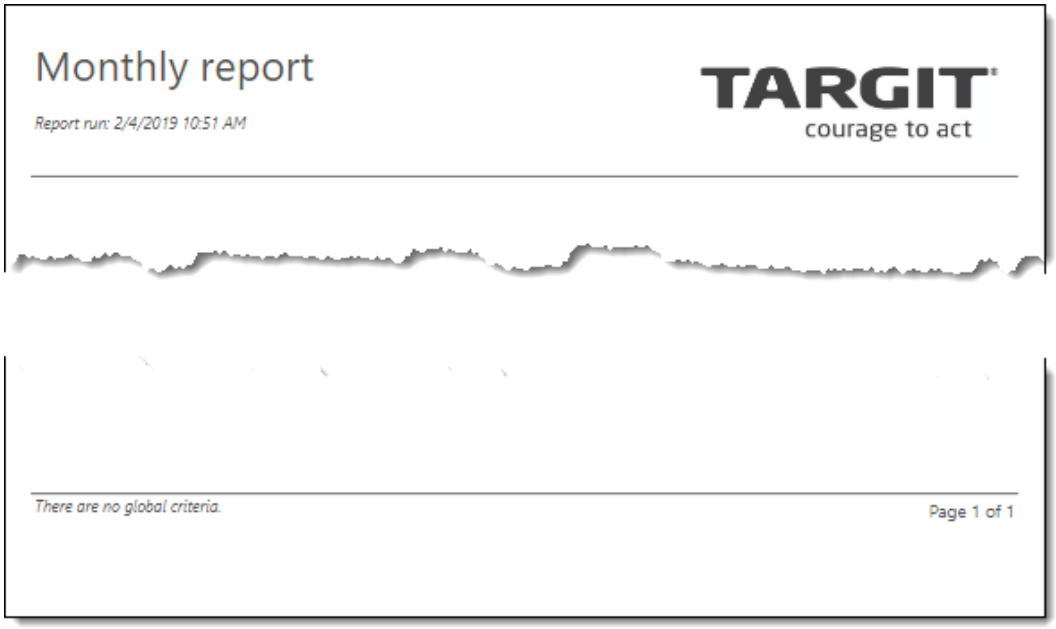
Page 2 of 3

Save it as **Lesson 8 Report**.

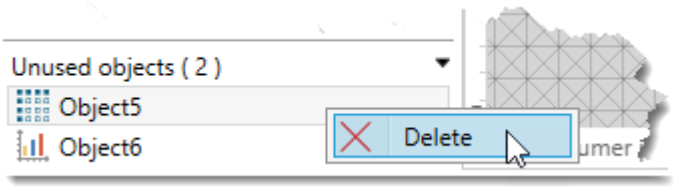
Lesson 9: Templates

The report we just created, especially the layout of the header and footer sections, might be a candidate for a *Template*.

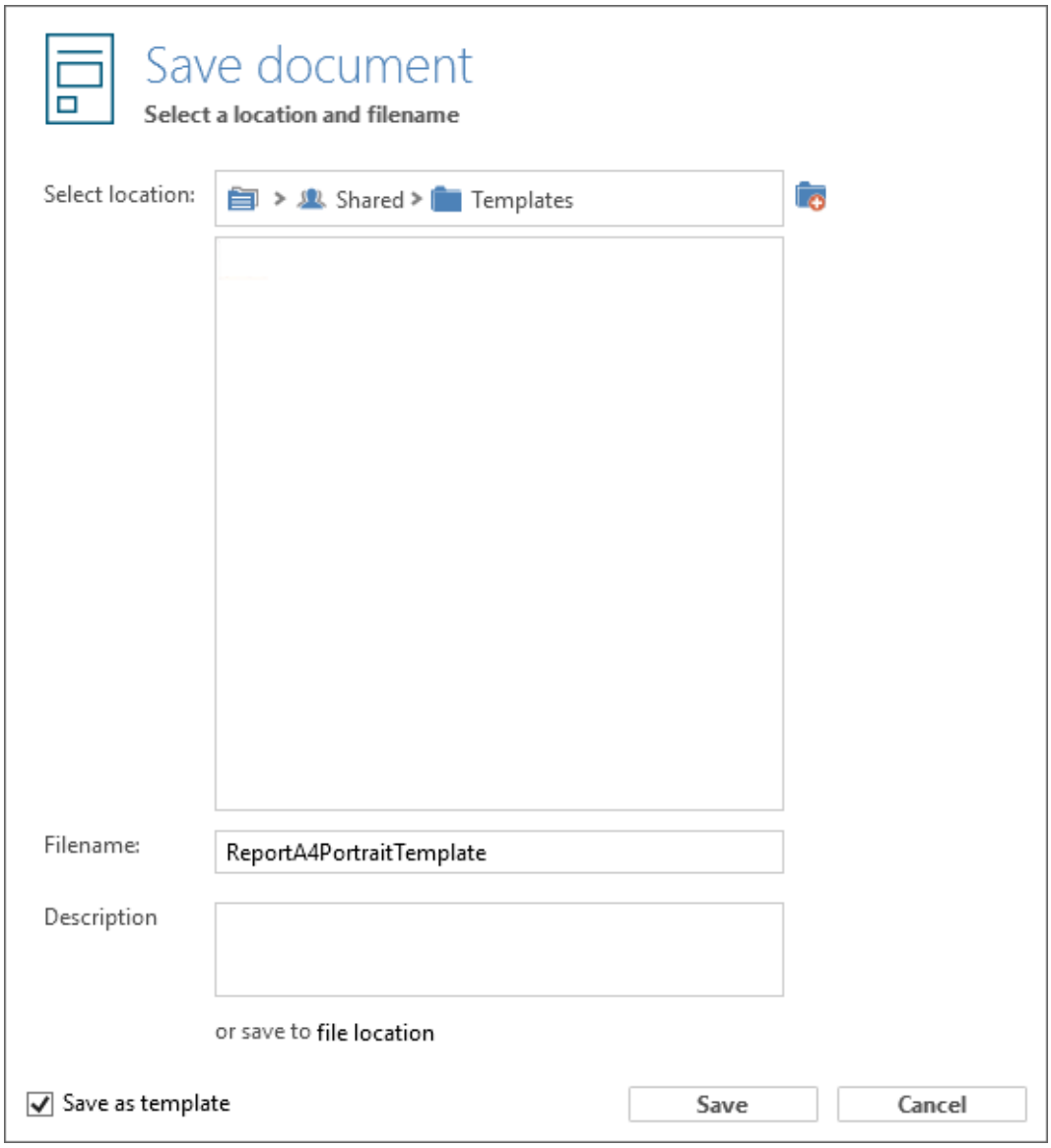
Before we save the report as a template, we should probably remove irrelevant objects. Template irrelevant objects would often be the data objects, such as the charts and the crosstabs. After removal, we should end up with a report with a header and a footer section only.



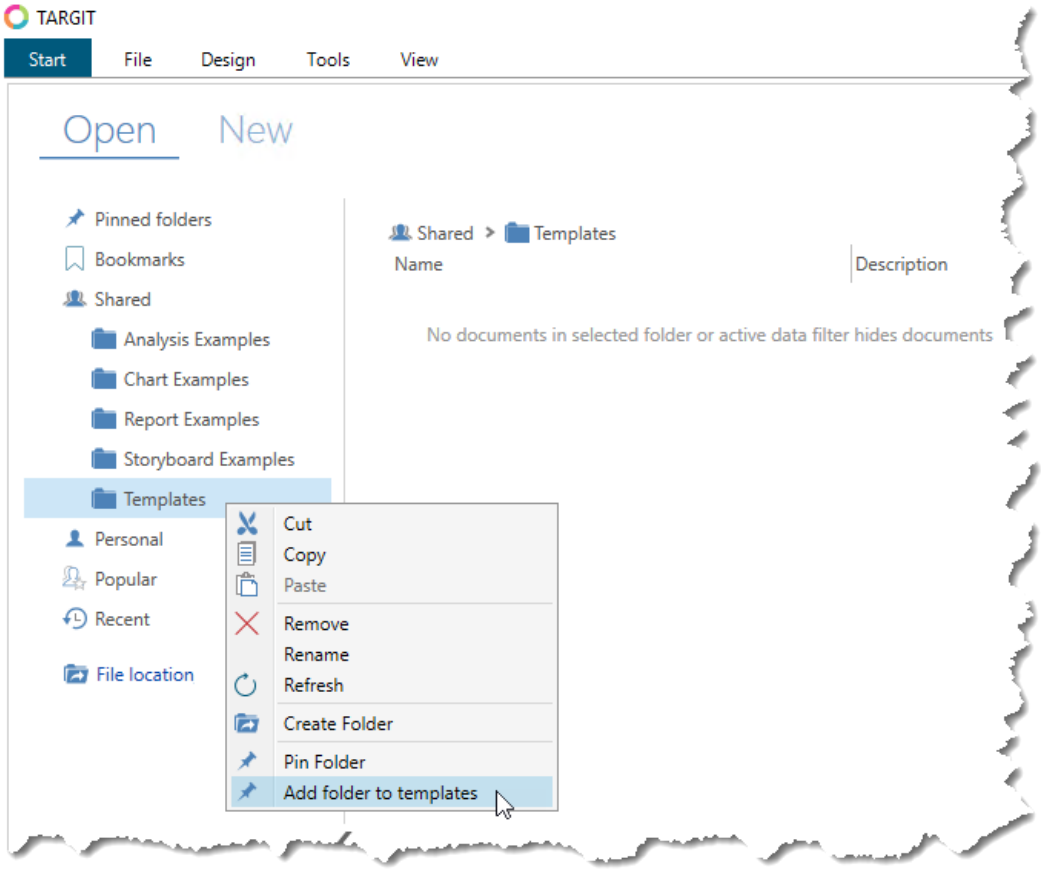
Bear in mind that objects you remove from a page isn't removed from the document – unless you go to your list of *Unused objects* and delete them from there.



At this point we are ready to save it as a template. Notice the *Save as template* checkbox at the bottom of the *Save document* dialog:



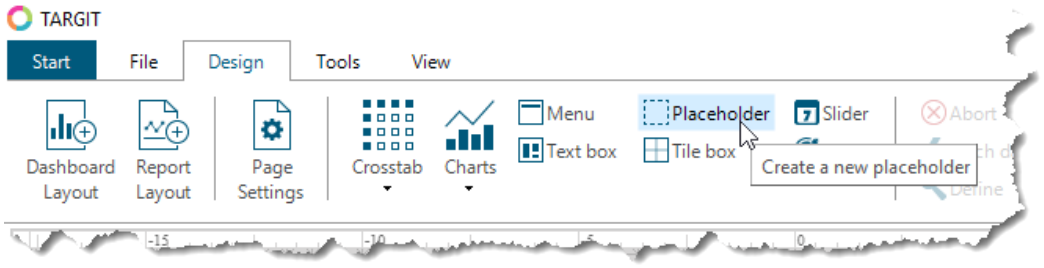
Also, notice that you might want to create a special *Templates* folder for storing this and any future templates. Once you store your templates into a specific folder, you will also need to go to the *Open* tab and right click the folder to *Add the folder to templates*.



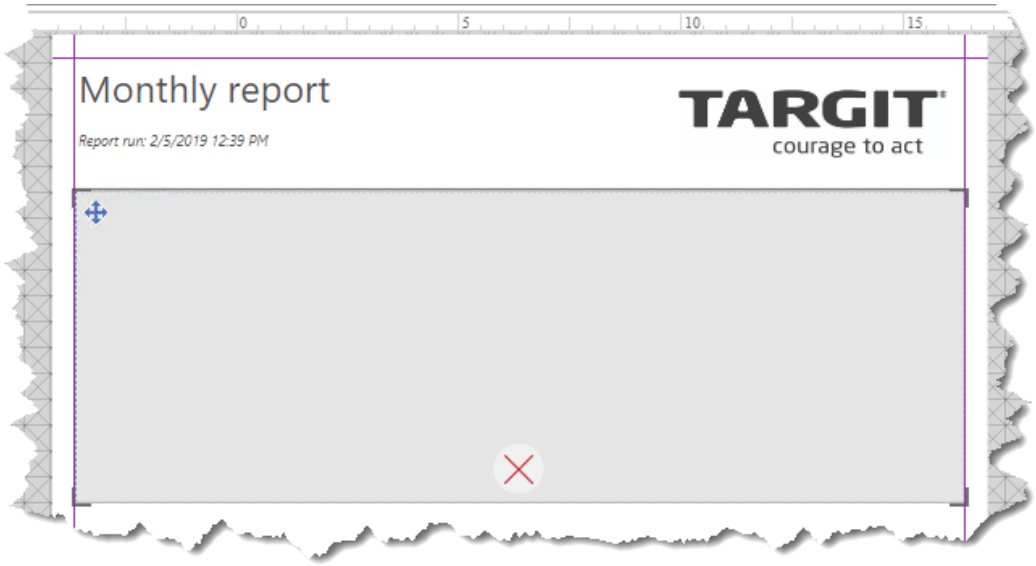
This is necessary to make the folder (and it's templates) available when you create a new document.

Placeholders

A *Placeholder* object is an object you can add to a document with the purpose of later replacing it with another object – e.g. a chart or a crosstab.

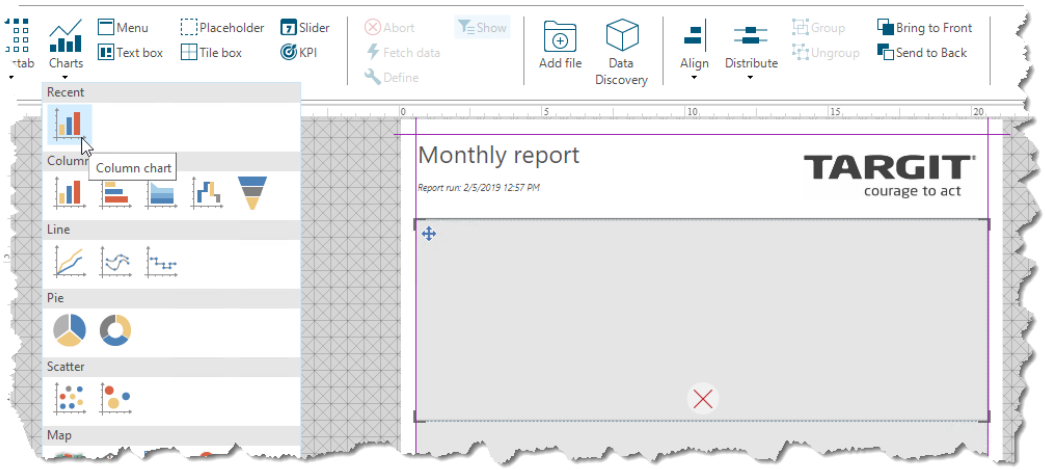


In this way, a Placeholder object works very well with templates. You can designate an area in your report that should later be replaced by a chart, a crosstab or any other type of object.



Note: For the template, consider if any of the Placeholder objects on the parent page should be repeated on the repeater page.

Later, when creating a new document on basis of the template, and you need to replace the Placeholder with a data object, simply select the Placeholder object and then add the object of your choice.



Exercises Lesson 9

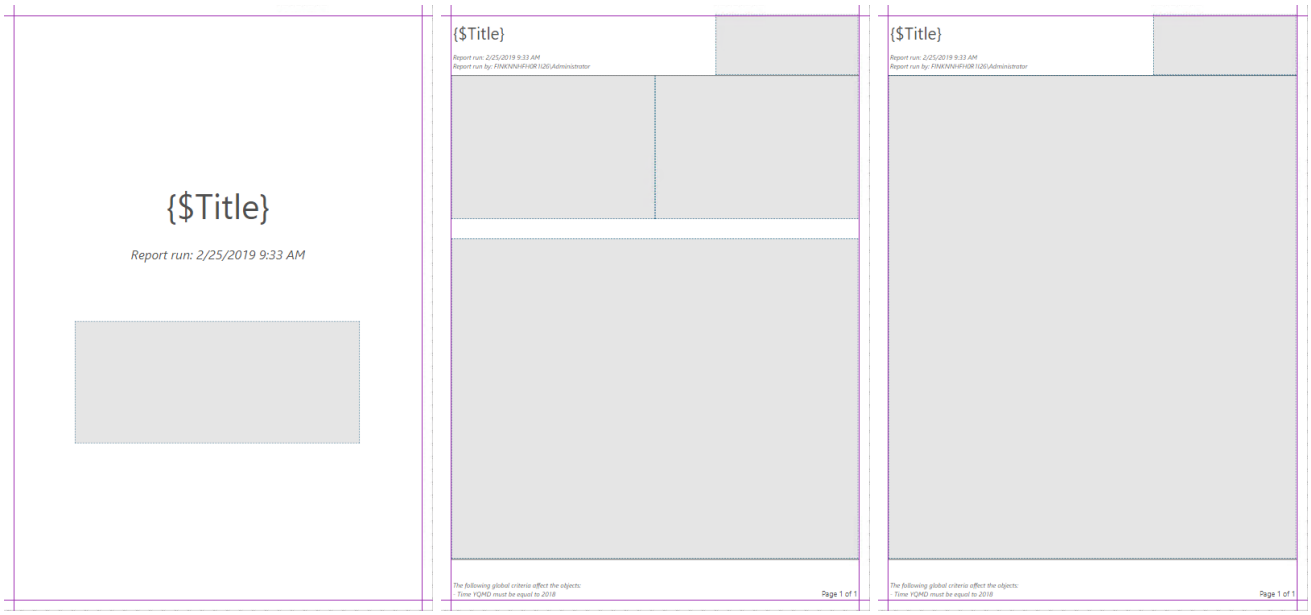
(Screenshots and exercises are based on version 2019.0 demo data. If you are working on an earlier or later version you may need to add or subtract 1 year to achieve similar results.)

Task 1:

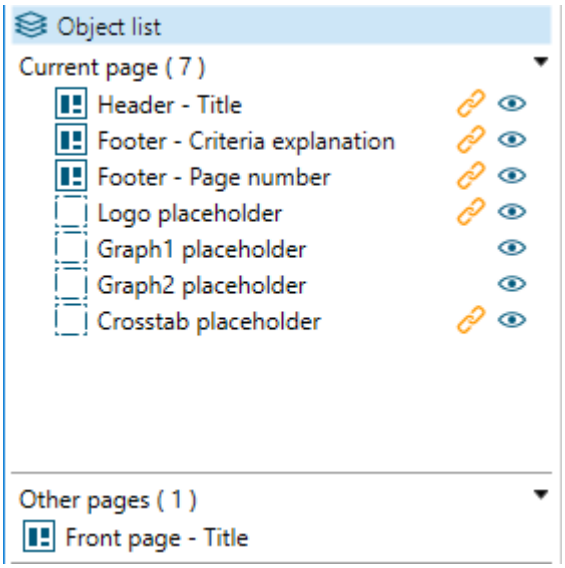
Open the report you created as part of the exercises in the previous lesson.

- Replace graphs, crosstabs etc. with *Placeholder* objects.
- Add a front page with Report title and logo.
- Save it as a template.

Template front page, main page and repeater page:

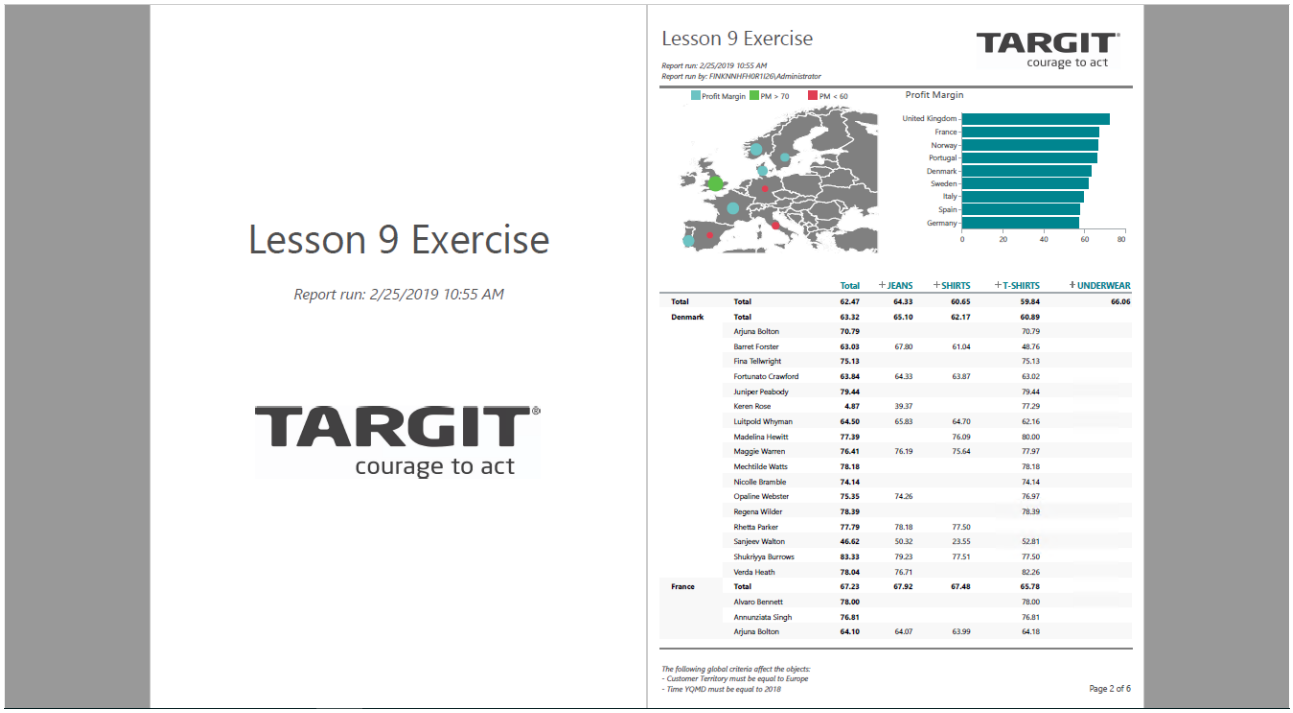


Notice that some of the objects are unique to some of the pages, while other objects are reused across multiple pages.



Task 2:

Use the template to create this report:



Lesson 9 Exercise

Report run: 2/25/2019 10:55 AM

TARGIT
courage to act

Lesson 9 Exercise

TARGIT
courage to act

Report run: 2/25/2019 10:55 AM
Report run by: FINKNNHFH0R1I26\Administrator

Profit Margin | PM > 70 | PM < 60

		Total	JEANS	SHIRTS	T-SHIRTS	UNDERWEAR
Total	**Total**	**62.47**	**64.33**	**60.65**	**59.84**	**66.06**
Denmark	**Total**	**63.32**	**65.10**	**62.17**	**60.89**	
	Arjuna Bolton	**70.79**			70.79	
	Barret Forster	**63.03**	67.80	61.04	48.76	
	Fina Tellwright	**75.13**			75.13	
	Fortunato Crawford	**63.84**	64.33	63.87	63.02	
	Juniper Peabody	**79.44**			79.44	
	Keren Rose	**4.87**	39.37		77.29	
	Luitpold Whyman	**64.50**	65.83	64.70	62.16	
	Madelina Hewitt	**77.39**		76.09	80.00	
	Maggie Warren	**76.41**	76.19	75.64	77.97	
	Mechtilde Watts	**78.18**			78.18	
	Nicolle Bramble	**74.14**			74.14	
	Opaline Webster	**75.35**	74.26		76.97	
	Regena Wilder	**78.39**			78.39	
	Rhetta Parker	**77.79**	78.18	77.50		
	Sanjeev Walton	**46.62**	50.32	23.55	52.81	
	Shukriyya Burrows	**83.33**	79.23	77.51	77.50	
	Verda Heath	**78.04**	76.71		82.26	
France	**Total**	**67.23**	**67.92**	**67.48**	**65.78**	
	Alvaro Bennett	**78.00**			78.00	
	Annunziata Singh	**76.81**			76.81	
	Arjuna Bolton	**64.10**	64.07	63.99	64.18	

The following global criteria affect the objects:
- Customer Territory must be equal to Europe
- Time YQMD must be equal to 2018

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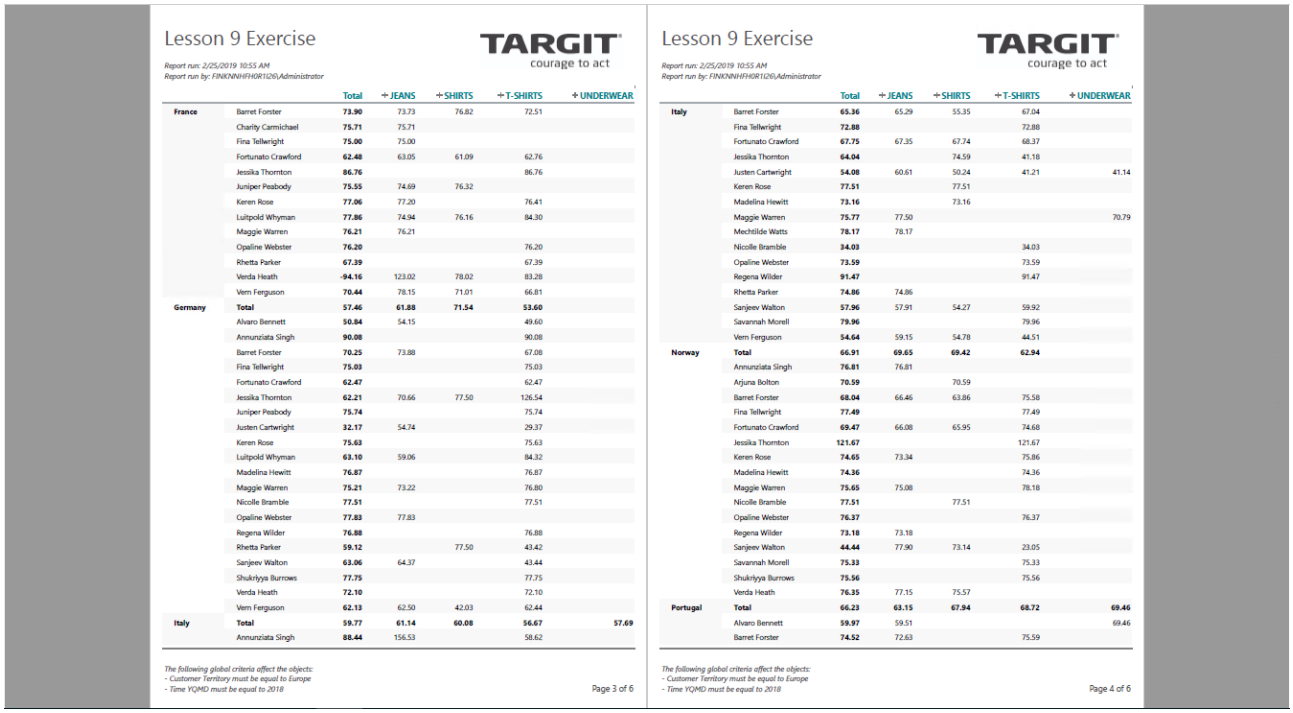

Lesson 9 Exercise

TARGIT
courage to act

Report run: 2/25/2019 10:55 AM
Report run by: FINKNNHFH0R1I26\Administrator

		Total	JEANS	SHIRTS	T-SHIRTS	UNDERWEAR
France	Barret Forster	**73.90**	73.73	76.82	72.51	
	Charity Carmichael	**75.71**	75.71			
	Fina Tellwright	**75.00**	75.00			
	Fortunato Crawford	**62.48**	63.05	61.09	62.76	
	Jessika Thornton	**86.76**			86.76	
	Juniper Peabody	**75.55**	74.69	76.32		
	Keren Rose	**77.06**	77.20		76.41	
	Luitpold Whyman	**77.86**	74.94	76.16	84.30	
	Maggie Warren	**76.21**	76.21			
	Opaline Webster	**76.20**			76.20	
	Rhetta Parker	**67.39**			67.39	
	Verda Heath	**94.16**	123.02	78.02	83.28	
	Vern Ferguson	**70.44**	78.15	71.01	66.81	
Germany	**Total**	**57.46**	**61.88**	**71.54**	**53.60**	
	Alvaro Bennett	**50.84**	54.15		49.60	
	Annunziata Singh	**90.08**			90.08	
	Barret Forster	**70.25**	73.88		67.08	
	Fina Tellwright	**75.03**			75.03	
	Fortunato Crawford	**62.47**			62.47	
	Jessika Thornton	**62.21**	70.66	77.50	126.54	
	Juniper Peabody	**75.74**			75.74	
	Justen Cartwright	**32.17**	54.74		29.37	
	Keren Rose	**75.63**			75.63	
	Luitpold Whyman	**63.10**	59.06		84.32	
	Madelina Hewitt	**76.87**			76.87	
	Maggie Warren	**75.21**	73.22		76.80	
	Nicolle Bramble	**77.51**			77.51	
	Opaline Webster	**77.83**	77.83			
	Regena Wilder	**76.88**			76.88	
	Rhetta Parker	**59.12**		77.50	43.42	
	Sanjeev Walton	**63.06**	64.37		43.44	
	Shukriyya Burrows	**77.75**			77.75	
	Verda Heath	**72.10**			72.10	
	Vern Ferguson	**62.13**	62.50	42.03	62.44	
Italy	**Total**	**59.77**	**61.14**	**60.08**	**56.67**	**57.69**
	Annunziata Singh	**88.44**	156.53		58.62	

The following global criteria affect the objects:
- Customer Territory must be equal to Europe
- Time YQMD must be equal to 2018

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Lesson 9 Exercise

TARGIT
courage to act

Report run: 2/25/2019 10:55 AM
Report run by: FINKNNHFH0R1I26\Administrator

		Total	JEANS	SHIRTS	T-SHIRTS	UNDERWEAR
Italy	Barret Forster	**65.36**	65.29	55.35	67.04	
	Fina Tellwright	**72.88**			72.88	
	Fortunato Crawford	**67.75**	67.35	67.74	68.37	
	Jessika Thornton	**64.04**		74.59	41.18	
	Justen Cartwright	**54.08**	60.61	50.24	41.21	41.14
	Keren Rose	**77.51**		77.51		
	Madelina Hewitt	**73.16**		73.16		
	Maggie Warren	**75.77**	77.50			70.79
	Mechtilde Watts	**78.17**	78.17			
	Nicolle Bramble	**34.03**			34.03	
	Opaline Webster	**73.59**			73.59	
	Regena Wilder	**91.47**			91.47	
	Rhetta Parker	**74.86**	74.86			
	Sanjeev Walton	**57.96**	57.91	54.27	59.92	
	Savannah Morell	**79.96**			79.96	
	Vern Ferguson	**54.64**	59.15	54.78	44.51	
Norway	**Total**	**66.91**	**69.65**	**69.42**	**62.94**	
	Annunziata Singh	**76.81**	76.81			
	Arjuna Bolton	**70.59**		70.59		
	Barret Forster	**68.04**	66.46	63.86	75.58	
	Fina Tellwright	**77.49**			77.49	
	Fortunato Crawford	**69.47**	66.08	65.95	74.68	
	Jessika Thornton	**121.67**			121.67	
	Keren Rose	**74.65**	73.34		75.86	
	Madelina Hewitt	**74.36**			74.36	
	Maggie Warren	**75.65**	75.08		78.18	
	Nicolle Bramble	**77.51**		77.51		
	Opaline Webster	**76.37**			76.37	
	Regena Wilder	**73.18**	73.18			
	Sanjeev Walton	**44.44**	77.90	73.14	23.05	
	Savannah Morell	**75.33**			75.33	
	Shukriyya Burrows	**75.56**			75.56	
	Verda Heath	**76.35**	77.15	75.57		
Portugal	**Total**	**66.23**	**63.15**	**67.94**	**68.72**	**69.46**
	Alvaro Bennett	**59.97**	59.51			69.46
	Barret Forster	**74.52**	72.63		75.59	

The following global criteria affect the objects:
- Customer Territory must be equal to Europe
- Time YQMD must be equal to 2018

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Save it as **Lesson 9 Exercise**.

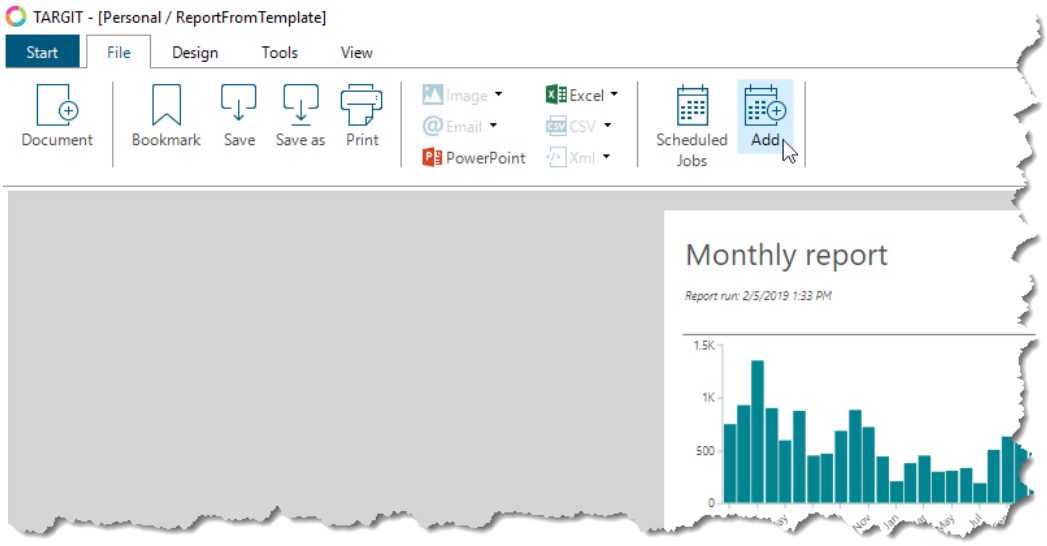
Lesson 10: Scheduled jobs

All the documents you create and save – whether that is a dashboard or a report – can be opened by an end-user with a TARGIT client. In this way, the end-user can work interactively with the opened document.

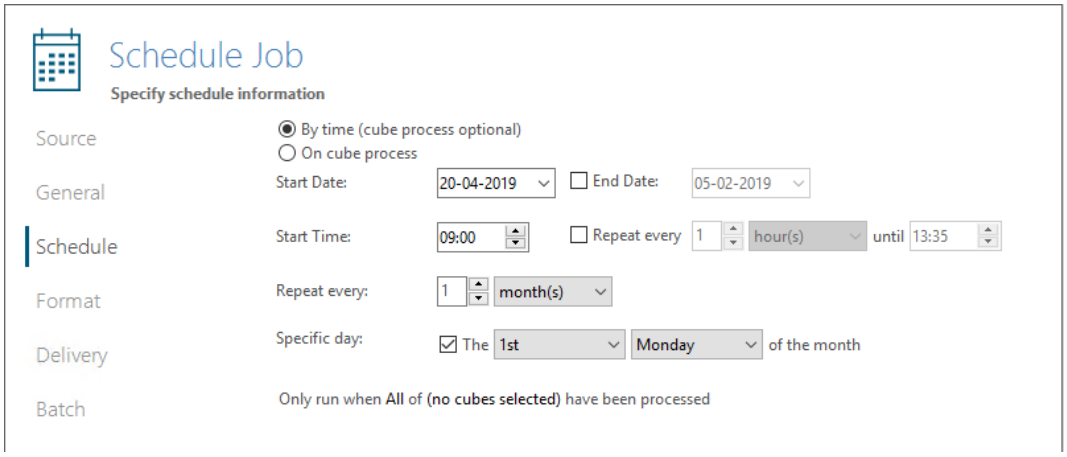
However, sometimes you just need to be able to *send* the information to the end-users. Reasons could be that the end-users prefer it in this way or that the end-users don't have access to TARGIT. Furthermore, it could be a kind of formal information that is required to be distributed on a regular basis.

For that purpose, TARGIT can work with *Scheduled jobs* to automate this type of information distribution.

To set up a scheduled job for a document, first you will need to save it as a document. If the document is saved and open, you can go to the File menu to *Add Scheduled job*.

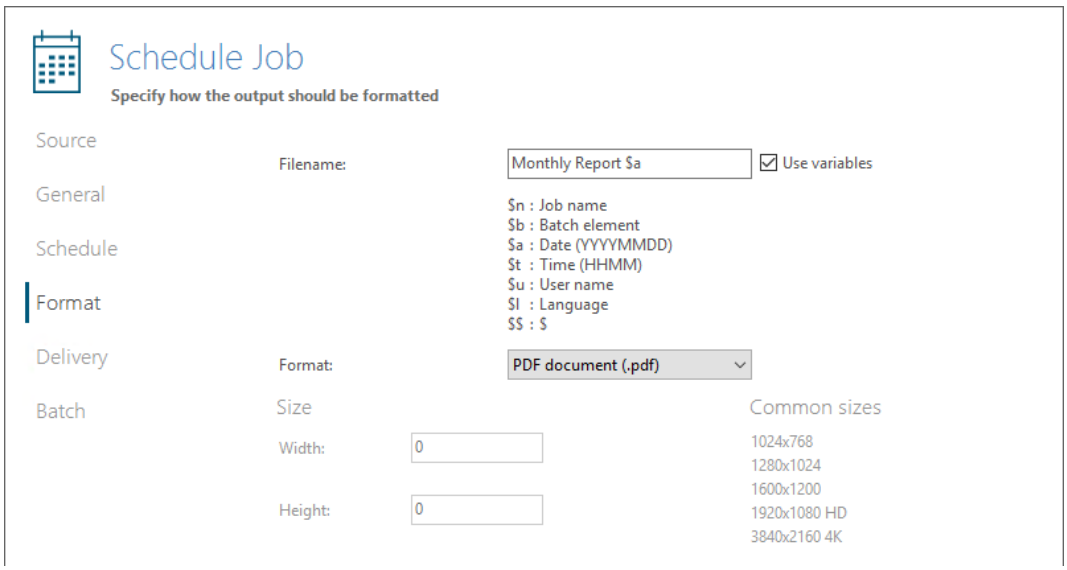


One of the central tabs of a Scheduled job is the *Schedule* tab. Here, you can set up when and how often a document should be distributed.

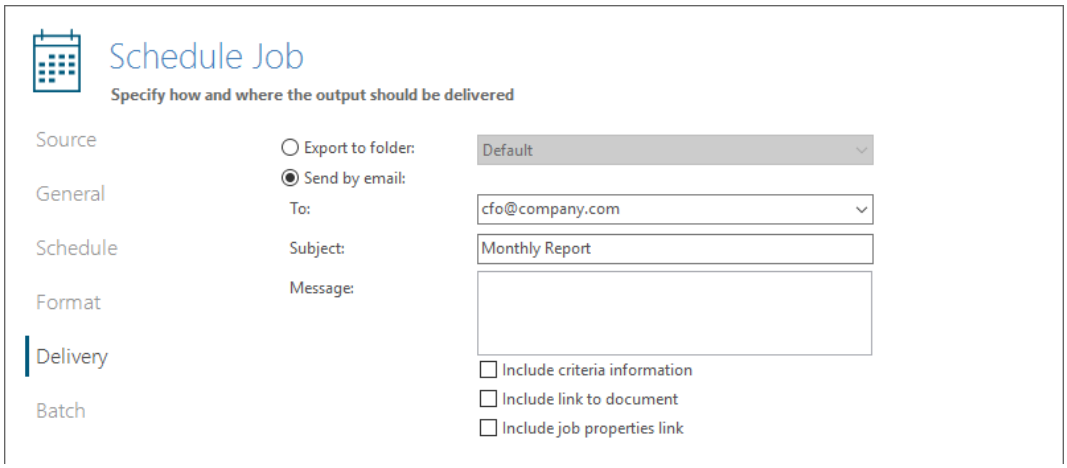


- **By time (cube process optional)**. This is the default setting by which you simply specify when and how often you want this job to run.
- **On cube process**. Choosing this option, you will also need to select at least one cube that needs to be processed before the job will run. Click the text line "(no cubes selected)" to select one or more cubes. The job will run every time the cube is processed.
- **Combination**. You can also select the "*By time"* option and the "*Only run when All of selected cubes have been processed".* In this way, you can prevent a scheduled job from sending out a report if the cube hasn't been processed (i.e. data hasn't been updated) since last time the scheduled job was run.

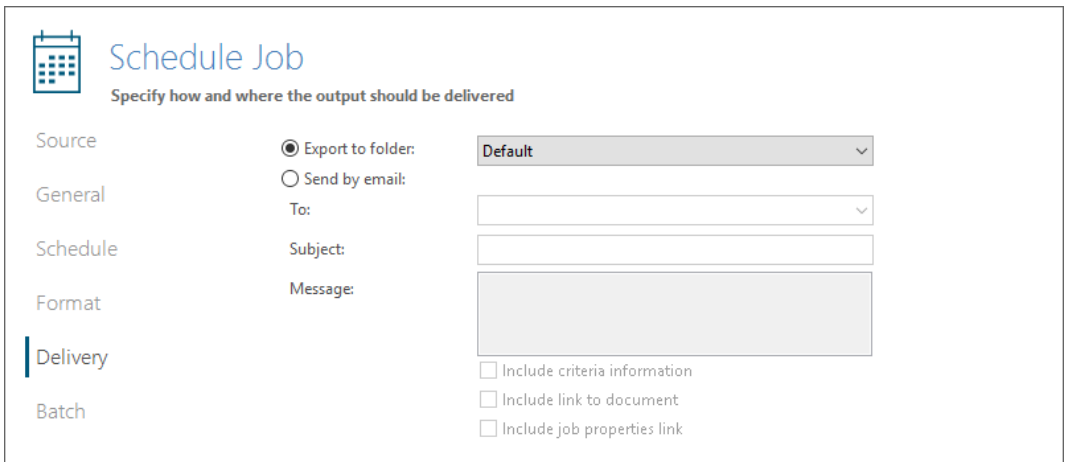
The *Format* tab lets you decide the format of the scheduled job's output. For report layouts it will typically be a PDF format, while for Dashboard layouts it will be a graphics format (like a screenshot). Notice the *"Use variables"* option that will add variables such as dates and timestamps to your file names.



On the delivery tab, the most commonly used option will probably be *"Send by email"*. You can add multiple email addresses in the "To" field – just separate addresses with a semicolon.

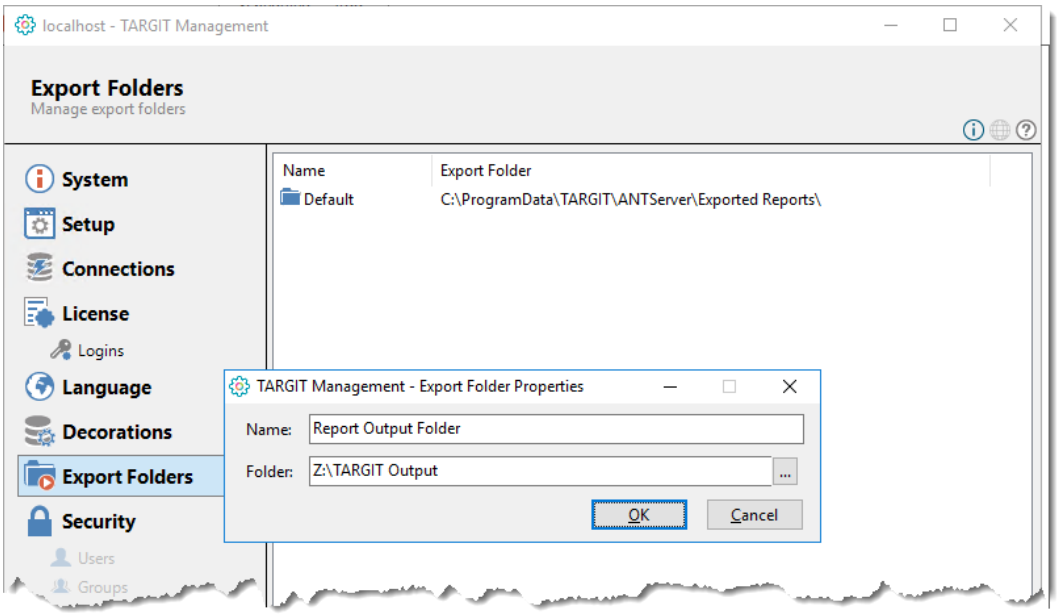


The other option, *"Export to folder"*, is a way to *update* or *archive* a document on a physical hard drive rather than sending it by email.

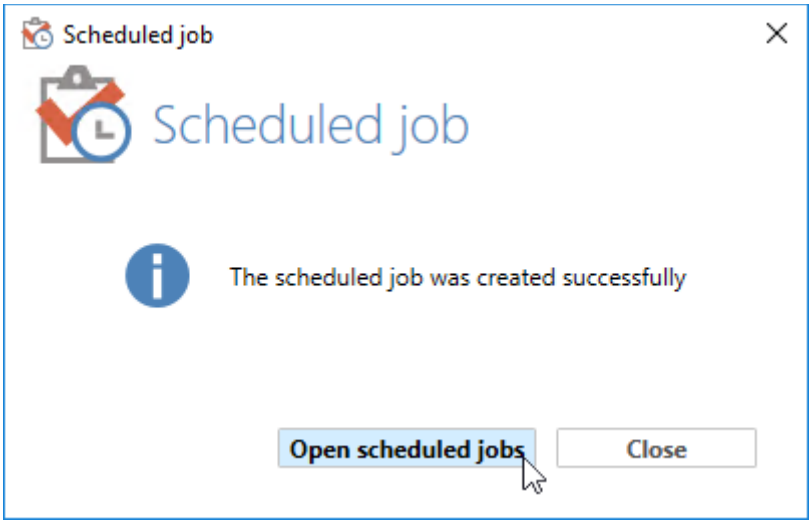


The "*Default*" option you may see there will likely point to the **C:\ProgramData\TARGIT\ANTServer\Exported Reports** location on the computer where your TARGIT server is installed.

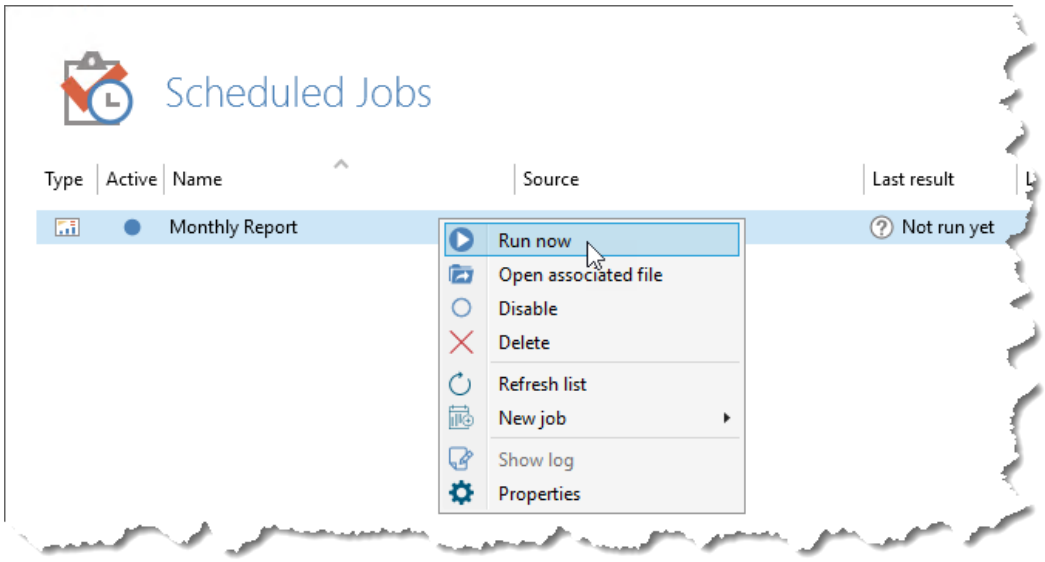
You can add more Folder Export options from your TARGIT Management client. Just keep in mind that the folders you add from there will be folders that are accessible by the TARGIT Server. To make sense, these folders should often also be accessible by the end-users.



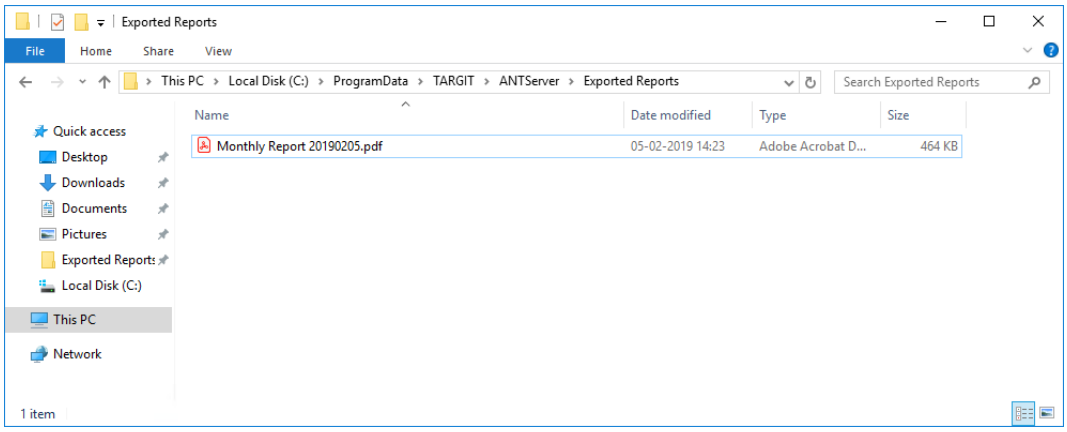
When the scheduled job settings have been completed, you may choose to open your list of scheduled jobs:



From the list, you can see job status and you can edit jobs etc. Furthermore, right click a job to run it immediately:



The output, if exported to the Default folder, can be found here:

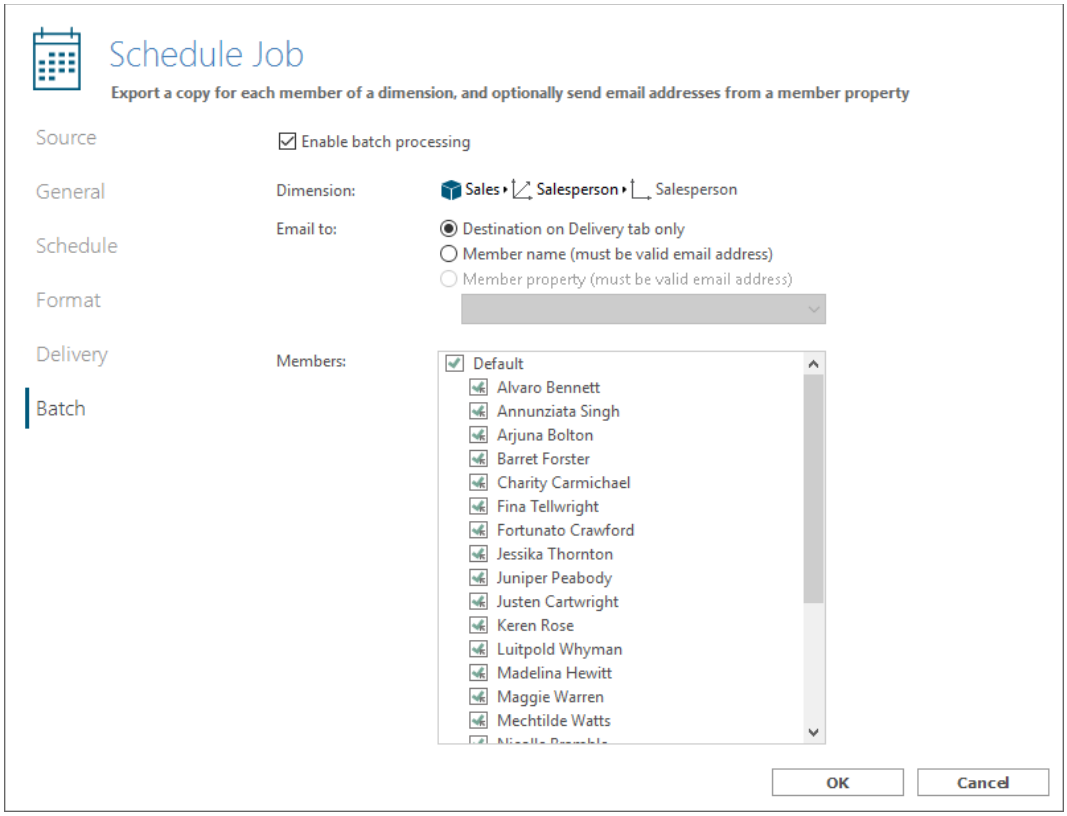


Batch scheduling

Batch Scheduling enables you to mass-distribute a report in different versions to different recipients. Simply enable the *Batch processing* option as part of the scheduled job and select a dimension to be used as batch filter and potentially as email distribution list at the same time.

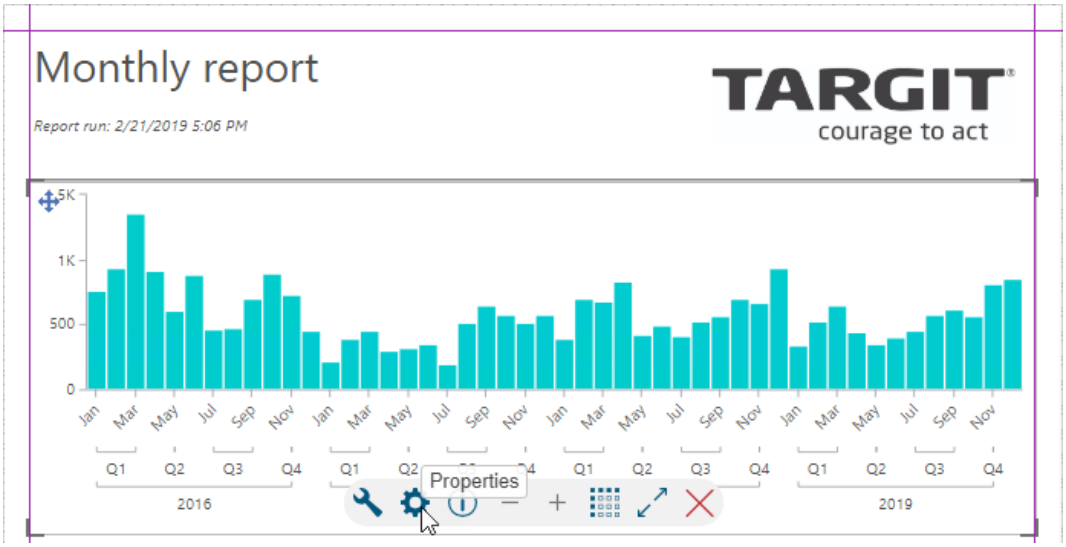
The Batch processing will produce as many reports as you have dimension members (except the ones you may have actively disabled). Furthermore, each report will be filtered by a criterion matching each dimension member.

It is even possible to let the Batch Scheduled job send out emails automatically – one email with one matching report to each recipient. This part of the Batch process requires the dimension to be designed with an additional attribute containing email addresses.

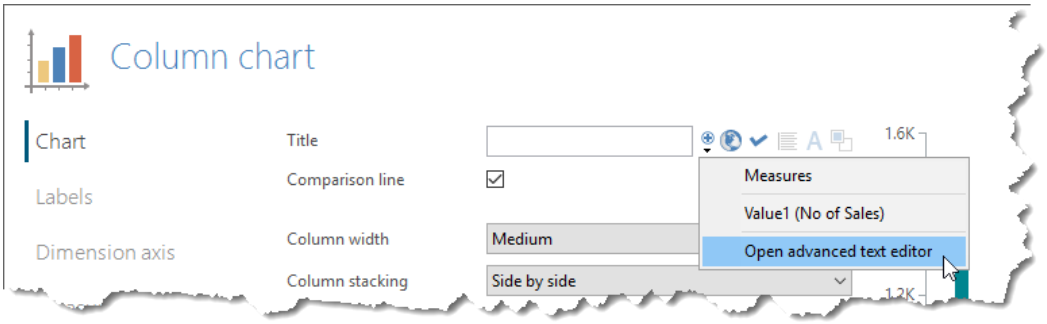


Notice: The Batch processing feature may require an add-on license to your current TARGIT license.

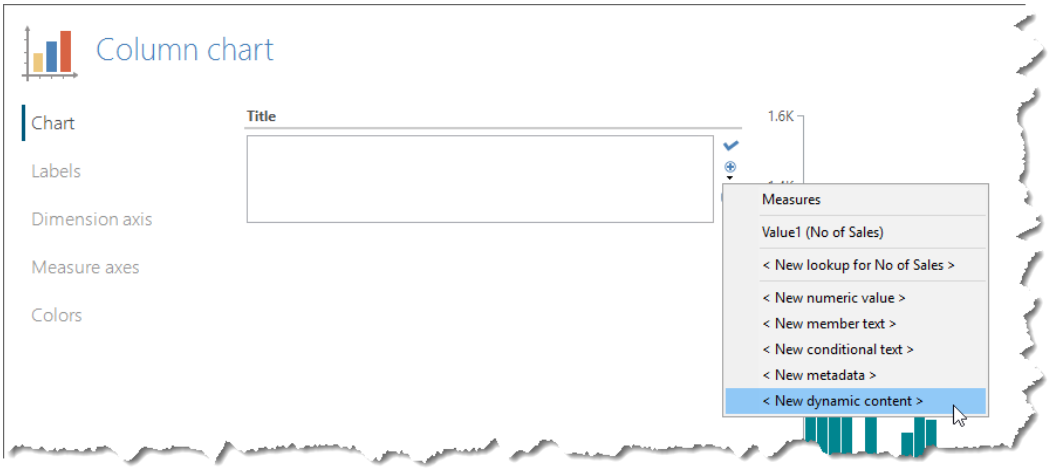
Now, let us improve a little bit on properties of the column chart that we added to our report – to prepare it for batch processing.



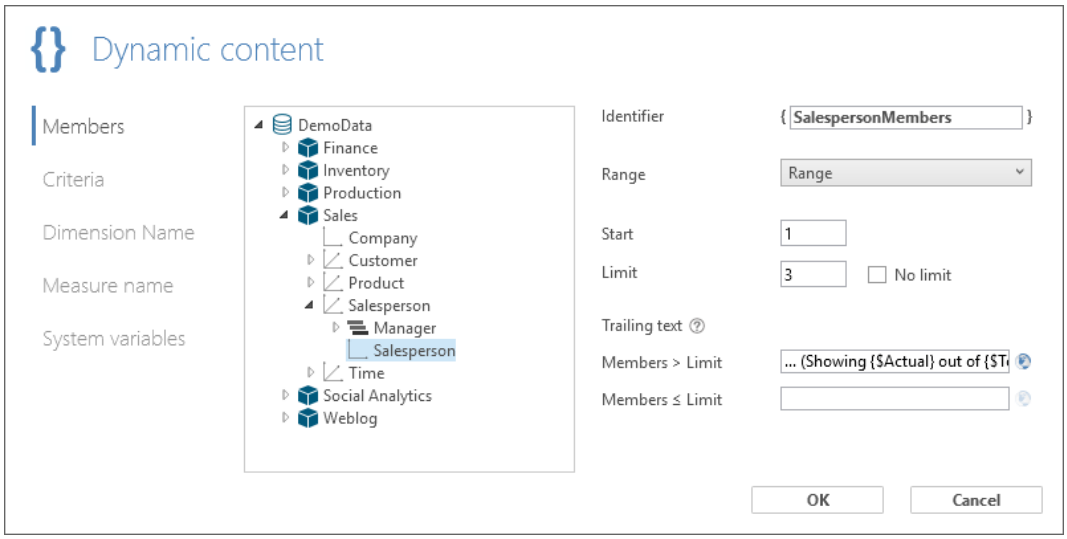
In the Title field, we will click the small black triangle to open the *Advanced text editor*.



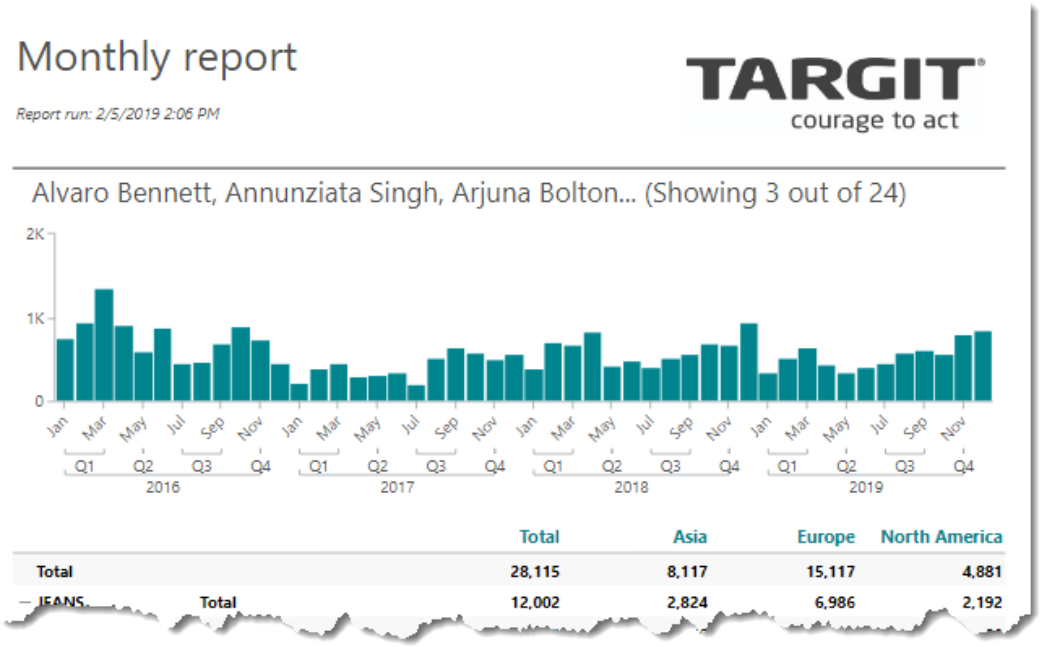
Furthermore, from the small black triangle again, we will add some *New dynamic content*.



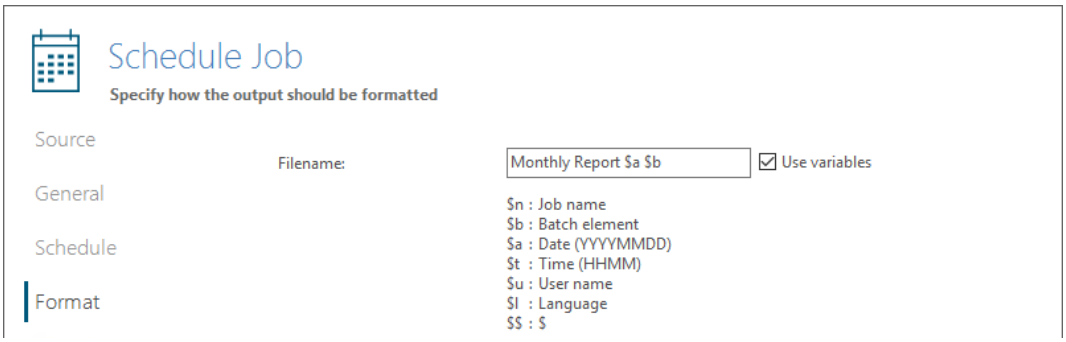
Here, we will add members from the Salesperson dimension, but only for the first three members and with a standard text if that limit is exceeded.



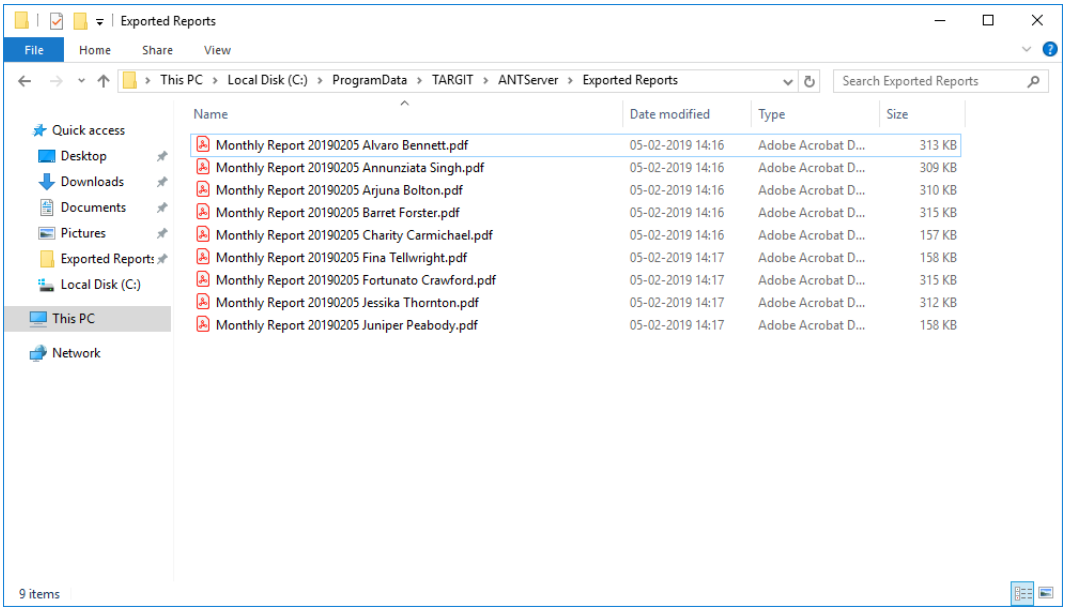
Initially, this should show something like this:



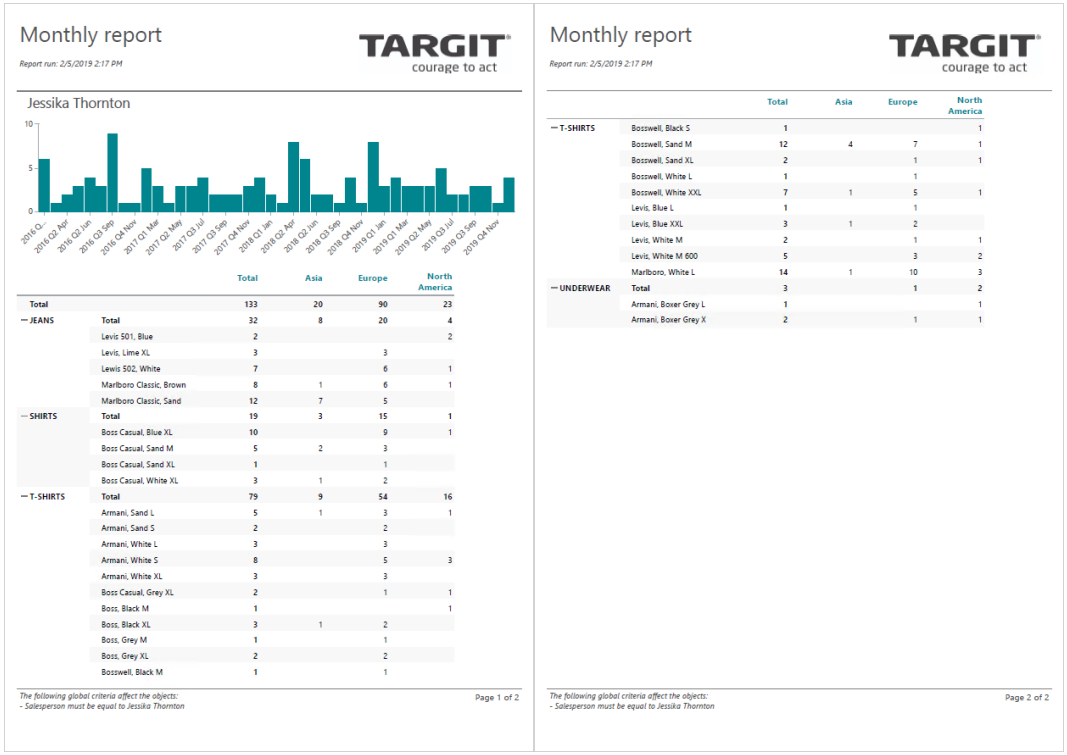
Now, when we add a scheduled job (Export to folder), we should include at least the $b (Batch element) variable in the file name:



When we run this scheduled job, with batch setting on Salesperson members, the output will become one PDF file per Salesperson:



One of the reports, the one for Jessika Thornton, will look like this:



Monthly report

Report run: 2/5/2019 2:17 PM

TARGIT courage to act

Jessika Thornton

		Total	Asia	Europe	North America
Total		133	20	90	23
— JEANS	Total	32	8	20	4
	Levis 501, Blue	2			2
	Levis, Lime XL	3		3	
	Lewis 502, White	7		6	1
	Marlboro Classic, Brown	8	1	6	1
	Marlboro Classic, Sand	12	7	5	
— SHIRTS	Total	19	3	15	1
	Boss Casual, Blue XL	10		9	1
	Boss Casual, Sand M	5	2	3	
	Boss Casual, Sand XL	1		1	
	Boss Casual, White XL	3	1	2	
— T-SHIRTS	Total	79	9	54	16
	Armani, Sand L	5	1	3	1
	Armani, Sand S	2		2	
	Armani, White L	3		3	
	Armani, White S	8		5	3
	Armani, White XL	3		3	
	Boss Casual, Grey XL	2		1	1
	Boss, Black M	1			1
	Boss, Black XL	3	1	2	
	Boss, Grey M	1		1	
	Boss, Grey XL	2		2	
	Bosswell, Black M	1		1	

The following global criteria affect the objects:
- Salesperson must be equal to Jessika Thornton

Page 1 of 2

Monthly report

Report run: 2/5/2019 2:17 PM

TARGIT courage to act

		Total	Asia	Europe	North America
— T-SHIRTS	Bosswell, Black S	1			1
	Bosswell, Sand M	12	4	7	1
	Bosswell, Sand XL	2		1	1
	Bosswell, White L	1		1	
	Bosswell, White XXL	7	1	5	1
	Levis, Blue L	1		1	
	Levis, Blue XXL	3	1	2	
	Levis, White M	2		1	1
	Levis, White M 600	5		3	2
	Marlboro, White L	14	1	10	3
— UNDERWEAR	Total	3		1	2
	Armani, Boxer Grey L	1			1
	Armani, Boxer Grey X	2		1	1

The following global criteria affect the objects:
- Salesperson must be equal to Jessika Thornton

Page 2 of 2

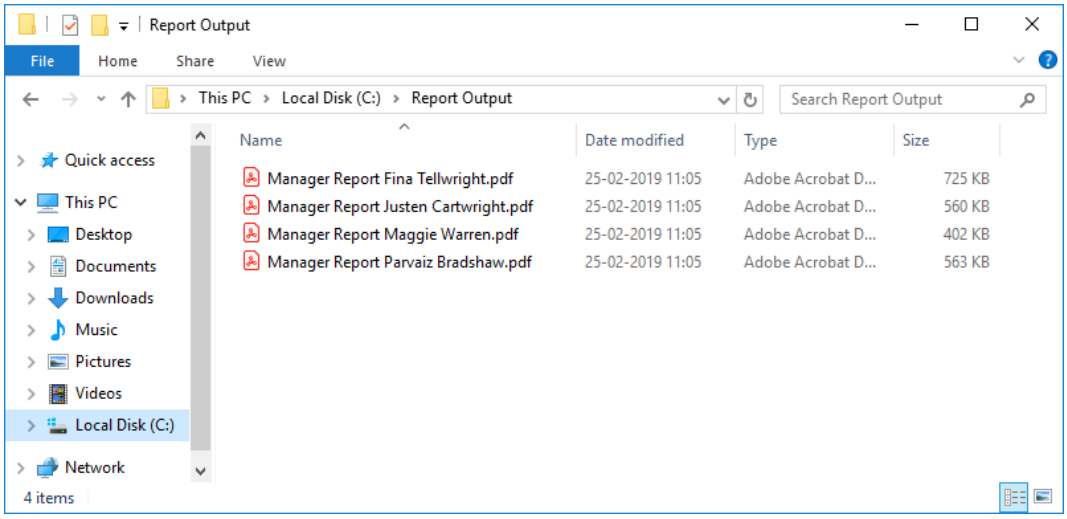
Exercises Lesson 10

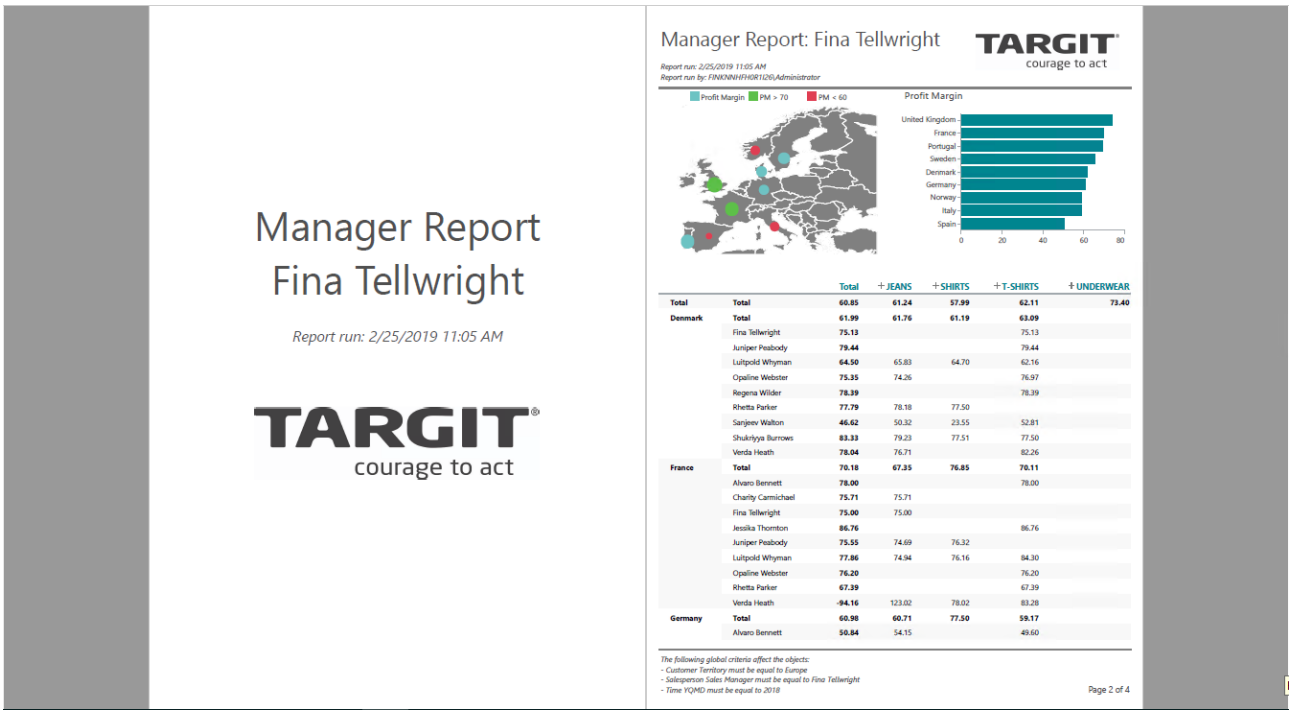
(Screenshots and exercises are based on version 2019.0 demo data. If you are working on an earlier or later version you may need to add or subtract 1 year to achieve similar results.)

Task 1:

Open the report you created and saved in previous lesson.

- Add Sales Manager information (dynamic content) to the front page.
- Create an alternative Export folder, e.g. C:\Report Output.
- Set up a Scheduled job, Batch enabled, that will send out one report per Sales Manager every Monday at 10am.





Appendix: Export, Scheduled jobs and Monitoring

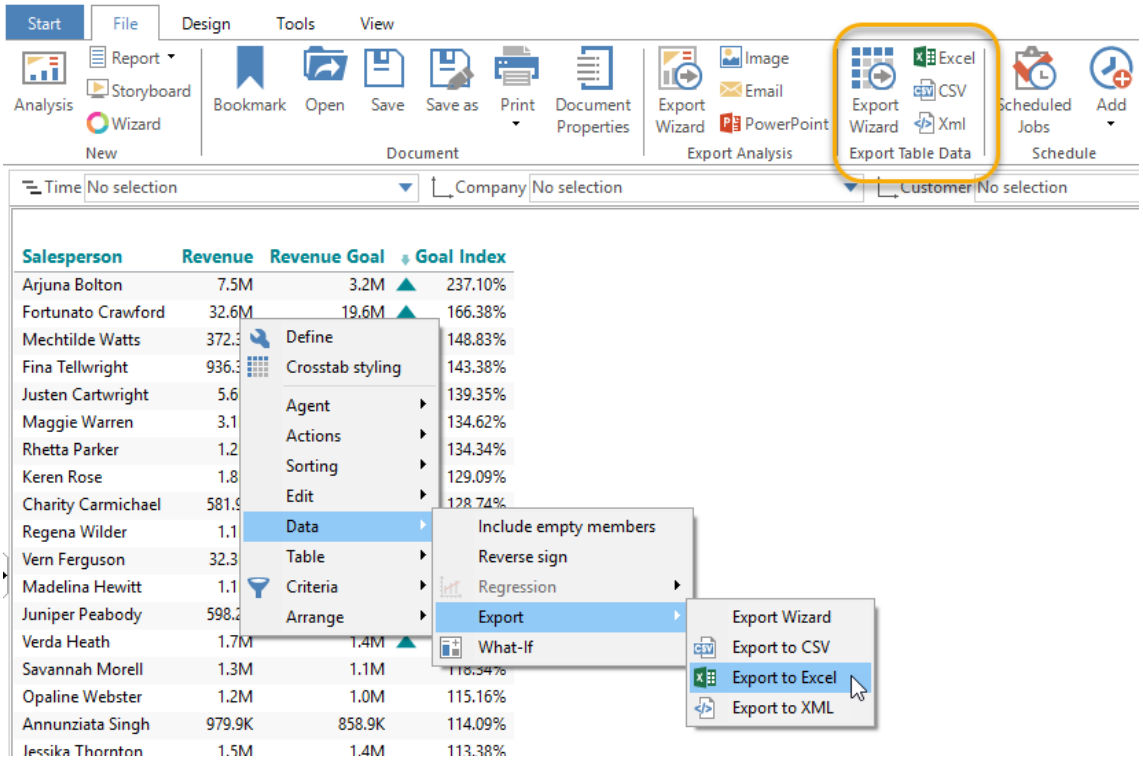
TARGIT offers many options for exporting data from the system, or for monitoring data within the system.

In combination with TARGIT's Scheduling options, you may then automate many daily tasks.

Export to Excel

Occasionally you may need to work with data in a different tool than TARGIT, e.g. in Excel.

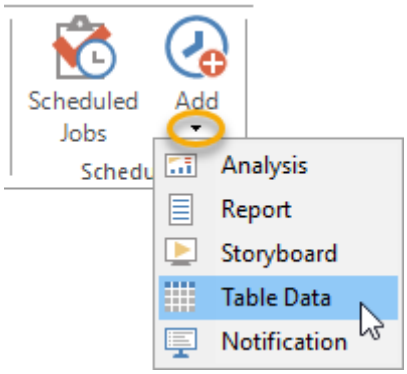
You can do this directly, for the selected object, from the File menu. Alternatively, right click the object to initiate the export:



Both options will immediately open Excel with the exported data. If the selected object is a graph, the crosstab basis for the graph will be exported.

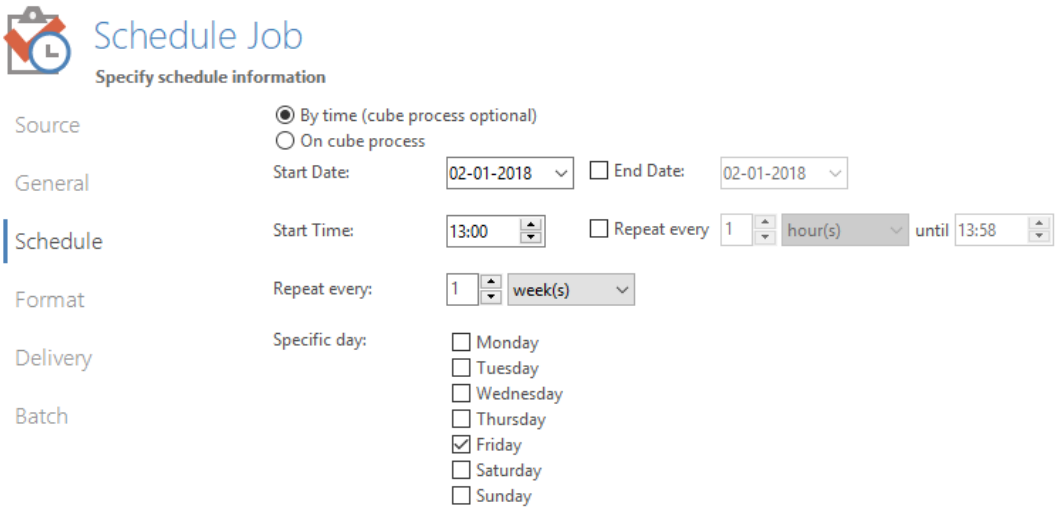
Scheduled jobs

Exported table data may be automated to run according to a schedule – e.g. once every Friday. You do this from the File menu by adding a new Schedule:

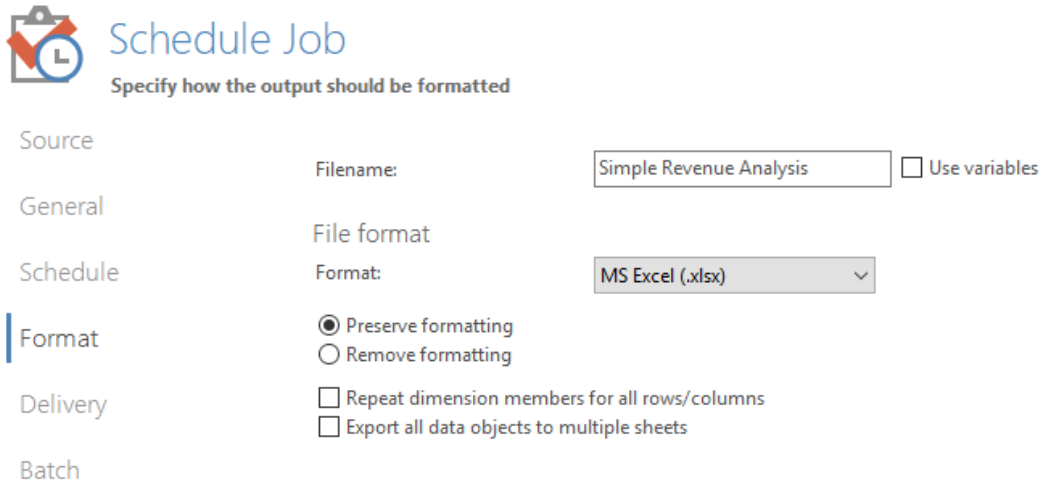


Note: Click the small black triangle to see all schedule options.

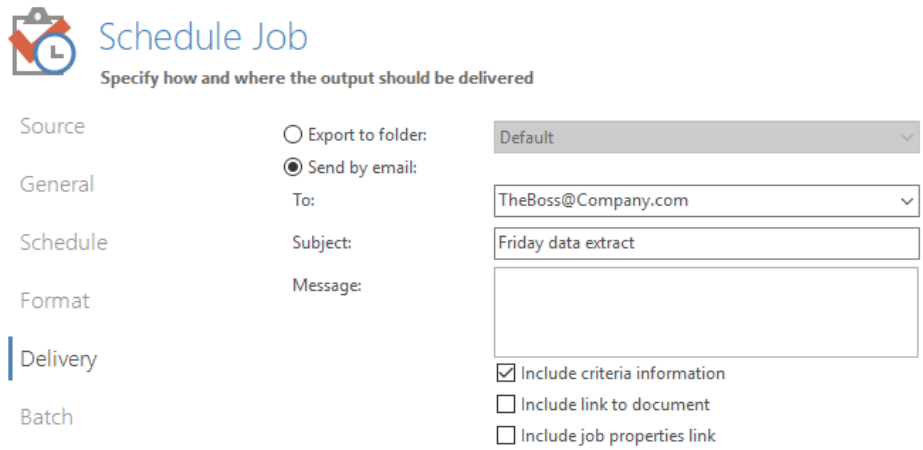
Schedule settings lets you choose the schedule you need:



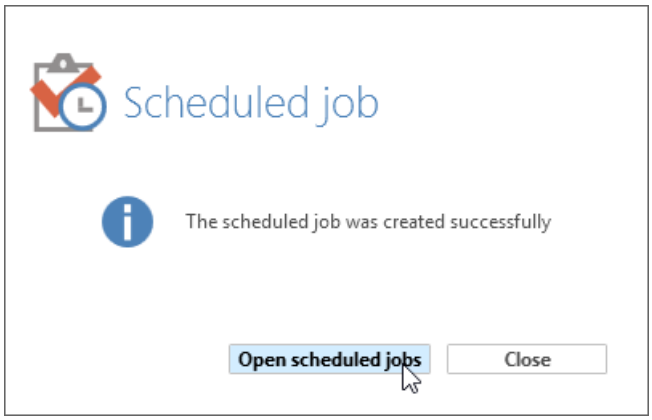
Choose the desired format for the scheduled output:



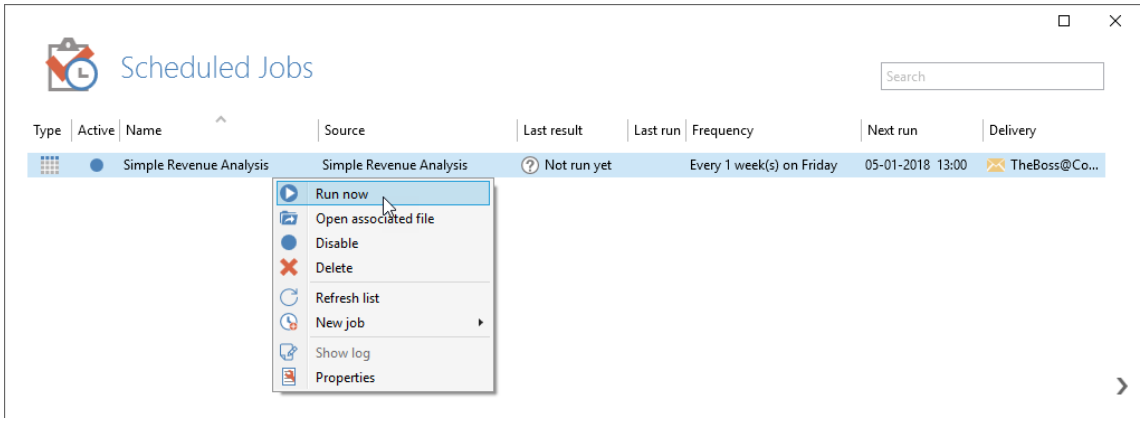
You can deliver the output to a folder (e.g. a shared Network folder) or to email recipients:



When the scheduled job settings have been completed, you may choose to open your list of scheduled jobs:

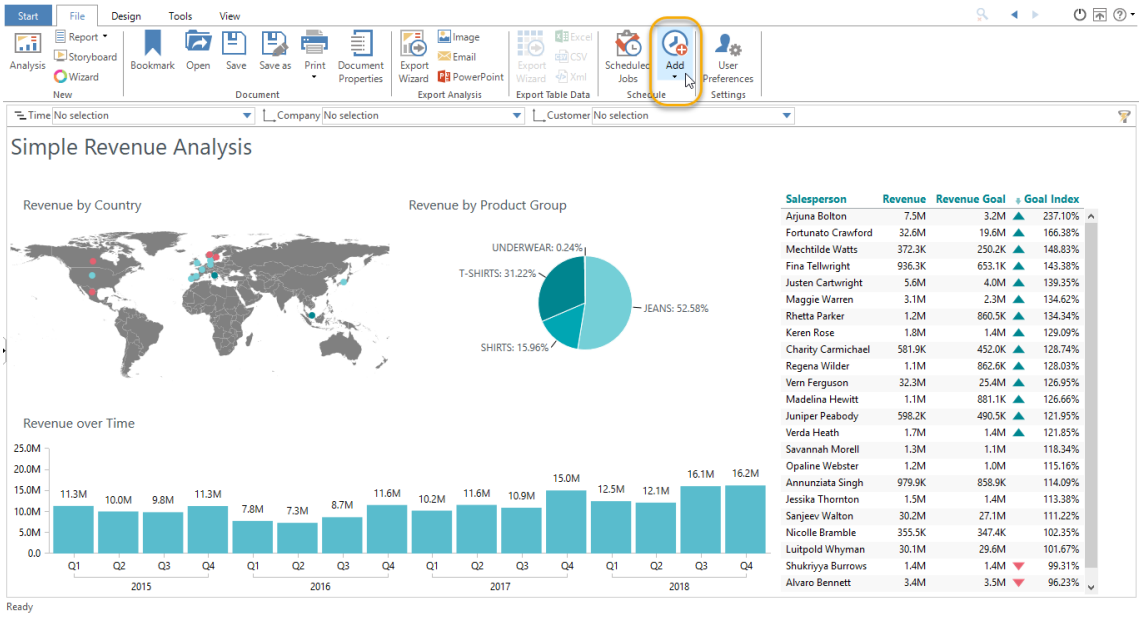


From the list, you can see job status and you can edit jobs etc. Furthermore, right click a job to run it immediately:



Scheduled Analysis

Another type of scheduled job can be made on basis of a complete analysis. Simply open the analysis you want to schedule and click the "Add" button:



With this option, every time the scheduled job is run, a screenshot will be generated and send to the recipients.

Note: Whenever a scheduled job runs, fresh data is re-fetched before the output is generated and send to the recipients.

Monitoring data

Notification Agents are useful when you need to monitor the development of key measures. Notification Agents are scheduled to regularly check the current state of the measure. The current value is then compared to the previous value, and if the pre-defined condition has been met, the Notification Agent will automatically send out an e-mail.

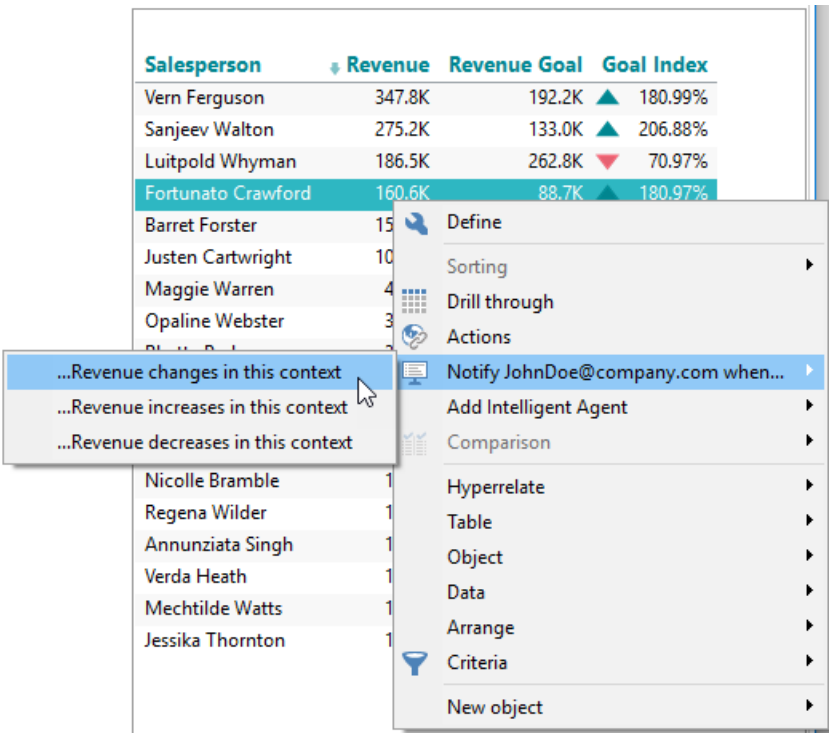
The user sets up the conditions for when the notification should be triggered and how often the thresholds are checked. Notifications can be created from:

- Analyses.
- Scheduled jobs.
- Object Notification Agents.

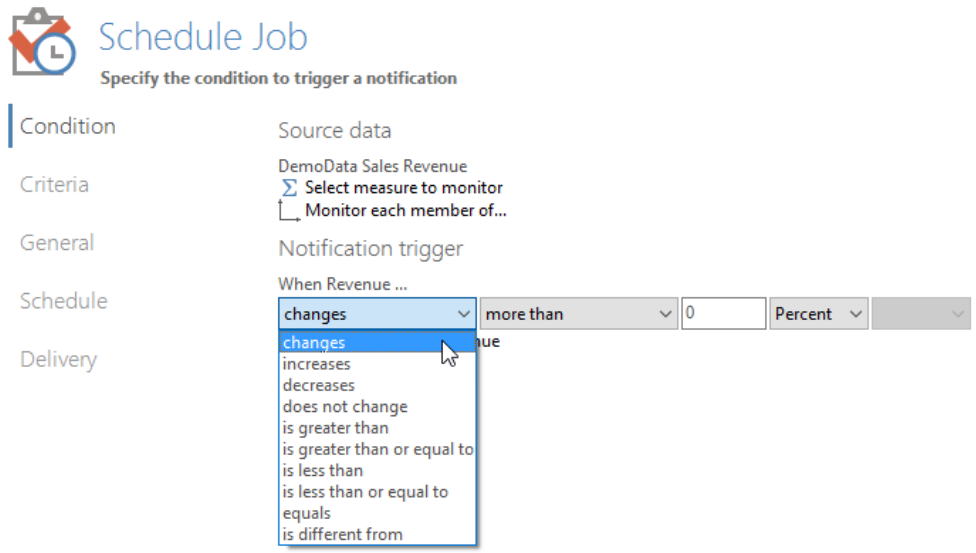
Monitor data from Analyses

In our Simple Revenue Analysis, we want to be notified whenever there is a change in the revenue for our Salespersons. We have added a ***This Month*** dynamic criterion to our analysis so it always shows data from current month. Furthermore, The **T-Shirts** segment has been selected from the Pie chart.

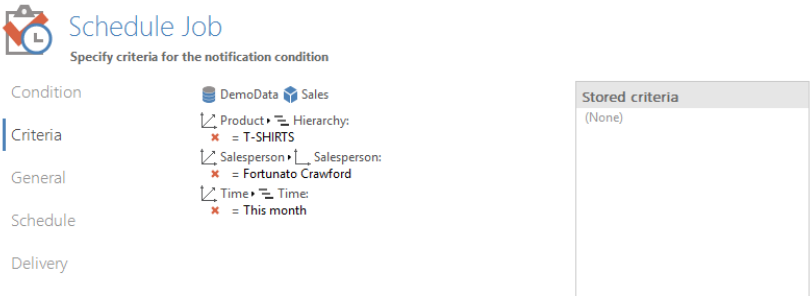
The notification can be created by right-clicking the value in the crosstab with the salespersons and selecting: Notify med when… / … Revenue changes – increases – decreases in this context, the context being the analysis with criteria and the value that you right-click.



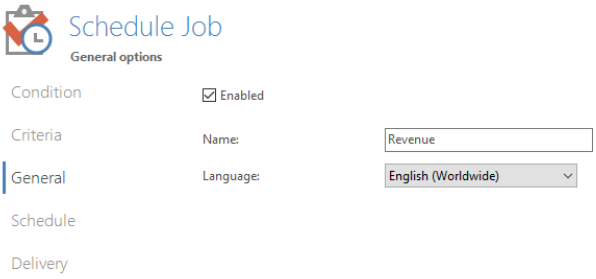
After that, a dialog box will open where the user can fine tune the notification. On the first tab, the condition for the notification is set up. You can work with relative changes as well as checks against fixed values.



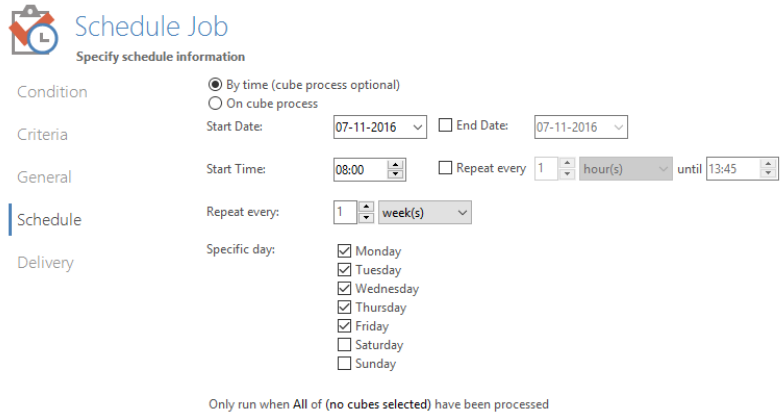
On the Criteria tab, you can see the criteria for the analysis and the value for the salesperson that you right-clicked. Here you can add and delete criteria.



On the General tab you can name the job that is created on the TARGIT server when the notification has been scheduled and here it might be a good idea to change the job name to something more specific than just Revenue.



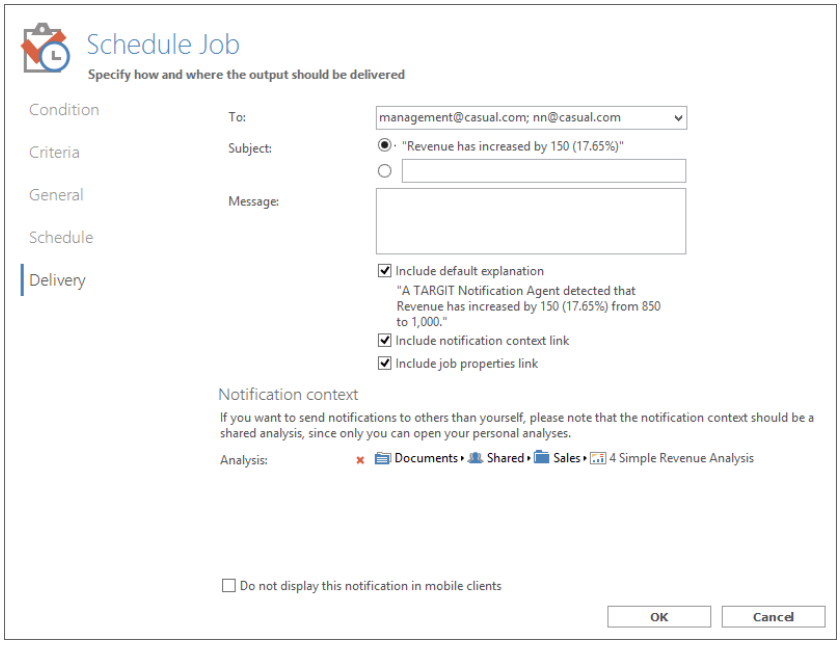
Here we have scheduled the notification to be run at 8 am every day, except weekends, but only if the Sales cube has been processed.



Finally, the delivery information is entered. The texts in Subject and Default explanation are nonsense texts and will be replaced with the true values when the job runs. You can of course enter your own text.

Include notification context link, will insert a link to the analysis in the e-mail. The Notification context shows the analysis. You can change analysis if you wish.

Include job properties link, will insert a link in the e-mail that opens this dialog box.



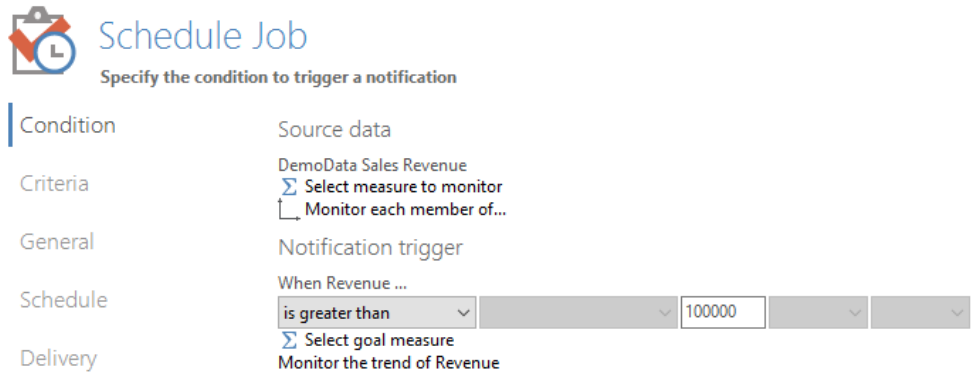
This condition "When revenue changes…" will now monitor your Revenue within the context set by your criteria. Each time this Revenue is looked up by the agent, its value will be stored and compared to the previous value that was looked up. On basis of this comparison, it will be determined whether Revenue has changed or not, and whether an email needs to be sent or not.

Notification Email

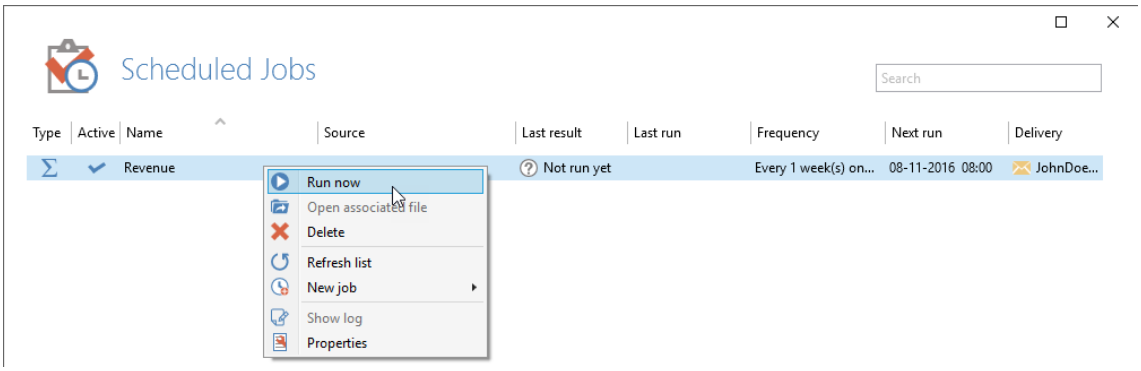
Now, let's try to trigger a notification email.

Since these demo data aren't alive – thus they will not change – we will need another condition to trigger the notification.

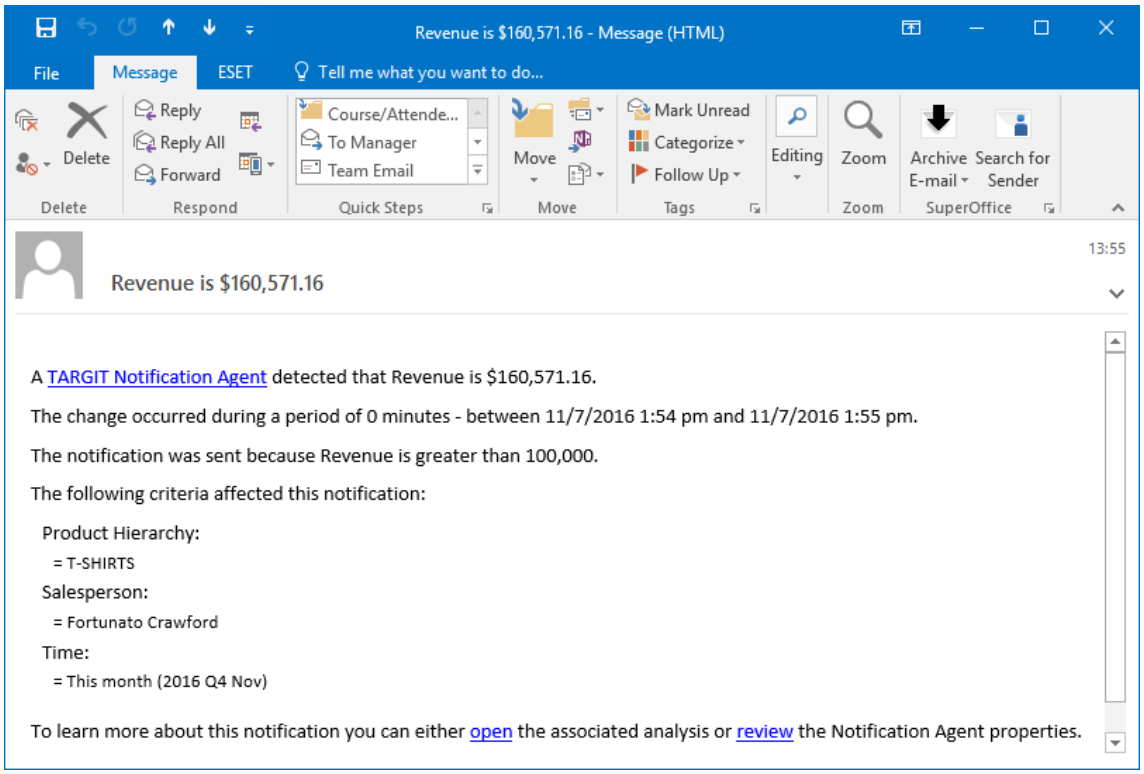
The notification that we created, will only check for changes in revenue for the salesperson we right-clicked.



This will open the Scheduled Jobs list, from where the new Notification agent will appear. Right click it to run now.

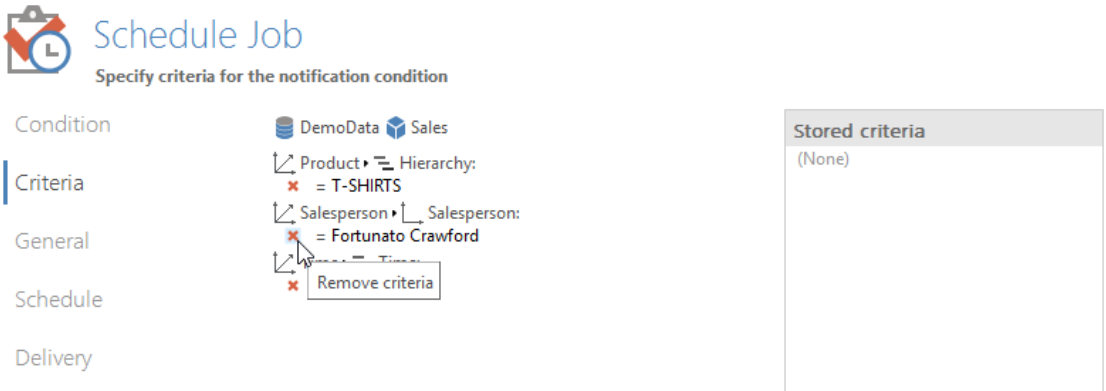


Since the agent condition is met (160,571.16 is greater than 100,000) the TARGIT server will now send an email:

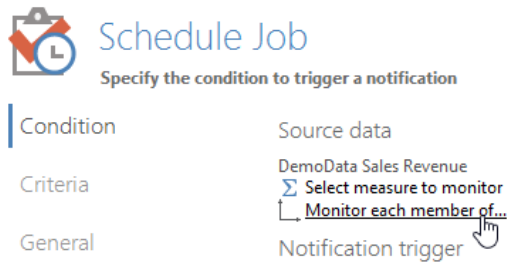


Monitor each member of...

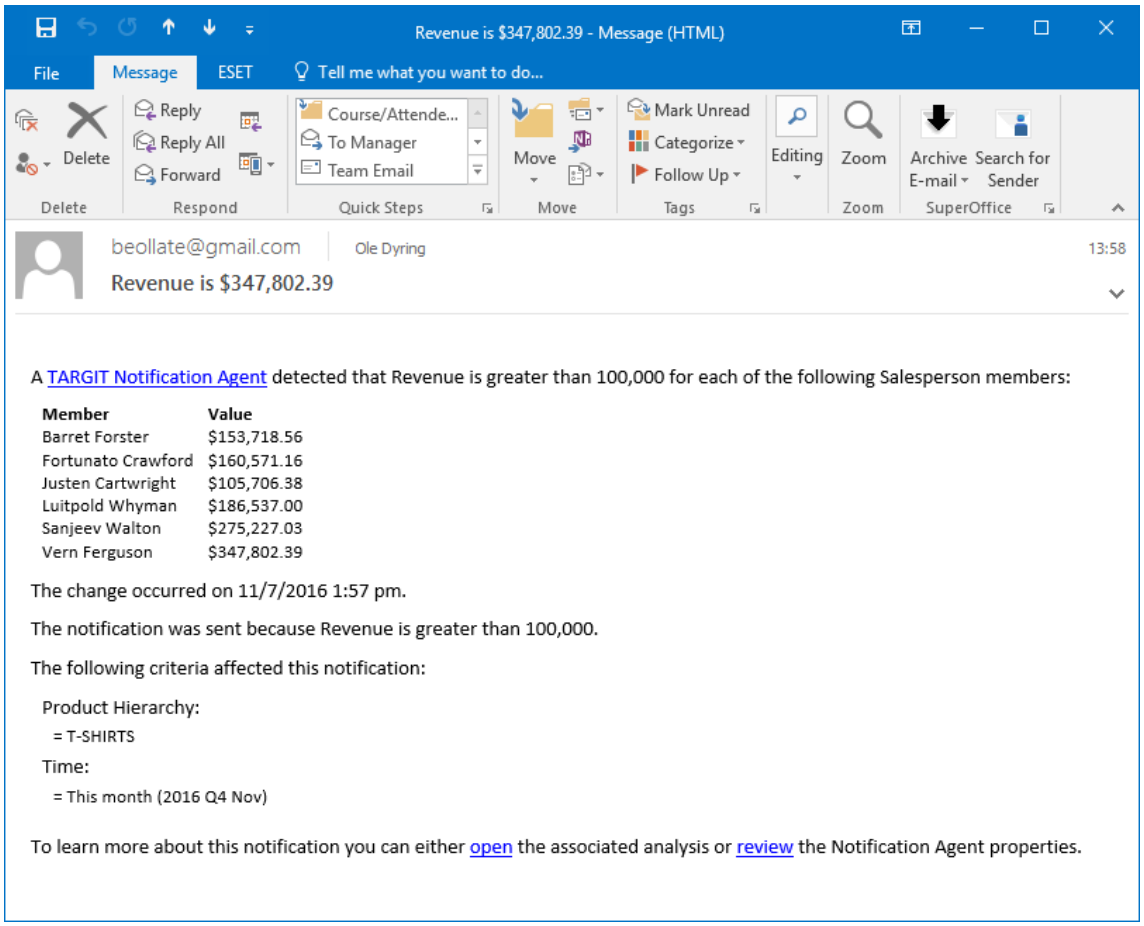
In the example above, only one salesperson was monitored. If we want to apply the same criteria and conditions to *all* salespersons on the list, we can do this by, first, removing the specific salesperson criteria.



And then, by enabling the *Monitor each member of…* option.

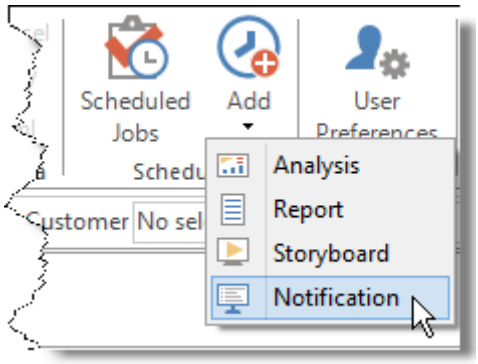


Now, when we choose to monitor each member of the **Salesperson** dimension, multiple salespersons fulfill the condition. All salespersons that fulfill the condition will appear in the notification email.

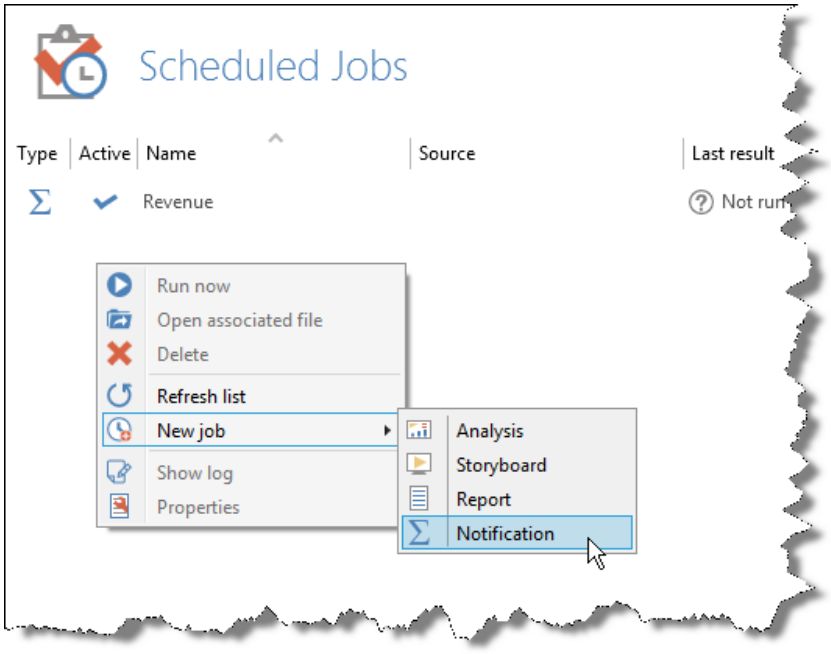


Add notifications through Scheduled jobs.

It is also possible to create notifications from the FILE ribbon tab Schedule. Click the drop-down arrow where it says Add and choose Notification in the menu.



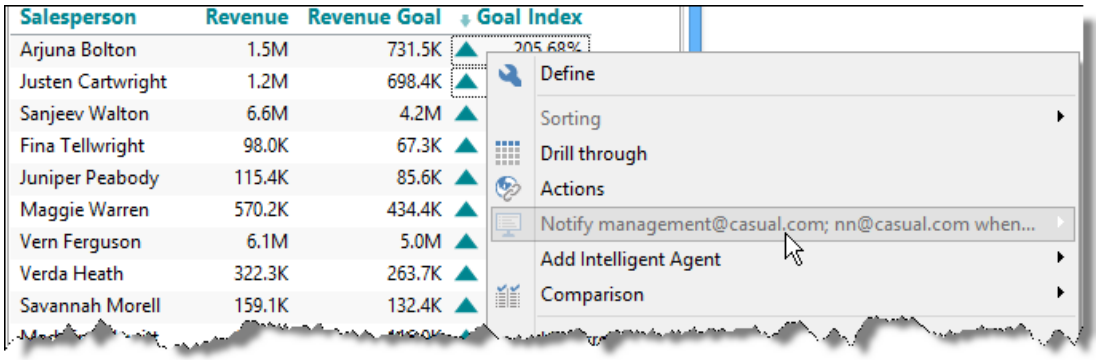
Or right-click in the lit of scheduled jobs and select a New job



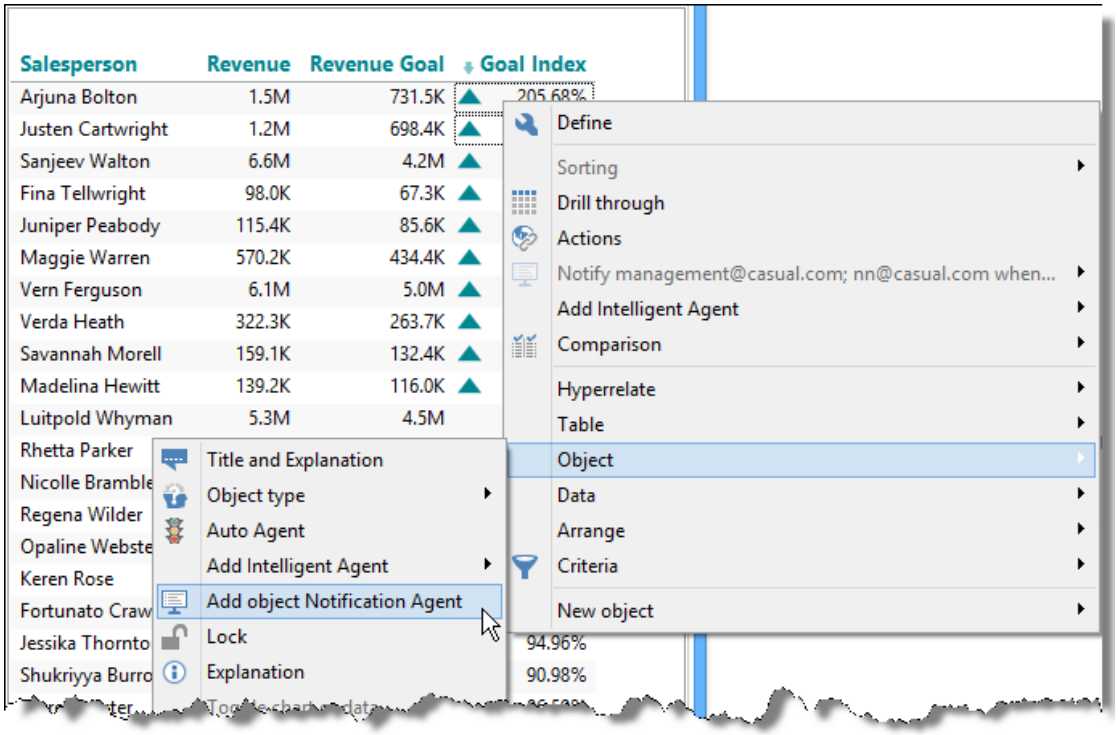
The dialog box will open as shown above, and from there you can select measures, conditions, criteria etc.

Object Notification Agent

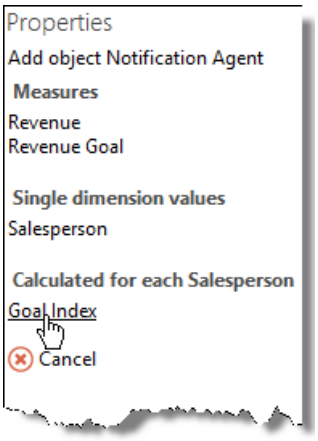
Object notifications are useful for defining exact notifications on data elements in an object. There is a calculation in the crosstab in our Simple Revenue Analysis, but it seems that we cannot create a notification for this calculation.



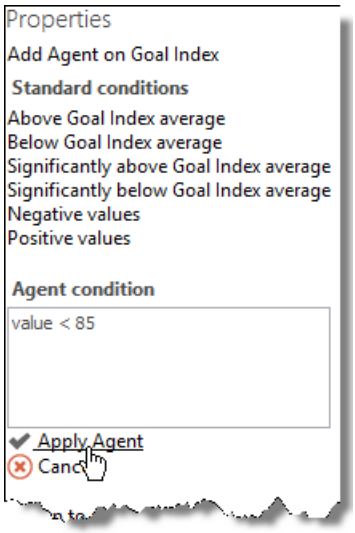
If we want to create notifications for calculations, we have to use an object notification agent.



This will bring up properties in the Smartpad for various data elements from this object. Click the data element you want to create the notification for.



For this type of notification, the conditions are a little different since it uses the whole object as the basis for the notification.



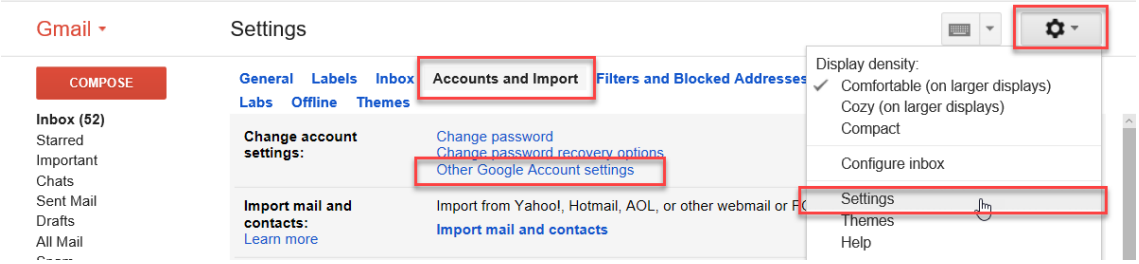
Appendix: Setting up an SMTP server for TARGIT

The TARGIT server requires an SMTP server for forwarding mails from the system, such as Notification mails.

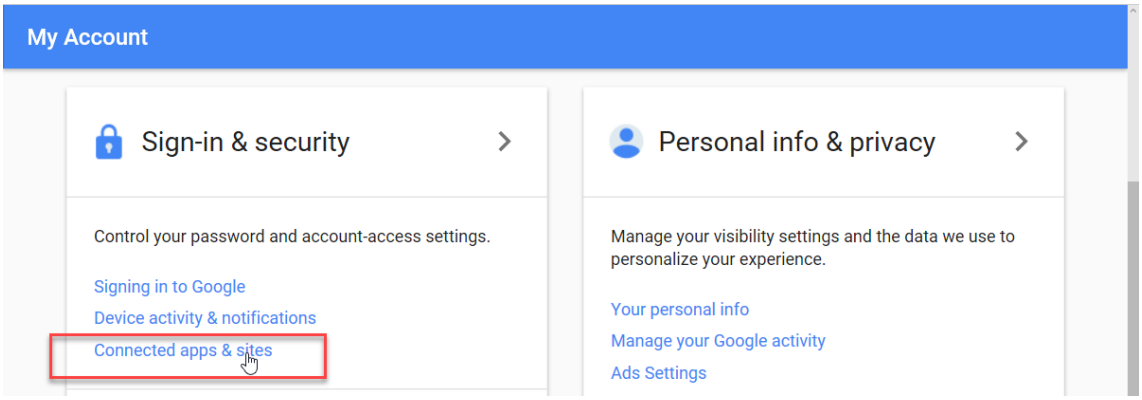
Usually, in a production environment, that SMTP server is simply the internal e-mail server within the company. But in this demo environment, you may need to use a third party SMTP server. The example shown, will set up an SMTP server through your personal Gmail account.

First, login to your Gmail account to allow mails to be send from so-called "less secure apps". It is not that TARGIT is a less secure app, but this is simply how Gmail works in order to allow emails to be send from other apps than the Gmail account itself.

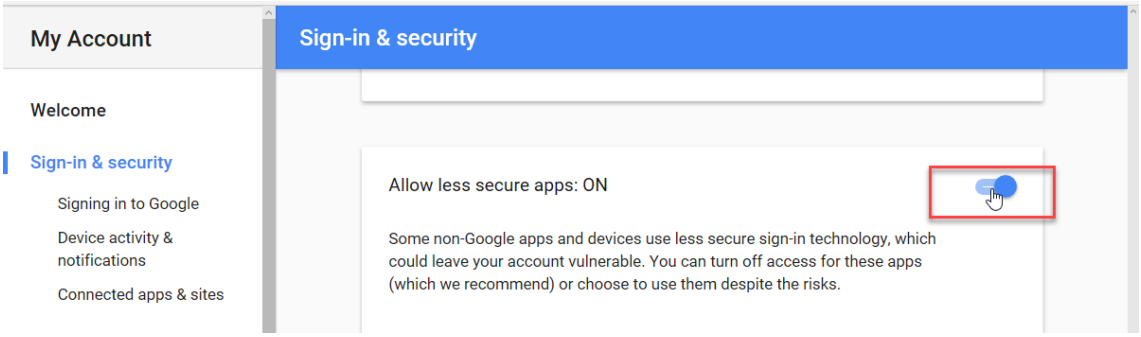
Login to your own Gmail account and look up the "Other Google Account settings".



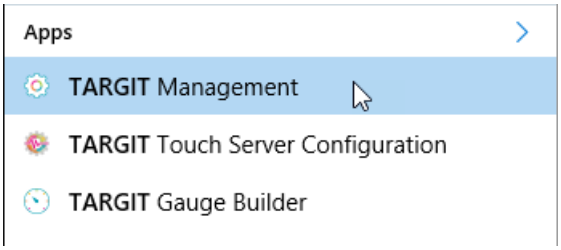
Go to the *Sign-in & security* section and choose *Connected apps & sites*.



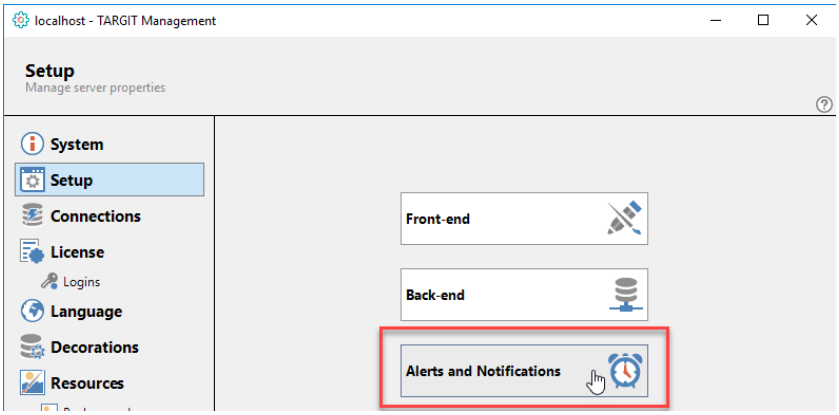
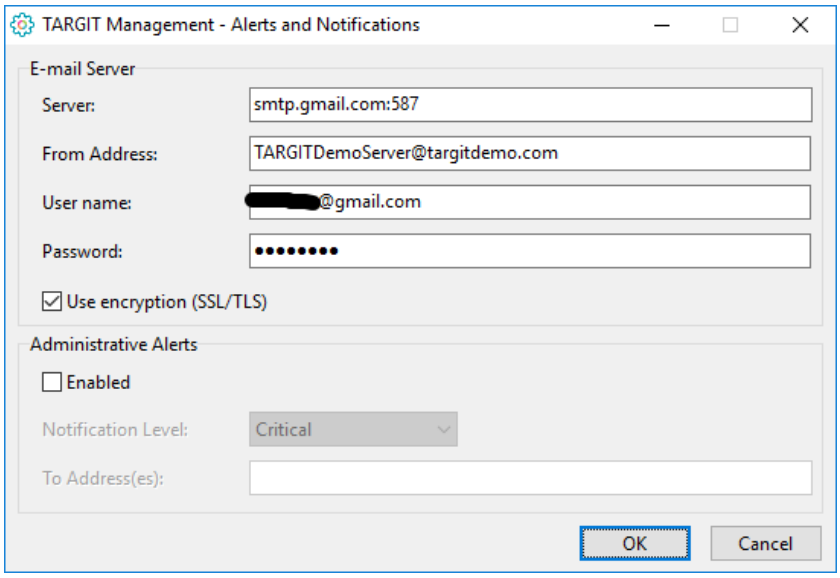
Enable the *Allow less secure apps* setting.



Now, open the TARGIT Management client.



Go to the *Alerts and Notifications* setup.



Now, enter the information as you see it below. Of course, using your own Gmail account's user name and password.