

PUBLIC

# **Experience Augmented Analytics with SAP Analytics Cloud ANA160**

Exercises / Solutions  
Robert McGrath / SAP

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## WORKSHOP OVERVIEW

Welcome to the TechEd 2020 workshop session ANA160 covering Augmented Analytics capabilities in SAP Analytics Cloud. SAP Analytics Cloud provides augmented features for 3 main user personas or roles

- The information worker or business user consumes curated content in SAP Analytics Cloud that is provided for them. Typically, they do not have a very strong understanding of the underlying data models and architecture. Also, they do not have the skills and access rights to create models and stories in SAP Analytics Cloud. Their goal is to use data about their business to make more confident data led decisions. These users can vary from executive level concerned with the entire business to individual contributors focused on a single task. Most potential Analytics Cloud users are in this category
- The analyst curate's information in SAP Analytics Cloud. Their role is to model the business data and to create stories that can be consumed by the information worker. They have detailed knowledge of the data, the SAP Analytics Cloud Data models and the overall data architecture. They are skilled in using SAP Analytics Cloud and often have good design skills.
- Planning users in SAP Analytics Cloud use the planning features to financial budgets, plans and forecasts.

This workshop contains three exercises each focused on a particular user type. Information worker, analyst or planning user. It is worth noting that the features highlighted for the information worker are relevant to all the user types. The features highlighted in this exercise include:

- Smart Insights
- Forecasting
- Search to Insight
- Smart Discovery
- Smart Grouping
- Predictive Planning

During the workshop, please use the user that has been assigned to you with the naming convention: •

XXX\_@XXX.com Where 'XXX' represents your individual participant number

All users have the password: SAPTechEd2020!

The SAP Analytics cloud tenant for this workshop is:

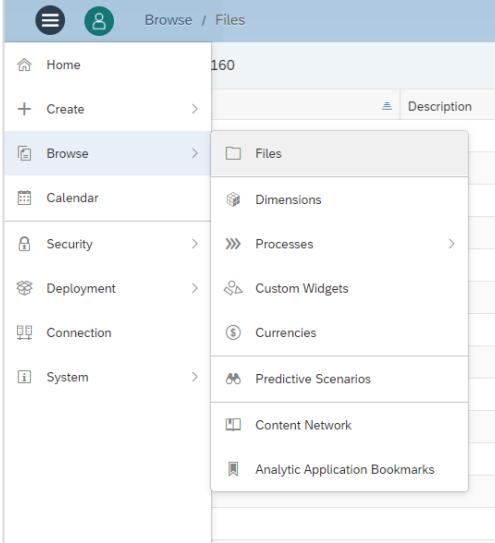
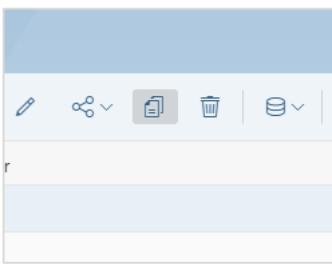
[https://ana160.eu10.hcs.cloud.sap/fpa/ui/app.html#/view\\_id=home](https://ana160.eu10.hcs.cloud.sap/fpa/ui/app.html#/view_id=home)

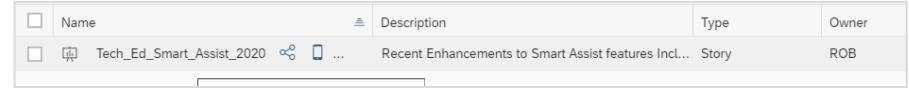
You will find any required content in the GitHub repository: teched2020-ANA160.

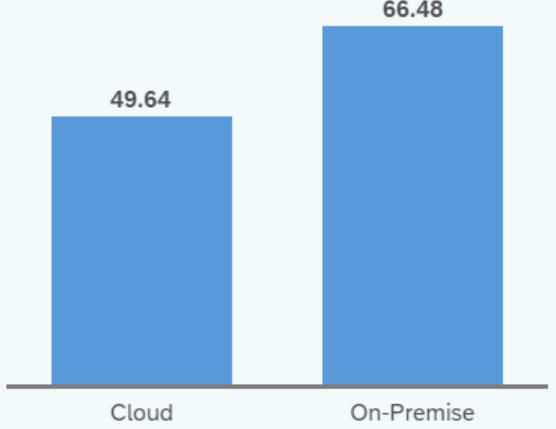
## EXERCISE 1 - EXPLORE THE DATA AS A BUSINESS USER OR INFORMATION WORKER.

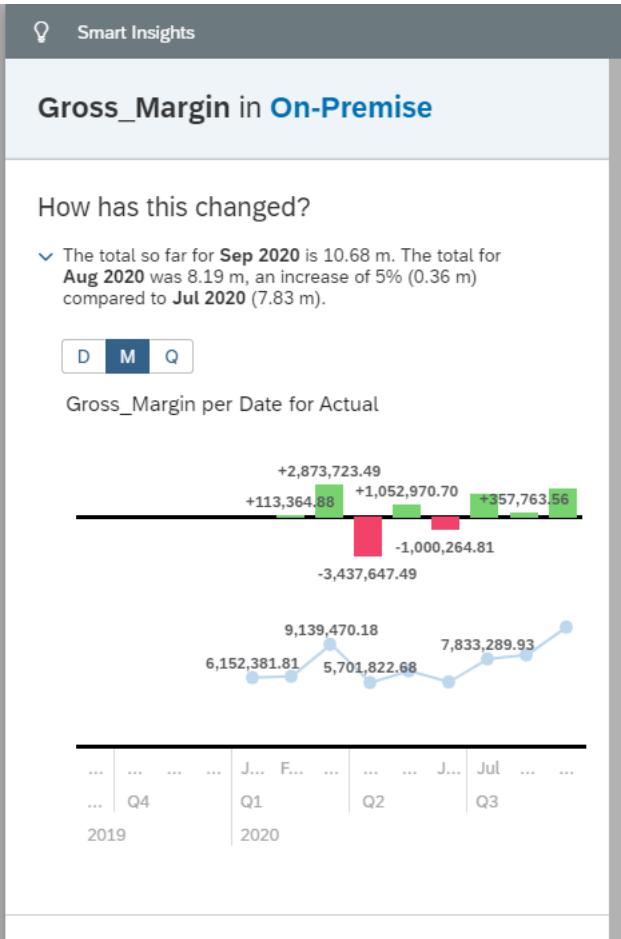
### Introduction

In this exercise you will assume the role of a business user specifically a leader in software reseller. You will review the high-level financial figures for your sales and use augmented capabilities to explore the data to understand what drives these numbers.

Explanation	Screenshot
<p>1. Navigate to files/public/ANA160</p>	
<p>2. Make a copy of the content folder using your ID in the name e.g. ANA160_001. <i>The naming is just so you can find it.</i></p>	

Explanation	Screenshot
<p>3. Navigate to the folder you just made. This contains all the content you need for the following exercises.</p>	<div style="text-align: center; border: 2px solid orange; padding: 10px; border-radius: 10px;"> <span style="color: orange;">Insert screenshot</span> </div>
<p>4. Navigate into the Smart Assist folder and open the Tech_Ed_SmartAssist_2020 story</p>	
<p>5. The story contains a dashboard showing Gross Revenue for a software company. As an executive in the company I would like to understand more about gross margin, how our business generates the gross margin shown in the dashboard.</p>	 <p>The dashboard displays the following key figures:</p> <ul style="list-style-type: none"> <li>Gross Margin: 116.12</li> <li>Sector Average Gross Margin: 9.68</li> <li>Operating Profit: 93.54</li> </ul> <p>A bar chart shows Gross Margin per Product Type (Cloud: 49.64, On-Premise: 66.48). A note indicates that On-Premise has the highest Gross Margin.</p> <p>A line chart shows Gross Margin Progression from Jan to Oct 2020, with values ranging from 12.07 to 14.13.</p> <p>A table provides Sales Data for Sept 2020 across various countries.</p>

Explanation	Screenshot						
<p>6. Smart Insights enables a Business User who does not have edit rights in SAP Analytics Cloud to explore the information presented in stories. Understanding what is behind the numbers helps the Business User to make better data led decisions. Smart Insights is accessible in two ways. The Gross Margin per Product Type chart contains a dynamic text token generated by Smart Insights. This was added to the story by the Analyst that created the story. The natural language is dynamically generated by Smart Insights and explains the most interesting data point in the chart. In this case the recent changes in On-Premise Gross Revenue are explained. To see more insights click on View More</p>	<p>Gross Margin per Product Type in m</p>  <table border="1"> <thead> <tr> <th>Product Type</th> <th>Gross Margin (m)</th> </tr> </thead> <tbody> <tr> <td>Cloud</td> <td>49.64</td> </tr> <tr> <td>On-Premise</td> <td>66.48</td> </tr> </tbody> </table> <p>💡 On-Premise has the highest Gross Margin. The total so far for Sep 2020 is 10.68 m. The total for Aug 2020 was 8.19 m, an increase of 5% (0.36 m) compared to Jul 2020 (7.83 m). <a href="#">View more...</a></p>	Product Type	Gross Margin (m)	Cloud	49.64	On-Premise	66.48
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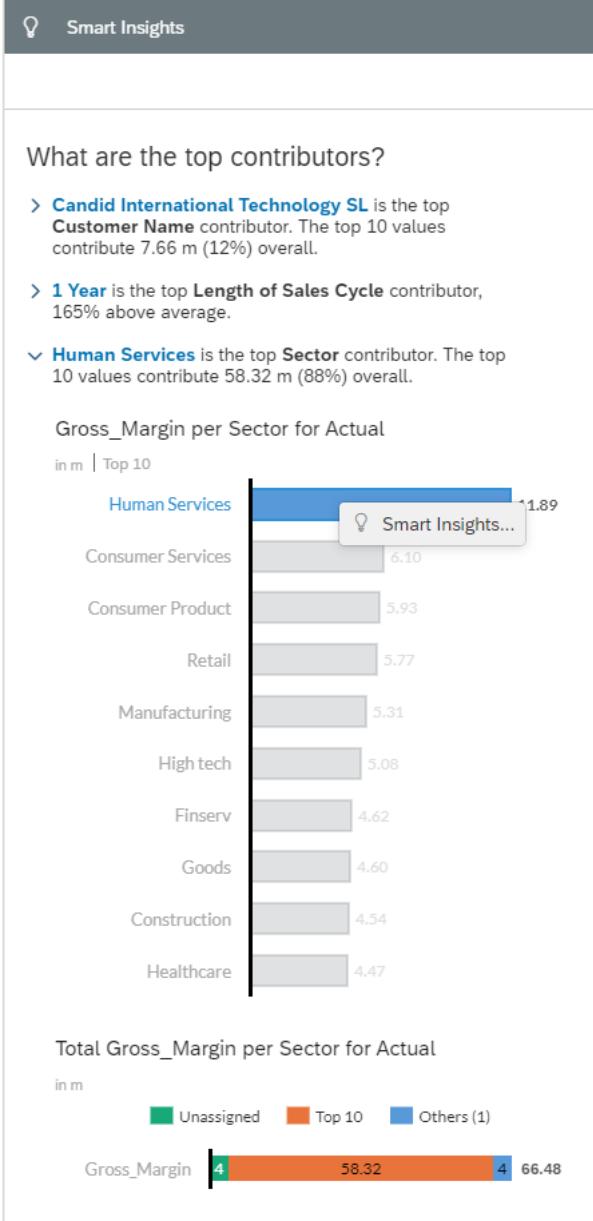
Explanation	Screenshot												
<p>7. The Smart Insights panel opens on the right side of the screen and contains insights explaining the On-Premise Gross Margin. The first insight shows recent changes in On Premise Gross Margin. Smart Insights has analyzed the recent data at the various levels of the Date Hierarchy and selected the level with the most significant changes in this case month. The recent changes are explained using both generated natural language and visualizations. The combination of natural language and visualization ensure that the user can quickly and correctly understand the insight. This combination of natural language and visualization is a pattern common to all the insights generated in Smart Insights.</p> <p><i>Click on the different levels of the date hierarchy to see the change displayed at the different levels.</i></p>	 <p>The screenshot shows the Smart Insights panel with the title "Gross Margin in On-Premise". It includes a section titled "How has this changed?" with a note about the total so far for Sep 2020 being 10.68 m, an increase of 5% (0.36 m) compared to Jul 2020 (7.83 m). Below this is a chart titled "Gross Margin per Date for Actual" showing monthly changes. The chart has four bars: a green bar for +2,873,723.49, a green bar for +1,052,970.70, a red bar for -1,000,264.81, and a green bar for +357,763.56. A line graph below shows actual gross margin values: 6,152,381.81 (Jun 2019), 9,139,470.18 (Jul 2019), 5,701,822.68 (Aug 2019), 7,833,289.93 (Sep 2019), and 8,139,470.18 (Oct 2019). The x-axis shows months from Jun 2019 to Oct 2019, with a break between Q3 and Q4. The y-axis ranges from 0 to 10,000,000. Below the chart is a section titled "What are the top contributors?" listing top contributors by customer name, sales cycle length, sector, contract level, and country.</p> <p><b>Gross Margin per Date for Actual</b></p> <table border="1"> <thead> <tr> <th>Change</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>+2,873,723.49</td> <td></td> </tr> <tr> <td>+1,052,970.70</td> <td></td> </tr> <tr> <td>-1,000,264.81</td> <td></td> </tr> <tr> <td>+357,763.56</td> <td></td> </tr> <tr> <td>-3,437,647.49</td> <td></td> </tr> </tbody> </table> <p><b>What are the top contributors?</b></p> <ul style="list-style-type: none"> <li>➤ <b>Candid International Technology SL</b> is the top <b>Customer Name</b> contributor. The top 10 values contribute 7.66 m (12%) overall.</li> <li>➤ <b>1 Year</b> is the top <b>Length of Sales Cycle</b> contributor, 165% above average.</li> <li>➤ <b>Human Services</b> is the top <b>Sector</b> contributor. The top 10 values contribute 58.32 m (88%) overall.</li> <li>➤ <b>C-Level</b> is the top <b>Contract Level</b> contributor, 93% above average.</li> <li>➤ <b>Italy</b> is the top <b>Country</b> contributor, 49% above average.</li> </ul>	Change	Value	+2,873,723.49		+1,052,970.70		-1,000,264.81		+357,763.56		-3,437,647.49	
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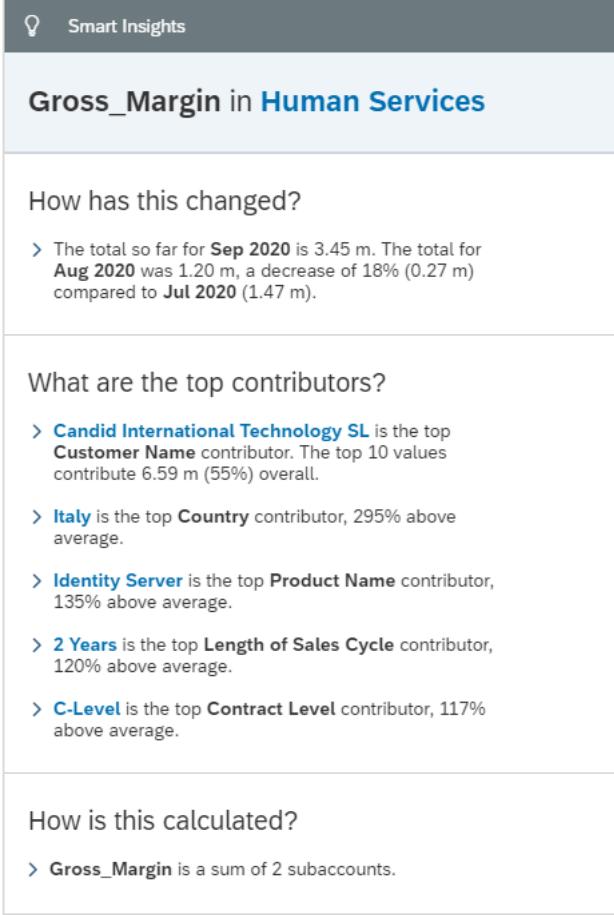
Explanation	Screenshot
<p>8. A question users often ask when they see a value in a chart is what drives that number or what contributes to it.</p> <p>The second type of insight provided are the top contributors. Top contributors are the dimension members that have contributed most to the selected value. In this case On-Premise Gross Margin. Smart Insights analyses all the dimension in your data and picks the dimensions where the contribution to the total is interesting.</p> <p><i>Click on the first top contributor Candid International Technology SL</i></p>	<p>What are the top contributors?</p> <ul style="list-style-type: none"> <li>➤ <b>Candid International Technology SL</b> is the top <b>Customer Name</b> contributor. The top 10 values contribute 7.66 m (12%) overall.</li> <li>➤ <b>1 Year</b> is the top <b>Length of Sales Cycle</b> contributor, 165% above average.</li> <li>➤ <b>Human Services</b> is the top <b>Sector</b> contributor. The top 10 values contribute 58.32 m (88%) overall.</li> <li>➤ <b>C-Level</b> is the top <b>Contract Level</b> contributor, 93% above average.</li> <li>➤ <b>Italy</b> is the top <b>Country</b> contributor, 49% above average.</li> </ul>

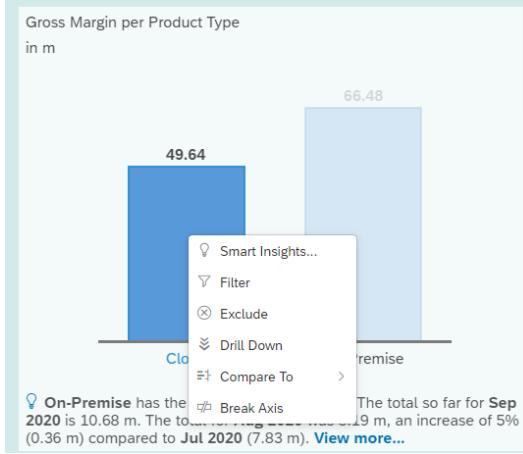
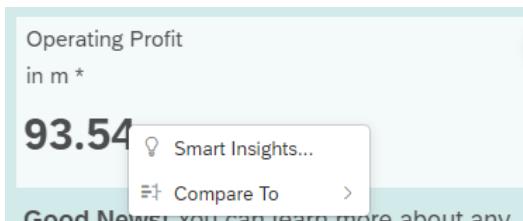
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<p>9. Once again, a combination of generated natural language and a generated visualization is used to explain how the top customers contribute to the total Gross Margin. The text explains the contribution and the gross margin of the top 10 are shown in bar chart. The stacked bar at the bottom allows the user to how much of the total Gross Margin is contributed by the top 10. Understanding this provides more context for the user and is the type of analyses that a user may attempt by hand in order to understand the data.</p> <p><i>Explore the other top contributors in order to understand how they contribute.</i></p>	<p>Smart Insights</p> <p>What are the top contributors?</p> <p>› <b>Candid International Technology SL</b> is the top <b>Customer Name</b> contributor. The top 10 values contribute 7.66 m (12%) overall.</p> <p>Gross_Margin per Customer Name for Actual in m   Top 10</p> <table border="1"> <thead> <tr> <th>Customer Name</th> <th>Gross Margin (in m)</th> </tr> </thead> <tbody> <tr><td>Candid International Technology SL</td><td>4.43</td></tr> <tr><td>La Quinta Hotel &amp; Towers GMBH</td><td>0.65</td></tr> <tr><td>MARIE ZDROK SL</td><td>0.36</td></tr> <tr><td>Edward Burns GMBH</td><td>0.35</td></tr> <tr><td>Greentree Enterprise CRL</td><td>0.33</td></tr> <tr><td>Peter Hoffman SL</td><td>0.33</td></tr> <tr><td>Computer Competence Center CooP</td><td>0.32</td></tr> <tr><td>La Quinta Hotel &amp; Towers ENT</td><td>0.30</td></tr> <tr><td>Cilox HiTech ENT</td><td>0.30</td></tr> <tr><td>Omega Soft-Hardware Markt PLC</td><td>0.30</td></tr> </tbody> </table> <p>Total Gross_Margin per Customer Name for Actual in m</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Gross Margin (in m)</th> </tr> </thead> <tbody> <tr><td>Top 10</td><td>7.66</td></tr> <tr><td>Others (1015)</td><td>58.82</td></tr> <tr><td>Total</td><td>66.48</td></tr> </tbody> </table> <p>› <b>1 Year</b> is the top <b>Length of Sales Cycle</b> contributor, 165% above average.</p> <p>› <b>Human Services</b> is the top <b>Sector</b> contributor. The top 10 values contribute 58.32 m (88%) overall.</p> <p>› <b>C-Level</b> is the top <b>Contract Level</b> contributor, 93% above average.</p> <p>› <b>Italy</b> is the top <b>Country</b> contributor, 49% above average.</p> <p>&lt; Close</p>	Customer Name	Gross Margin (in m)	Candid International Technology SL	4.43	La Quinta Hotel & Towers GMBH	0.65	MARIE ZDROK SL	0.36	Edward Burns GMBH	0.35	Greentree Enterprise CRL	0.33	Peter Hoffman SL	0.33	Computer Competence Center CooP	0.32	La Quinta Hotel & Towers ENT	0.30	Cilox HiTech ENT	0.30	Omega Soft-Hardware Markt PLC	0.30	Category	Gross Margin (in m)	Top 10	7.66	Others (1015)	58.82	Total	66.48
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<p>10. The insights provided for a data point depend on the nature of the measure and on the data available in the dataset.</p> <p>In this example Gross Margin is modelled as an Account Hierarchy. A natural question for a user to ask is how the component parts of the hierarchy contribute to the total. If you select the third insight type “How is this Calculated a waterfall chart is used to show the contribution of Net Revenue and Cost of Goods Sold to Gross Margin.</p>	<p>How is this calculated?</p> <p>▼ Gross_Margin is a sum of 2 subaccounts.</p> <p>Gross_Margin for Actual</p> <p>The waterfall chart illustrates the breakdown of Gross Margin. It starts with Net_Revenue (78,672,156) at the top, which is composed of Cost_of_Goods_Sold (12,196,811.21) and Gross_Margin (66,475,345). The Cost_of_Goods_Sold is shown as a red bar extending downwards, while the Gross_Margin is shown as a green bar extending upwards. The total Gross Margin is represented by a dark grey bar at the bottom.</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Net_Revenue</td> <td>78,672,156</td> </tr> <tr> <td>Cost_of_Goods_Sold</td> <td>12,196,811.21</td> </tr> <tr> <td>Gross_Margin</td> <td>66,475,345</td> </tr> </tbody> </table>	Category	Value	Net_Revenue	78,672,156	Cost_of_Goods_Sold	12,196,811.21	Gross_Margin	66,475,345
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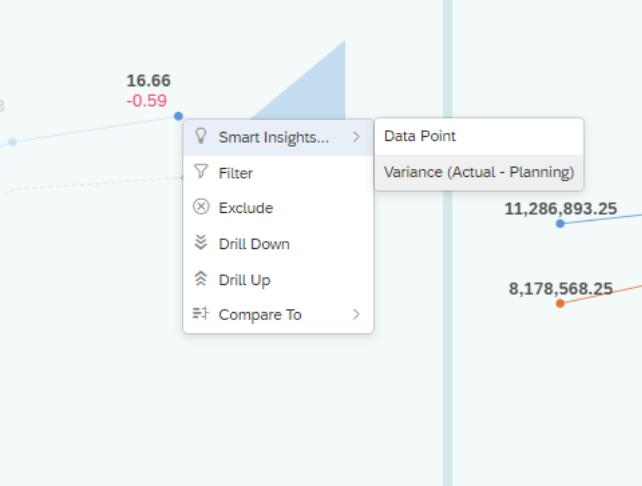
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<p>11. Now let's see how we can drill down further and explore more.  <i>Return to the top contributors and open the 3<sup>rd</sup> contributor: "Human Services is the top Sector Contributor"</i></p> <p>As we can see from the insight Human Services contributes more to our Gross Margin than the other sectors.</p> <p>I would like to drill down and understand what is driving the large Gross Margin in On Premise for The Human Services Sector.</p>	<p>What are the top contributors?</p> <ul style="list-style-type: none"> <li>➤ <b>Candid International Technology SL</b> is the top <b>Customer Name</b> contributor. The top 10 values contribute 7.66 m (12%) overall.</li> <li>➤ <b>1 Year</b> is the top <b>Length of Sales Cycle</b> contributor, 165% above average.</li> <li>➤ <b>Human Services</b> is the top <b>Sector</b> contributor. The top 10 values contribute 58.32 m (88%) overall.</li> </ul> <p>Gross_Margin per Sector for Actual</p> <p>in m   Top 10</p> <table border="1"> <thead> <tr> <th>Sector</th> <th>Gross Margin (in m)</th> </tr> </thead> <tbody> <tr><td>Human Services</td><td>11.89</td></tr> <tr><td>Consumer Services</td><td>6.10</td></tr> <tr><td>Consumer Product</td><td>5.93</td></tr> <tr><td>Retail</td><td>5.77</td></tr> <tr><td>Manufacturing</td><td>5.31</td></tr> <tr><td>High tech</td><td>5.08</td></tr> <tr><td>Finserv</td><td>4.62</td></tr> <tr><td>Goods</td><td>4.60</td></tr> <tr><td>Construction</td><td>4.54</td></tr> <tr><td>Healthcare</td><td>4.47</td></tr> </tbody> </table> <p>Total Gross_Margin per Sector for Actual</p> <p>in m</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Value (in m)</th> </tr> </thead> <tbody> <tr><td>Unassigned</td><td>4</td></tr> <tr><td>Top 10</td><td>58.32</td></tr> <tr><td>Others (1)</td><td>4</td></tr> <tr><td>Total</td><td>66.48</td></tr> </tbody> </table>	Sector	Gross Margin (in m)	Human Services	11.89	Consumer Services	6.10	Consumer Product	5.93	Retail	5.77	Manufacturing	5.31	High tech	5.08	Finserv	4.62	Goods	4.60	Construction	4.54	Healthcare	4.47	Category	Value (in m)	Unassigned	4	Top 10	58.32	Others (1)	4	Total	66.48
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<p>12. To Drill down on the Human Services sector.  <i>Right Click on Human Services select Smart Insights</i></p> <p>Smart Insights will now run on the sub-set of the data Gross Margin for On Premise products in the Human Services Sector.</p>	 <p>The screenshot shows the Smart Insights interface with the title "Smart Insights". Below it, a question "What are the top contributors?" is displayed. Two items are listed: "Candid International Technology SL" (top Customer Name contributor) and "Human Services" (top Sector contributor). A callout bubble points to the "Smart Insights..." button in the chart area.</p> <p><b>Gross_Margin per Sector for Actual</b></p> <p>in m   Top 10</p> <table border="1"> <thead> <tr> <th>Sector</th> <th>Gross Margin (in m)</th> </tr> </thead> <tbody> <tr><td>Human Services</td><td>11.89</td></tr> <tr><td>Consumer Services</td><td>6.10</td></tr> <tr><td>Consumer Product</td><td>5.93</td></tr> <tr><td>Retail</td><td>5.77</td></tr> <tr><td>Manufacturing</td><td>5.31</td></tr> <tr><td>High tech</td><td>5.08</td></tr> <tr><td>Finserv</td><td>4.62</td></tr> <tr><td>Goods</td><td>4.60</td></tr> <tr><td>Construction</td><td>4.54</td></tr> <tr><td>Healthcare</td><td>4.47</td></tr> </tbody> </table> <p><b>Total Gross_Margin per Sector for Actual</b></p> <p>in m</p> <p>Legend: Unassigned (green), Top 10 (orange), Others (1) (blue)</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Gross Margin (in m)</th> </tr> </thead> <tbody> <tr><td>Unassigned</td><td>4</td></tr> <tr><td>Top 10</td><td>58.32</td></tr> <tr><td>Others (1)</td><td>66.48</td></tr> </tbody> </table>	Sector	Gross Margin (in m)	Human Services	11.89	Consumer Services	6.10	Consumer Product	5.93	Retail	5.77	Manufacturing	5.31	High tech	5.08	Finserv	4.62	Goods	4.60	Construction	4.54	Healthcare	4.47	Category	Gross Margin (in m)	Unassigned	4	Top 10	58.32	Others (1)	66.48
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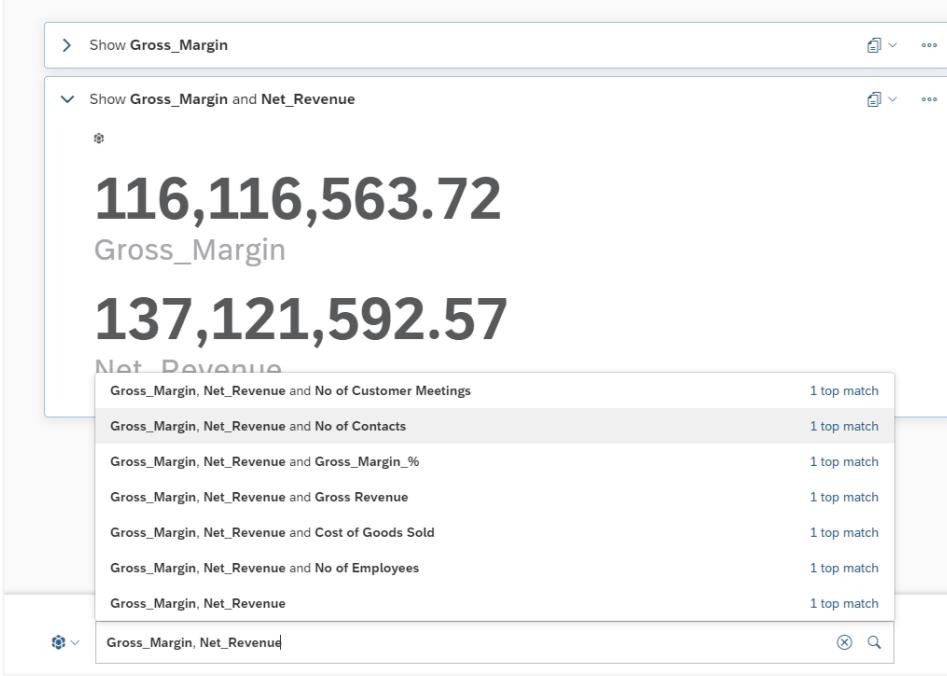
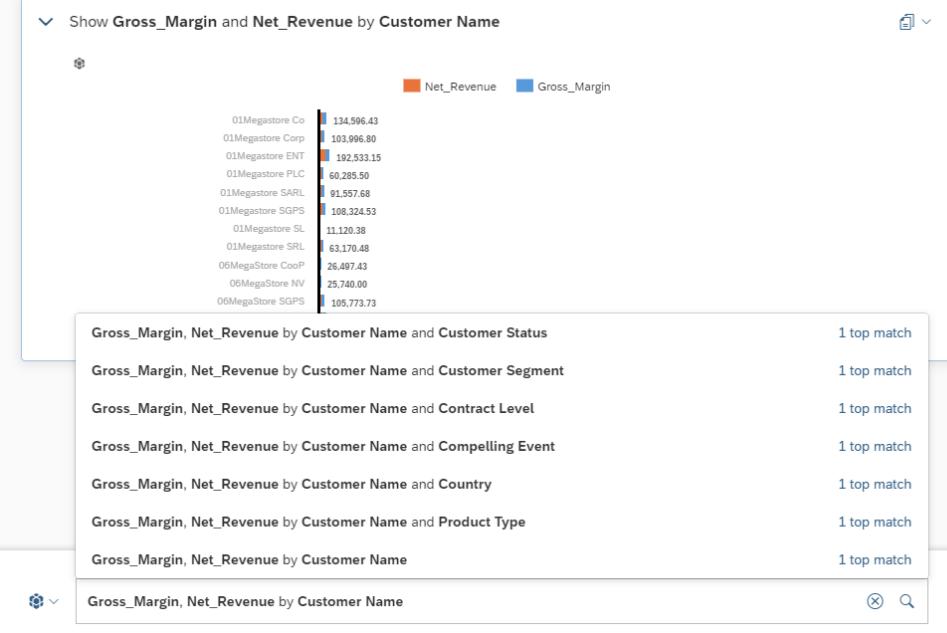
Explanation	Screenshot
<p>13. The same types of insights are provided for this sub-set of the data allowing me to take a more focused look at my data.</p> <p>Explore the insights for Gross Margin for On Premise products in the Human Services Sector.</p>	 <p><b>Gross Margin in Human Services</b></p> <p>How has this changed?</p> <ul style="list-style-type: none"> <li>➤ The total so far for <b>Sep 2020</b> is 3.45 m. The total for <b>Aug 2020</b> was 1.20 m, a decrease of 18% (0.27 m) compared to <b>Jul 2020</b> (1.47 m).</li> </ul> <p>What are the top contributors?</p> <ul style="list-style-type: none"> <li>➤ <b>Candid International Technology SL</b> is the top <b>Customer Name</b> contributor. The top 10 values contribute 6.59 m (55%) overall.</li> <li>➤ <b>Italy</b> is the top <b>Country</b> contributor, 295% above average.</li> <li>➤ <b>Identity Server</b> is the top <b>Product Name</b> contributor, 135% above average.</li> <li>➤ <b>2 Years</b> is the top <b>Length of Sales Cycle</b> contributor, 120% above average.</li> <li>➤ <b>C-Level</b> is the top <b>Contract Level</b> contributor, 117% above average.</li> </ul> <p>How is this calculated?</p> <ul style="list-style-type: none"> <li>➤ <b>Gross Margin</b> is a sum of 2 subaccounts.</li> </ul>
<p>14. Once you are have completed exploring the insights you can step back to the previous level to continue exploring.</p> <p><i>Click on the back arrow at any time to step back up.</i></p> <p>When you have completed your exploration, close the Insights panel by clicking close or clicking on the story</p>	 <p>&lt;                            Close</p>

Explanation	Screenshot
<p>15. We originally launched Smart Insights through the dynamic text token that was provided in the Product Type chart by the story designer. However Smart insights is available on any data point in the story. It can be accessed by selecting the datapoint and opened through the right click menu.</p>	
<p>16. To launch Smart Insights from a data point in a chart:  <i>Select Smart Insights from the right click menu on the data point</i></p>	
<p>17. Smart Insights can also be generated from X in a story through the right click menu.</p>	

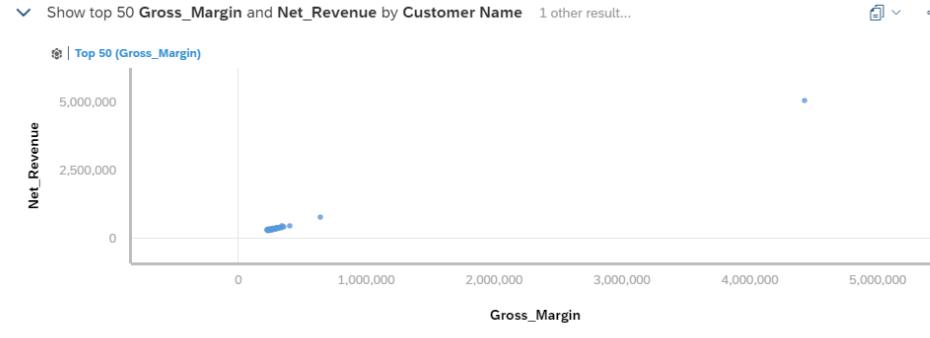
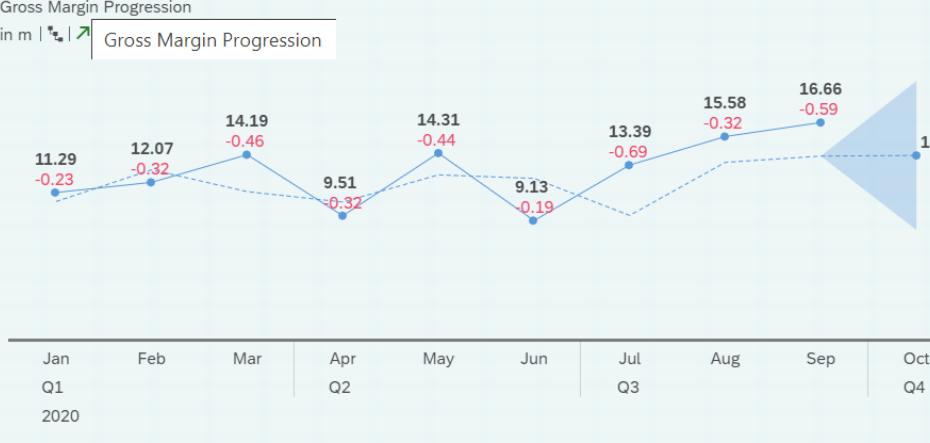
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<p>18. In this example, Operating Profit is a calculated measure. Similarly, to the Account Hierarchy example earlier, understanding the values that contribute to a calculated value aids a business user in understanding the data. Smart Insights allows a user to drill down on the calculation.</p> <p><i>Open the “How is it calculated?” insight.</i></p>	<p>How is this calculated?</p> <p>▼ <b>Operating_Profit</b> is a calculation.</p> <p>Formula: [Gross Margin] - [Operating Expenses]</p> <p><a href="#">Learn more about Formulas and Calculations</a></p>																																																								
<p>19. To see the values that contribute to the calculation hover over the measure name.</p>	<p>How is this calculated?</p> <p>▼ Gross_Margin <b>116,116,564</b> it is a calculation. [Gross Margin] - [Operating Expenses]</p> <p><a href="#">Learn more about Formulas and Calculations</a></p>																																																								
<p>20. Smart Insights can be generated for the component parts of calculation through the right click menu. Explore the Smart Insights for the values that contribute to the calculation.</p>	<p>How is this calculated?</p> <p>▼ <b>Operating_Profit</b> is a calculation.</p> <p>Formula: [Gross Margin] - [Operating Expenses]</p> <p>💡 Smart Insights... <a href="#">Learn more about Formulas and Calculations</a></p>																																																								
<p>21. Smart Insights are particularly useful in planning and financial use cases. Tables are often used in these use cases to present information. To launch Smart Insights for a value in a table access it through the right click menu.</p>	<table border="1"> <thead> <tr> <th>Country</th> <th>Brazil</th> <th>China</th> <th>France</th> <th>Germany</th> <th>India</th> <th>Italy</th> <th>Japan</th> </tr> </thead> <tbody> <tr> <td>Account</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Gross Margin</td> <td>14,228,469.64</td> <td>10,046,370.52</td> <td>10,949,472.70</td> <td>11,956,281.93</td> <td>11,617,729.81</td> <td>14,408,781.81</td> <td>11,428,947.74</td> </tr> <tr> <td>Cost of Goods Sold</td> <td>2,643,863.60</td> <td>1,779,493.96</td> <td>2,057,865.30</td> <td>2,102,584.92</td> <td>2,070,904.70</td> <td>2,356,313.32</td> <td>2,145,535.72</td> </tr> <tr> <td>Net_Revenue</td> <td>16,872,333.25</td> <td>11,825,86</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Gross Revenue</td> <td>22,160,060.46</td> <td>15,384,85</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Sales Deductions</td> <td>5,287,727.21</td> <td>3,558,98</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Country	Brazil	China	France	Germany	India	Italy	Japan	Account								Gross Margin	14,228,469.64	10,046,370.52	10,949,472.70	11,956,281.93	11,617,729.81	14,408,781.81	11,428,947.74	Cost of Goods Sold	2,643,863.60	1,779,493.96	2,057,865.30	2,102,584.92	2,070,904.70	2,356,313.32	2,145,535.72	Net_Revenue	16,872,333.25	11,825,86						Gross Revenue	22,160,060.46	15,384,85						Sales Deductions	5,287,727.21	3,558,98					
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<p>22. In addition to understanding the current state of the data understanding change or difference is often important. As can be seen from this chart SAP Analytics Cloud supports showing variance in a chart. Variance can be shown over time or as in this case between versions in the model. This chart shows the evolution of Gross Margin over time and the difference between the actual and planning versions. The Gross Margin for September 2020 of 16.66 Million is 0.59 Million behind plan.</p>	 <p>Gross Margin Progression in m   <span style="color: green;">Forecast</span></p> <table border="1"> <thead> <tr> <th>Month</th> <th>Actual (m)</th> <th>Variance (m)</th> </tr> </thead> <tbody> <tr><td>Jan Q1 2020</td><td>12.07</td><td>-0.32</td></tr> <tr><td>Feb</td><td>14.19</td><td>-0.46</td></tr> <tr><td>Mar</td><td>9.51</td><td>-0.32</td></tr> <tr><td>Apr Q2</td><td>14.31</td><td>-0.44</td></tr> <tr><td>May</td><td>9.13</td><td>-0.19</td></tr> <tr><td>Jun</td><td>13.39</td><td>-0.69</td></tr> <tr><td>Jul Q3</td><td>15.58</td><td>-0.32</td></tr> <tr><td>Aug</td><td>16.66</td><td>-0.59</td></tr> <tr><td>Sep</td><td>14.13</td><td></td></tr> <tr><td>Oct Q4</td><td></td><td></td></tr> </tbody> </table>	Month	Actual (m)	Variance (m)	Jan Q1 2020	12.07	-0.32	Feb	14.19	-0.46	Mar	9.51	-0.32	Apr Q2	14.31	-0.44	May	9.13	-0.19	Jun	13.39	-0.69	Jul Q3	15.58	-0.32	Aug	16.66	-0.59	Sep	14.13		Oct Q4		
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<p>23. To generate Smart Insights for a variance: <i>Right click on the data point. Select Variance (Actual – Planning) from the submenu.</i></p> <p>From the Smart Insights investigate the what is behind the difference between actual and planned values</p>	 <p>Smart Insights... &gt;</p> <ul style="list-style-type: none"> <li>Filter</li> <li>Exclude</li> <li>Drill Down</li> <li>Drill Up</li> <li>Compare To &gt;</li> </ul> <p>Data Point</p> <p>Variance (Actual - Planning)</p> <p>11,286,893.25</p> <p>8,178,568.25</p>																																	
<p>24. Another great way to interact with the data is through natural language. Search to Insight supports natural language searches of the data: <i>Click the Search to Insight icon.</i></p>	 <p>Controls   <span style="background-color: #0070C0; color: white; padding: 2px 5px;">Edit</span>   <span style="background-color: #0070C0; color: white; padding: 2px 5px;">View</span></p>																																	

Explanation	Screenshot
<p>25. Search to Insight enables a business user to explore for the data and to search for information without understanding the data structures and without edit or create rights in SAP Analytics Cloud</p> <p>We have seen that Gross Margin is calculated from Net Revenue and Cost of Goods sold. Let's use Search to Insight to understand the correlation between Net Revenue and Cost of Goods Sold.</p> <p>Start by searching for Gross Margin</p> <p><i>Type Gross in the search Box</i></p> <p>Search to Insight will provide suggestions that match Gross. Select Gross Margin and hit return. This shows us the total Gross MMargin.</p>	

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<p>26. Now let's add Net Profit to the search      Start to type Revenue in the search and select Net_Revenue</p>	 <p>The screenshot shows a search interface with two large numerical results displayed prominently:</p> <ul style="list-style-type: none"> <li>116,116,563.72 (Gross Margin)</li> <li>137,121,592.57 (Net Revenue)</li> </ul> <p>Below these results is a dropdown menu with the following suggestions:</p> <ul style="list-style-type: none"> <li>Show Gross_Margin</li> <li>Show Gross_Margin and Net_Revenue</li> <li>Gross_Margin, Net_Revenue and No of Customer Meetings</li> <li>Gross_Margin, Net_Revenue and No of Contacts</li> <li>Gross_Margin, Net_Revenue and Gross_Margin_%</li> <li>Gross_Margin, Net_Revenue and Gross Revenue</li> <li>Gross_Margin, Net_Revenue and Cost of Goods Sold</li> <li>Gross_Margin, Net_Revenue and No of Employees</li> <li>Gross_Margin, Net_Revenue</li> <li>Gross_Margin, Net_Revenue</li> </ul>																																				
<p>27. To see these figure for a particular dimension, add the dimension to the search      Start to add "by customer" to the search. select "by Customer_Name" from the suggestions</p>	 <p>The screenshot shows a search interface with a bar chart titled "Show Gross_Margin and Net_Revenue by Customer Name". The chart displays Net Revenue (orange) and Gross Margin (blue) for various customers. The data is as follows:</p> <table border="1"> <thead> <tr> <th>Customer Name</th> <th>Net Revenue</th> <th>Gross Margin</th> </tr> </thead> <tbody> <tr><td>01Megastore Co</td><td>134,596.43</td><td></td></tr> <tr><td>01Megastore Corp</td><td>103,996.80</td><td></td></tr> <tr><td>01Megastore ENT</td><td></td><td>192,533.15</td></tr> <tr><td>01Megastore PLC</td><td>60,285.50</td><td></td></tr> <tr><td>01Megastore SRL</td><td>91,557.68</td><td></td></tr> <tr><td>01Megastore SGPS</td><td>108,324.53</td><td></td></tr> <tr><td>01Megastore SL</td><td>11,120.38</td><td></td></tr> <tr><td>01Megastore SRL</td><td>63,170.48</td><td></td></tr> <tr><td>06MegaStore Coop</td><td>26,497.43</td><td></td></tr> <tr><td>06MegaStore NV</td><td>25,740.00</td><td></td></tr> <tr><td>06MegaStore SGPS</td><td></td><td>105,773.73</td></tr> </tbody> </table> <p>Below the chart is a dropdown menu with the following suggestions:</p> <ul style="list-style-type: none"> <li>Show Gross_Margin and Net_Revenue by Customer Name</li> <li>Gross_Margin, Net_Revenue by Customer Name and Customer Status</li> <li>Gross_Margin, Net_Revenue by Customer Name and Customer Segment</li> <li>Gross_Margin, Net_Revenue by Customer Name and Contract Level</li> <li>Gross_Margin, Net_Revenue by Customer Name and Compelling Event</li> <li>Gross_Margin, Net_Revenue by Customer Name and Country</li> <li>Gross_Margin, Net_Revenue by Customer Name and Product Type</li> <li>Gross_Margin, Net_Revenue by Customer Name</li> <li>Gross_Margin, Net_Revenue by Customer Name</li> </ul>	Customer Name	Net Revenue	Gross Margin	01Megastore Co	134,596.43		01Megastore Corp	103,996.80		01Megastore ENT		192,533.15	01Megastore PLC	60,285.50		01Megastore SRL	91,557.68		01Megastore SGPS	108,324.53		01Megastore SL	11,120.38		01Megastore SRL	63,170.48		06MegaStore Coop	26,497.43		06MegaStore NV	25,740.00		06MegaStore SGPS		105,773.73
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<p>28. We have used search to build a chart of Net Revenue and Gross Margin for Customer Name but we wanted to visualize the correlation. Let's focus on the biggest customers first Add top 50 to the end of the search string.</p>	<p>Show top 50 Gross_Margin and Net_Revenue by Customer Name 1 other result...</p> <p>Top 50 (Gross_Margin)</p> <table border="1"> <thead> <tr> <th>Customer Name</th> <th>Net_Revenue</th> <th>Gross_Margin</th> <th>Total</th> </tr> </thead> <tbody> <tr><td>Candid International Technology SL</td><td>5.018.031,29</td><td>4.430.021,16</td><td>9.448.052,45</td></tr> <tr><td>La Quinta Hotel &amp; Towers GMBH</td><td>743.145,32</td><td>645.181,4</td><td>1.388.326,83</td></tr> <tr><td>Ronald Bey NV</td><td>829.990,54</td><td></td><td></td></tr> <tr><td>MARIE ZDROK SL</td><td>747.993,80</td><td></td><td></td></tr> <tr><td>Edward Burns GMBH</td><td>706.259,87</td><td></td><td></td></tr> <tr><td>Candid International Technology AB</td><td>773.301,82</td><td></td><td></td></tr> <tr><td>Greentree Enterprise CRL</td><td>688.714,56</td><td></td><td></td></tr> <tr><td>Peter Hoffman SL</td><td>680.360,58</td><td></td><td></td></tr> <tr><td>Computer Competence Center CoP</td><td>662.216,46</td><td></td><td></td></tr> <tr><td>JANE CASTILLO SL</td><td>652.420,71</td><td></td><td></td></tr> <tr><td>New Deutsche Computer AG</td><td>653.772,19</td><td></td><td></td></tr> <tr><td>Elektromarkt Bamby ENT</td><td>630.286,61</td><td></td><td></td></tr> </tbody> </table> <p>Next actions</p> <p>Choose a model... Show suggested models...</p> <p>Gross_Margin, Net_Revenue by Customer Name top 50 1 top match</p> <p>Gross_Margin, Net_Revenue by Customer Name top 50</p>	Customer Name	Net_Revenue	Gross_Margin	Total	Candid International Technology SL	5.018.031,29	4.430.021,16	9.448.052,45	La Quinta Hotel & Towers GMBH	743.145,32	645.181,4	1.388.326,83	Ronald Bey NV	829.990,54			MARIE ZDROK SL	747.993,80			Edward Burns GMBH	706.259,87			Candid International Technology AB	773.301,82			Greentree Enterprise CRL	688.714,56			Peter Hoffman SL	680.360,58			Computer Competence Center CoP	662.216,46			JANE CASTILLO SL	652.420,71			New Deutsche Computer AG	653.772,19			Elektromarkt Bamby ENT	630.286,61		
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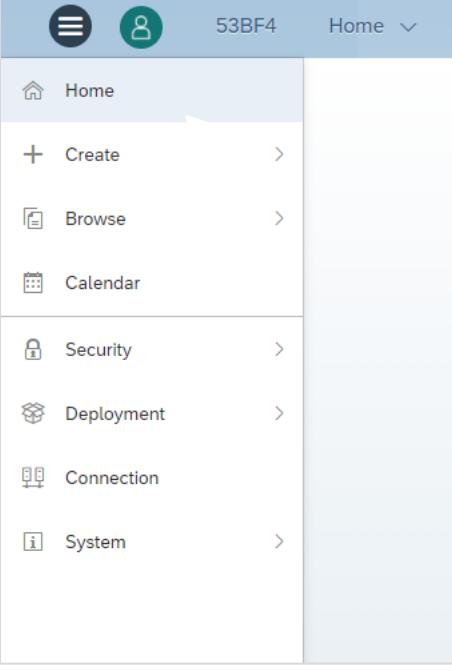
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30. We can visually see the linear relationship between Net Revenue and Gross Margin in the scatterplot.	 <p>Next actions</p> <p><a href="#">Choose a model...</a> <a href="#">Show suggested models...</a></p>																																	
31. Exit search to insights	<p><a href="#">Exit Search to Insight</a></p>																																	
32. A final feature to look at is forecasting. Forecasting uses the historical time series data to predict likely future values. As you can see from the Gross Margin Progression chart the Analyst has already added a forecast.	 <table border="1"> <caption>Gross Margin Progression Data</caption> <thead> <tr> <th>Month</th> <th>Value</th> <th>Change</th> </tr> </thead> <tbody> <tr><td>Jan 2020</td><td>11.29</td><td>-0.23</td></tr> <tr><td>Feb 2020</td><td>12.07</td><td>-0.32</td></tr> <tr><td>Mar 2020</td><td>14.19</td><td>-0.46</td></tr> <tr><td>Apr 2020</td><td>9.51</td><td>-0.32</td></tr> <tr><td>May 2020</td><td>14.31</td><td>-0.44</td></tr> <tr><td>Jun 2020</td><td>9.13</td><td>-0.19</td></tr> <tr><td>Jul 2020 (Forecast)</td><td>13.39</td><td>-0.69</td></tr> <tr><td>Aug 2020 (Forecast)</td><td>15.58</td><td>-0.32</td></tr> <tr><td>Sep 2020 (Forecast)</td><td>16.66</td><td>-0.59</td></tr> <tr><td>Oct 2020 (Forecast)</td><td>14.00</td><td></td></tr> </tbody> </table>	Month	Value	Change	Jan 2020	11.29	-0.23	Feb 2020	12.07	-0.32	Mar 2020	14.19	-0.46	Apr 2020	9.51	-0.32	May 2020	14.31	-0.44	Jun 2020	9.13	-0.19	Jul 2020 (Forecast)	13.39	-0.69	Aug 2020 (Forecast)	15.58	-0.32	Sep 2020 (Forecast)	16.66	-0.59	Oct 2020 (Forecast)	14.00	
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33. A business user or consumer of a story can also add forecasts. On the chart menu select Add -> Forecast -> Automatic Forecast	 <table border="1"> <caption>Gross Margin and Operating Profit Data</caption> <thead> <tr> <th>Month</th> <th>Gross Margin</th> <th>Operating Profit</th> </tr> </thead> <tbody> <tr><td>Jan 2020</td><td>11,286,893.25</td><td>8,178,568.25</td></tr> <tr><td>Feb 2020</td><td>9,730,386.44</td><td>9,730,386.44</td></tr> <tr><td>Mar 2020</td><td>14,186,863.51</td><td>11,611,682.51</td></tr> <tr><td>Apr 2020</td><td>9,505,151.40</td><td>7,115,279.40</td></tr> <tr><td>May 2020</td><td>14,309,550.60</td><td>11,655,379.60</td></tr> <tr><td>Jun 2020</td><td>9,133,743.64</td><td>7,058,600.64</td></tr> <tr><td>Jul 2020 (Forecast)</td><td>11,128,574.62</td><td>11,128,574.62</td></tr> <tr><td>Aug 2020 (Forecast)</td><td>13,350,702.02</td><td>13,350,702.02</td></tr> <tr><td>Sep 2020 (Forecast)</td><td>14,000,000.00</td><td>14,000,000.00</td></tr> </tbody> </table>	Month	Gross Margin	Operating Profit	Jan 2020	11,286,893.25	8,178,568.25	Feb 2020	9,730,386.44	9,730,386.44	Mar 2020	14,186,863.51	11,611,682.51	Apr 2020	9,505,151.40	7,115,279.40	May 2020	14,309,550.60	11,655,379.60	Jun 2020	9,133,743.64	7,058,600.64	Jul 2020 (Forecast)	11,128,574.62	11,128,574.62	Aug 2020 (Forecast)	13,350,702.02	13,350,702.02	Sep 2020 (Forecast)	14,000,000.00	14,000,000.00			
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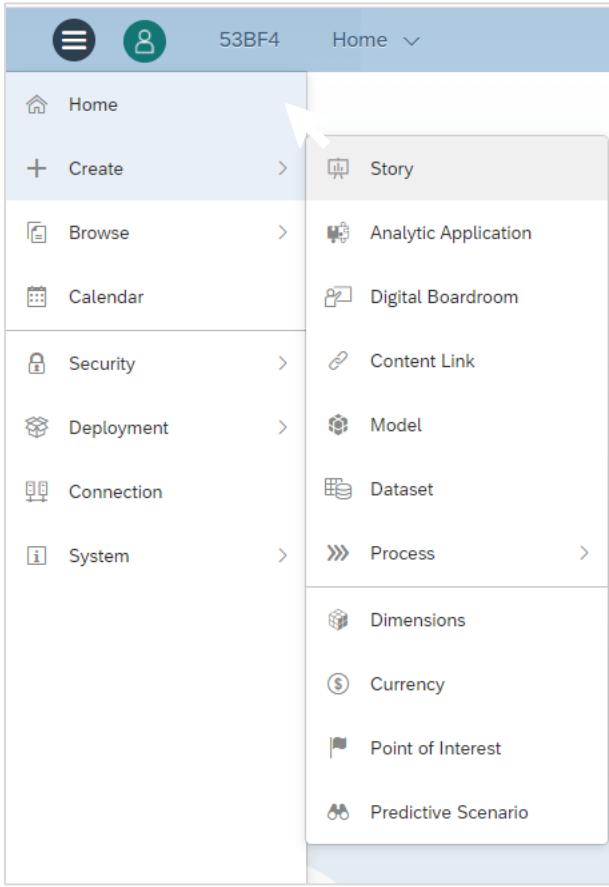
Explanation	Screenshot																																	
<p>34. A forecast is added to measures in the chart. The automated forecast algorithm analyses the data for trend, seasonal patterns and fluctuations in order to determine the best forecast. Alternative forecasts algorithms Linear Regression and Triple Exponential Smoothing are also available.</p>	<table border="1"> <caption>Data points from the Gross Margin and Operating Profit chart</caption> <thead> <tr> <th>Month</th> <th>Gross Margin</th> <th>Operating Profit</th> </tr> </thead> <tbody> <tr><td>Jan 2020</td><td>12,067,057.44</td><td>9,730,386.44</td></tr> <tr><td>Feb 2020</td><td>14,186,863.51</td><td>9,505,151.40</td></tr> <tr><td>Mar 2020</td><td>14,309,550.60</td><td>7,115,279.40</td></tr> <tr><td>Apr 2020</td><td>11,655,379.60</td><td>9,133,743.64</td></tr> <tr><td>May 2020</td><td>13,390,702.62</td><td>7,058,600.64</td></tr> <tr><td>Jun 2020</td><td>15,578,861.71</td><td>11,128,574.62</td></tr> <tr><td>Jul 2020</td><td></td><td></td></tr> <tr><td>Aug 2020</td><td></td><td></td></tr> <tr><td>Sep 2020</td><td></td><td></td></tr> <tr><td>Oct 2020</td><td></td><td></td></tr> </tbody> </table>	Month	Gross Margin	Operating Profit	Jan 2020	12,067,057.44	9,730,386.44	Feb 2020	14,186,863.51	9,505,151.40	Mar 2020	14,309,550.60	7,115,279.40	Apr 2020	11,655,379.60	9,133,743.64	May 2020	13,390,702.62	7,058,600.64	Jun 2020	15,578,861.71	11,128,574.62	Jul 2020			Aug 2020			Sep 2020			Oct 2020		
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## EXERCISE 2 – AS A BUSINESS ANALYST USE AUGMENTED FEATURES TO EXPLORE DATA AND BUILD CONTENT

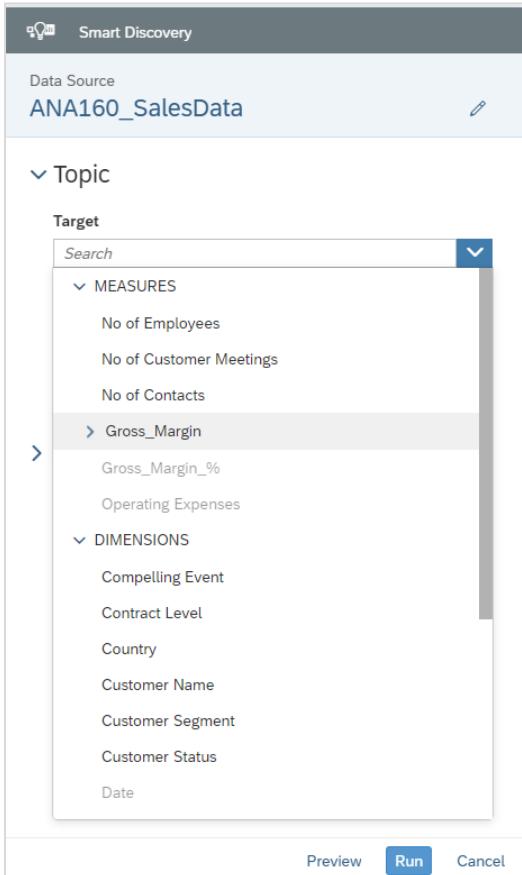
### Introduction

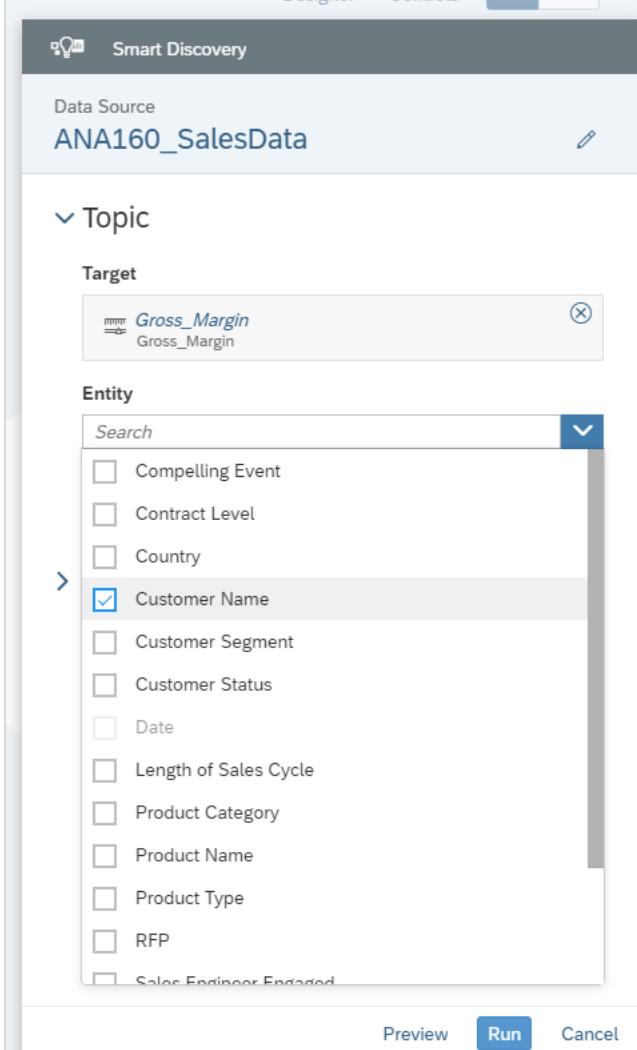
In this exercise we switch persona from the Information Worker to the Business Analyst and see how the augmented features in SAP Analytics Cloud can help you to build content. This data used in this exercise is the same as that underlying the story in the first exercise.

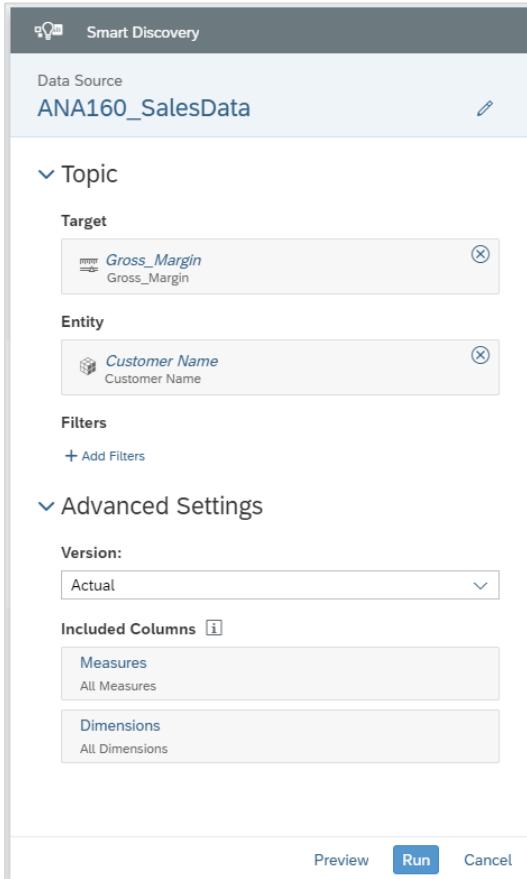
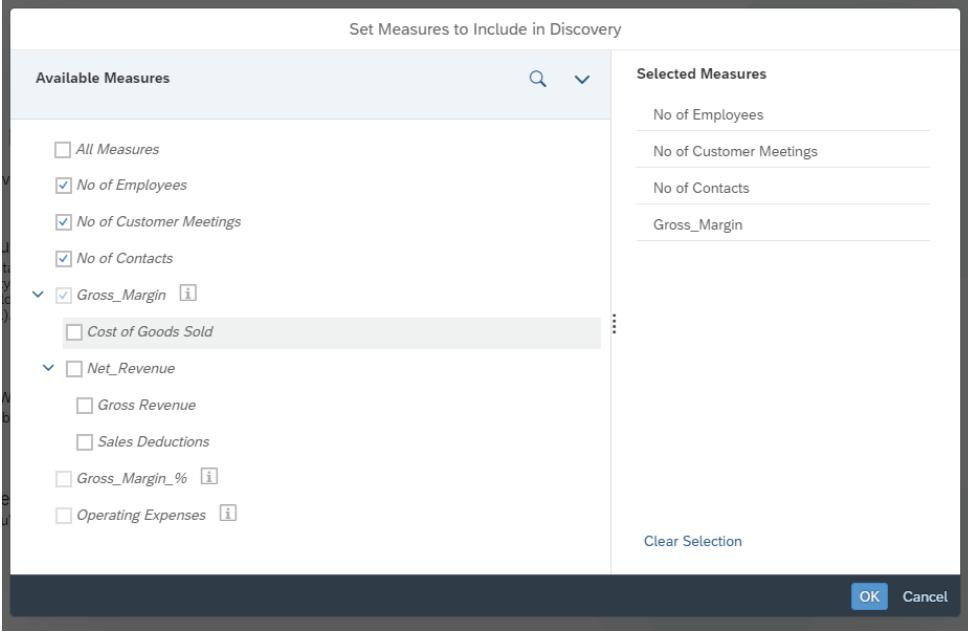
Explanation	Screenshot
1. Navigate to the Home page	 <p>The screenshot displays a software application's navigation sidebar. The 'Home' option is currently selected, indicated by a blue background and white text. The other menu items listed are 'Create', 'Browse', 'Calendar', 'Security', 'Deployment', 'Connection', and 'System', each with a corresponding icon. At the top of the screen, there is a header bar with the user ID '53BF4' and a 'Home' dropdown menu.</p>

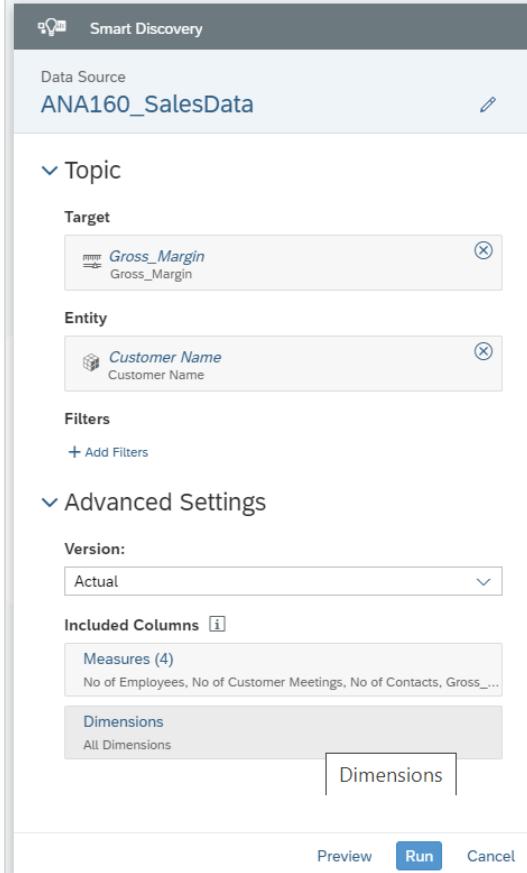
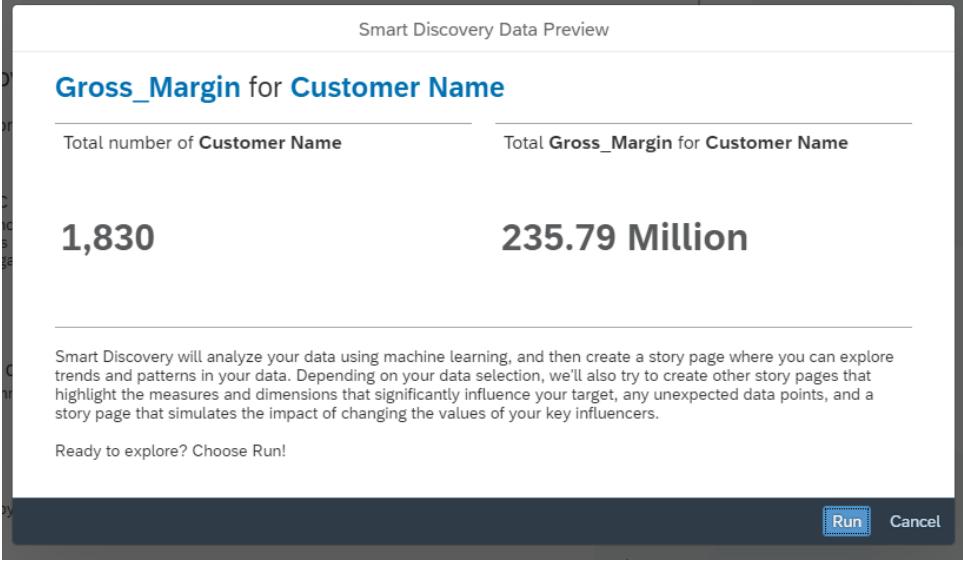
Explanation	Screenshot
<p>2. Smart Discovery is an automated data exploration tool. The user can specify their business question by specifying the measure or outcome they wish to understand and the entity in the data about which they wish to understand it. Examples could be revenue by product or attrition by employee. Smart Discovery automatically prepares the data for the business question, analyses the data and generates content automatically for the user that helps answer the question. To launch Smart Discovery the user can choose to start a story with a Smart Discovery as we will do here or alternatively can launch it from within a story using the  icon on the tool bar.</p> <p>As we are going to create our story using Smart Discovery we first need to start creating a story. Select Create -&gt; story from the menu in the top left</p>	 <p>The screenshot shows the Power BI desktop application's ribbon at the top with the identifier '53BF4'. Below the ribbon is a navigation bar with icons for Home, Create, Browse, Calendar, Security, Deployment, Connection, and System. A dropdown menu is open under the 'Create' icon, listing several options: Story (which is highlighted), Analytic Application, Digital Boardroom, Content Link, Model, Dataset, Process, Dimensions, Currency, Point of Interest, and Predictive Scenario. The 'Story' option is the one currently selected.</p>

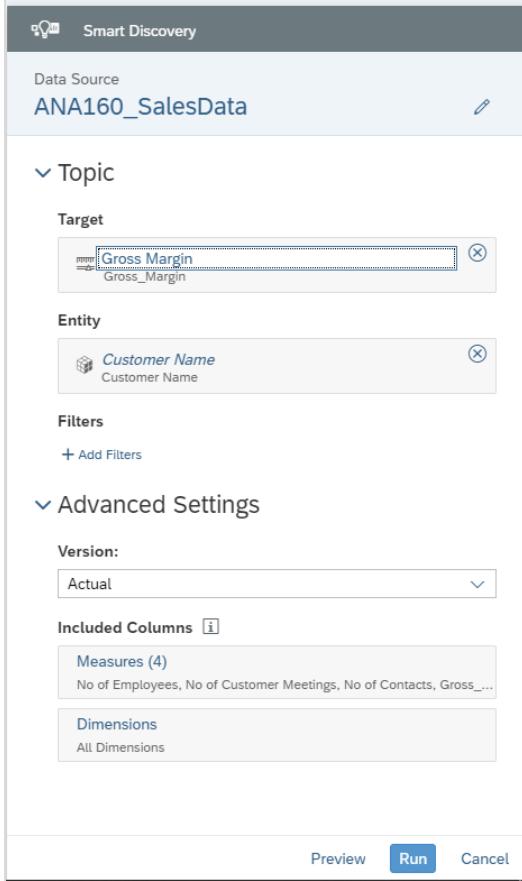
Explanation	Screenshot						
<p>3. There are multiple ways to create a story in this case select Run a Smart Discovery</p>	<p>Choose how you'd like to start your story.</p> <p>Custom Templates</p> <ul style="list-style-type: none"> <li>AE_2020_23 Template</li> <li>KEZ_AE_TEMPLATE</li> <li>New Document Template</li> </ul> <p>See more...</p> <p>SAP Analytics Templates</p> <ul style="list-style-type: none"> <li>Boardroom</li> <li>Presentation - Responsive</li> <li>Report</li> </ul> <p>See more...</p> <p>Access &amp; Explore Data</p> <p>Bring in data from CSV, Excel, and other data sources to explore and create visualizations.</p> <p>Run a Smart Discovery</p> <p>Explore your data using machine learning algorithms to discover key influencers, unexpected values and more.</p> <p>Add a Responsive Page</p> <p>Create flexible dashboards that can be presented on any device or screen size.</p> <p>Add a Canvas Page</p> <p>Create pixel perfect reports or presentations.</p> <p>Add a Grid Page</p> <p>A traditional spreadsheet page</p>						
<p>4. Select the data model. A copy of the model we used in the previous exercise is available in Public/ANA_160</p>	<p>Select Dataset or Model</p> <p>My Files / Public / ANA_160</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Description</th> <th>Owner</th> </tr> </thead> <tbody> <tr> <td>ANA160_SalesData</td> <td>updated for 2020</td> <td>Rob</td> </tr> </tbody> </table> <p>All files</p> <p>Search</p> <p>Cancel</p>	Name	Description	Owner	ANA160_SalesData	updated for 2020	Rob
Name	Description	Owner					
ANA160_SalesData	updated for 2020	Rob					
<p>5. Take a look at the description of the Smart Discovery Process .</p>	<p>Run a Smart Discovery!</p> <p>With Smart Discovery it only takes a few moments to explore your data.</p> <ol style="list-style-type: none"> <li>Set your topic - what data do you want to explore? Select a target and an entity. The target is the measure or dimension you'd like to know more about. The entity defines the dimensions you'd like to explore in relation to the target, and the level to which we should aggregate your data to analyze it for you. You can also refine your topic by adding filters (optional).</li> <li>Preview your data (optional) To get a brief summary of the data you've selected to explore, choose Preview.</li> <li>Choose Run! Once you're happy with the data you've selected to explore, choose Run, and let us do the rest!</li> </ol>						

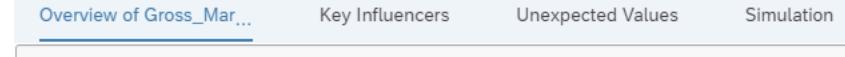
Explanation	Screenshot
<p>6. To run Smart Discover, we need to specify the business question we want to answer. This means specifying the measure or outcome in the data we wish to understand, this is referred to as the target. In this case we will select a measure as the target.</p> <p><i>Select Gross Margin</i></p> <p>To investigate an outcome or dimension value in the data we could select a dimension and then specify the target values for that dimensions.</p>	 <p>The screenshot shows the 'Smart Discovery' interface. At the top, it displays the 'Data Source' as 'ANA160_SalesData'. Below this, under the 'Topic' section, there is a 'Target' dropdown menu. The 'MEASURES' section is expanded, showing 'No of Employees', 'No of Customer Meetings', 'No of Contacts', and 'Gross Margin'. The 'Gross Margin' option is selected, indicated by a grey background. The 'DIMENSIONS' section is also visible, listing 'Compelling Event', 'Contract Level', 'Country', 'Customer Name', 'Customer Segment', 'Customer Status', and 'Date'. At the bottom of the interface are three buttons: 'Preview', 'Run' (which is highlighted in blue), and 'Cancel'.</p>

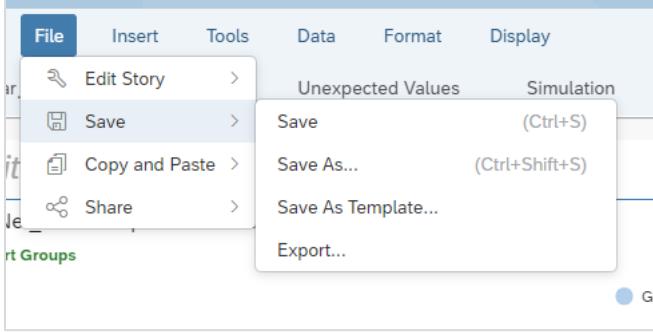
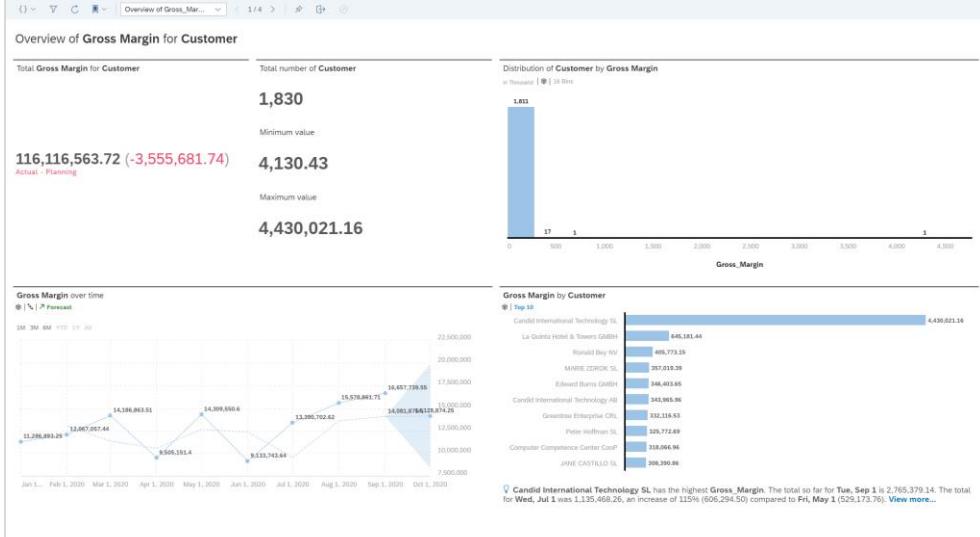
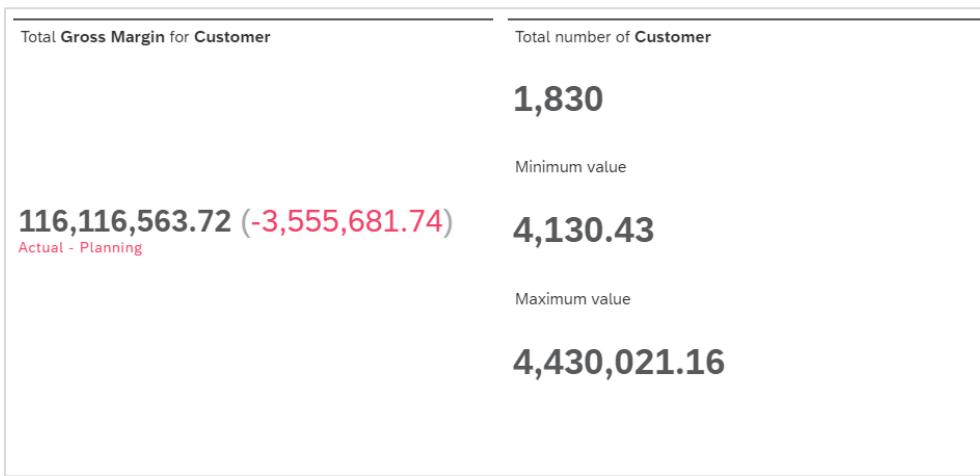
Explanation	Screenshot
<p>7. Next, we need to specify the entity or object in the data around which we focus the exploration. This allows Smart Discovery to automatically prepare the data for the business question. This is the most significant recent change to Smart Discovery. Previously Smart Discovery automatically selected the level at which to aggregate the data. Typically, the data was analysed at the transaction level. To guide the exploration it was often necessary to prepare the data outside of SAP Analytics Cloud.</p> <p>In this case we would like to understand what influences Gross Margin for Customers so we can set the entity at customer or Customer_Name in our model.</p> <p>Select Customer_Name as the entity.</p>	 <p>The screenshot shows the SAP Analytics Cloud Smart Discovery interface. At the top, it displays the title "Smart Discovery" and the data source "ANA160_SalesData". Below this, under the "Topic" section, there is a "Target" field containing "Gross Margin" and an "Entity" dropdown menu. The "Entity" menu is open, showing a list of options including "Customer Name", which is selected (indicated by a checked checkbox). Other options listed include Compelling Event, Contract Level, Country, Customer Segment, Customer Status, Date, Length of Sales Cycle, Product Category, Product Name, Product Type, RFP, and Sales Engineer Enabled. At the bottom of the entity list, there are buttons for "Preview", "Run" (which is highlighted in blue), and "Cancel".</p>

Explanation	Screenshot
<p>8. Smart Discovery uses a combination of statistical analysis and machine learning to explore the data. In order to guide the exploration, the Advanced Setting can be used to configure Smart Discovery. Expand Advanced Settings</p>	 <p>The screenshot shows the 'Smart Discovery' configuration dialog. Under 'Target', 'Gross Margin' is selected. Under 'Entity', 'Customer Name' is selected. There is a section for 'Filters' with a '+ Add Filters' button. A collapsed section labeled 'Advanced Settings' contains fields for 'Version:' (set to 'Actual'), 'Included Columns' (with 'Measures' and 'Dimensions' sections both set to 'All Measures'). At the bottom are 'Preview', 'Run', and 'Cancel' buttons.</p>
<p>9. As the target Gross Margin is modelled as an Account Hierarchy exclude the component measures from Smart Discovery. Click on Measures in the Advanced Settings menu. Deselect all the measures that are part of the Gross Margin Account Hierarchy. These are: Cost of goods sold, Net_Revenue, Gross Revenue and Sales Deductions. Click OK</p>	 <p>The screenshot shows the 'Set Measures to Include in Discovery' dialog. On the left, under 'Available Measures', 'Gross Margin' is expanded, showing its components: 'Cost of Goods Sold', 'Net_Revenue', 'Gross Revenue', 'Sales Deductions', 'Gross Margin %', and 'Operating Expenses'. Most of these checkboxes are checked. On the right, under 'Selected Measures', 'No of Employees', 'No of Customer Meetings', 'No of Contacts', and 'Gross Margin' are listed. At the bottom are 'OK' and 'Cancel' buttons.</p>

Explanation	Screenshot
<p>10. We have now configured the Smart Discovery. Before executing look at the preview to ensure Smart Discovery is answering the correct question. Click Preview at the bottom of the settings panel.</p>	 <p>The screenshot shows the 'Smart Discovery' configuration interface. Under 'Data Source', it is set to 'ANA160_SalesData'. In the 'Topic' section, the 'Target' is set to 'Gross Margin' and the 'Entity' is set to 'Customer Name'. Below these, there are sections for 'Filters' and 'Advanced Settings' where 'Version' is set to 'Actual'. Under 'Included Columns', 'Measures (4)' are listed: 'No of Employees', 'No of Customer Meetings', 'No of Contacts', and 'Gross...'. Under 'Dimensions', 'All Dimensions' are selected. At the bottom, there are 'Preview', 'Run', and 'Cancel' buttons.</p>
<p>11. Review the preview to ensure that Smart Discovery is configured correctly.</p> <p>In this case although the setting appear to be correct the text is not as readable as it could be. Before running Smart Discovery you should rename the target and entity to make the output more readable. Click Cancel to return to the settings.</p>	 <p>The screenshot shows the 'Smart Discovery Data Preview' page. It displays two main metrics: 'Total number of Customer Name' (1,830) and 'Total Gross Margin for Customer Name' (235.79 Million). Below these, a descriptive text explains that Smart Discovery will analyze data using machine learning to create story pages for trends and patterns. A button at the bottom says 'Ready to explore? Choose Run!' with 'Run' and 'Cancel' options.</p>

Explanation	Screenshot
<p>12. Click on the target name Gross_Margin and rename it to a more readable Gross Margin.</p> <p>Rename Customer Name to Customer</p> <p>These changes are local to this Smart Discovery and are not reflected in the data.</p> <p>Click Preview once more to review the question.</p> <p>If the question appears correct click Run</p> <p>This will start the Smart Discovery.</p>	
<p>13. Smart Discovery will Prepare the data to match the question, analyze the data and produce content focused on answering the business question.</p>	<p>We're now analyzing your data based on your selection Gross Margin for Customer, and then we'll build a story for you.</p> <p>• • •</p>

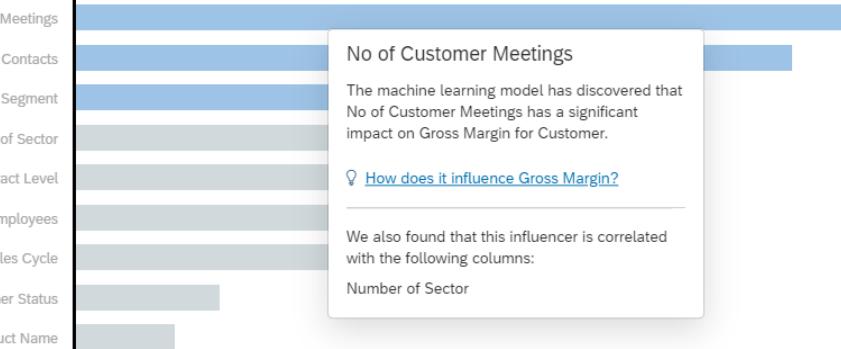
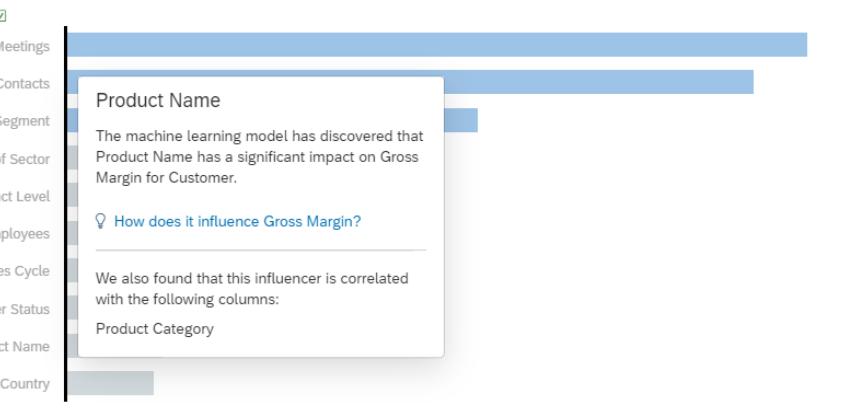
Explanation	Screenshot
<p>14. Once Smart Discovery completes it will produce a story with 4 pages: Overview of Gross Margin, Key Influencers, Unexpected Values and Simulation.</p> <p>The content provided in each of the pages is generated dynamically and is determined based on the business question and the information available in the data.</p> <p>If for instance it is not possible to predict the target based on the dataset only the overview page will be generated.</p> <p>It is not intended that the content generated is a final story to answer our question. Some of the content generated may be retained and included in a final story. The insights found by Smart Discovery are the real value and these will often inspire further questions or other visualizations. It is expected that charts will be added, removed and modified and that the story may be deleted once the insight is understood.</p>	

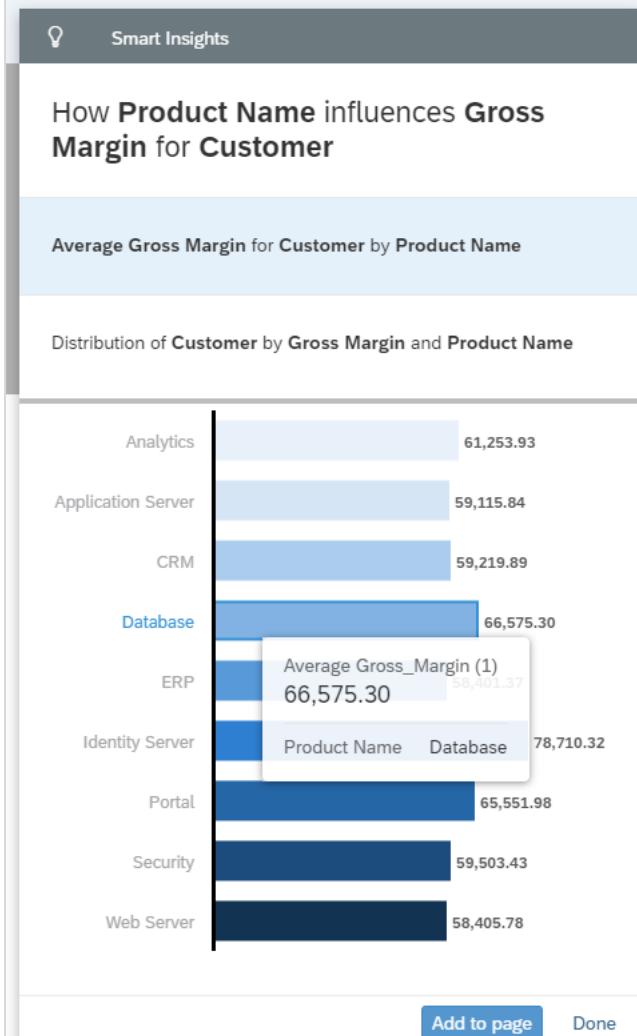
Explanation	Screenshot
<p>15. It is sensible to save the story at this point before continuing It can be saved in the folder created earlier using the <i>File -&gt; Save</i> menu.</p>	
<p>16. The Overview page provides a summary view of Gross Margin for Customers.</p>	
<p>17. Some statistics on gross margin for customers are provided.  As the data model contains both actual and planning number the variance is shown.  If you wish you can use Smart Insights as we did in exercise 1 to explore the variance.  The total number of customer and min and max values are provided.</p>	

Explanation	Screenshot																						
<p>18. The other charts on the page are based on the information available in the data and are focused on the gross margin by customer.</p>	<p>Distribution of Customer by Gross Margin in Thousand   ⚡   16 Bins</p> <p>Gross Margin</p> <p><b>Gross Margin by Customer</b> ⚡   Top 10</p> <table border="1"> <thead> <tr> <th>Customer</th> <th>Gross Margin (Thousands)</th> </tr> </thead> <tbody> <tr><td>Candid International Technology SL</td><td>4,430,021.16</td></tr> <tr><td>La Quinta Hotel &amp; Towers GMBH</td><td>645,181.44</td></tr> <tr><td>Ronald Bey NV</td><td>405,773.15</td></tr> <tr><td>MARIE ZDROK SL</td><td>357,019.39</td></tr> <tr><td>Edward Burns GMBH</td><td>346,403.65</td></tr> <tr><td>Candid International Technology AB</td><td>343,965.96</td></tr> <tr><td>Greentree Enterprise CRL</td><td>332,116.53</td></tr> <tr><td>Peter Hoffman SL</td><td>325,772.69</td></tr> <tr><td>Computer Competence Center Coop</td><td>318,066.96</td></tr> <tr><td>JANE CASTILLO SL</td><td>308,390.86</td></tr> </tbody> </table> <p>💡 Candid International Technology SL has the highest Gross Margin. The total so far for Tue, Sep 1 is 2,765,379.14. The total for Wed, Jul 1 was 1,135,468.26, an increase of 115% (606,294.50) compared to Fri, May 1 (529,173.76). <a href="#">View more...</a></p>	Customer	Gross Margin (Thousands)	Candid International Technology SL	4,430,021.16	La Quinta Hotel & Towers GMBH	645,181.44	Ronald Bey NV	405,773.15	MARIE ZDROK SL	357,019.39	Edward Burns GMBH	346,403.65	Candid International Technology AB	343,965.96	Greentree Enterprise CRL	332,116.53	Peter Hoffman SL	325,772.69	Computer Competence Center Coop	318,066.96	JANE CASTILLO SL	308,390.86
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<p>19. If the data contains a time dimension a time series chart will be provided for the target.</p> <p>An automated forecast is added to this chart to show the likely future value based on previous data.</p> <p>Once you have analyzed the data move to the Key Influencers page.</p>	<p><b>Gross Margin over time</b> ⚡   ⚡   Forecast</p> <p>1M 3M 6M YTD 1Y All</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Gross Margin (Thousands)</th> </tr> </thead> <tbody> <tr><td>Jan 1, 2020</td><td>11,286,893.25</td></tr> <tr><td>Feb 1, 2020</td><td>12,067,057.44</td></tr> <tr><td>Mar 1, 2020</td><td>14,186,863.51</td></tr> <tr><td>Apr 1, 2020</td><td>9,505,151.4</td></tr> <tr><td>May 1, 2020</td><td>14,309,550.6</td></tr> <tr><td>Jun 1, 2020</td><td>9,133,743.64</td></tr> <tr><td>Jul 1, 2020</td><td>13,390,702.62</td></tr> <tr><td>Aug 1, 2020</td><td>15,578,861.71</td></tr> <tr><td>Sep 1, 2020</td><td>16,657,739.55</td></tr> <tr><td>Oct 1, 2020</td><td>14,081,875.6128,874.25</td></tr> </tbody> </table>	Date	Gross Margin (Thousands)	Jan 1, 2020	11,286,893.25	Feb 1, 2020	12,067,057.44	Mar 1, 2020	14,186,863.51	Apr 1, 2020	9,505,151.4	May 1, 2020	14,309,550.6	Jun 1, 2020	9,133,743.64	Jul 1, 2020	13,390,702.62	Aug 1, 2020	15,578,861.71	Sep 1, 2020	16,657,739.55	Oct 1, 2020	14,081,875.6128,874.25
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Explanation	Screenshot
<p>20. Smart Discovery uses SAP Analytics Cloud automated predictive technology to build a predictive model to predict the target. This model is used to drive Key Influencers, Unexpected Values and Simulation pages. The data set used to train this model was prepared automatically by Smart Discovery. In this case there is a record in the data for every customer. This record contains data at the customer level such as the aggregated Gross_Margin for that customer and any dimension values that are unique for that customer, an example in this data set is Customer Segment is the customer An Enterprise, Fortune 500 or SMB customer. The data preparation also generates some variables such as the number of distinct business sectors a customer is active in.</p>	<p>The screenshot displays three analytical visualizations:</p> <ul style="list-style-type: none"> <li><b>Key influencers of Gross Margin for Customer:</b> A horizontal bar chart showing the top 10 influencers. The x-axis represents influence score and the y-axis lists dimensions: No of Customer Meetings, No of Contacts, Customer Segment, Number of Sector, Contract Level, No of Employees, Length of Sales Cycle, Customer Status, Product Name, and Country. No of Customer Meetings has the highest influence.</li> <li><b>Distribution of Customer by Gross Margin and No of Customer Meetings:</b> A treemap visualization where each square represents a customer segment defined by its Gross Margin range (A-E) and the number of customer meetings (e.g., A [&lt;899.31k], 486). The size of the squares corresponds to the number of customers.</li> <li><b>Average Gross Margin for Customer by No of Customer Meetings:</b> A horizontal bar chart showing the average gross margin for each meeting count category. The categories are A [&lt;14.00], B [14.00...29.00], C [29.00...44.00], D [44.00...59.00], and E [&gt;59.00]. The average gross margin increases with the number of customer meetings.</li> </ul>

Explanation	Screenshot																						
<p>21. From the predictive model Smart Discovery identifies the other variables in the model that have an influence on the target in this case Gross Margin for Customer.</p> <p>Smart Discovery provides a Natural language explanation of the Key Influencers. As the quality of the underlying model is good in this case it is not included in the text.</p>	<p><b>Summary</b> The predictive algorithm driving Smart Discovery identified 10 columns as key influencers of <b>Gross Margin for Customer</b>. These key influencers are the dimensions or measures within ANA160_SalesData that impact <b>Gross Margin for Customer</b> the most. No of Customer Meetings has the highest influence, followed by No of Contacts.</p> <p>We aggregate all the relevant measures and dimensions to the level of the entity. For the dimensions that can have several values for one entity, we count the number of dimension members of each entity.</p>																						
<p>22. The Key Influencer chart shows the top ten influencers along with details of when the snapshot of the data used to build the model was taken. Smart Discovery analyses the data at a point in time and the Key Influencers, Unexpected Values and Simulation are based on this snapshot of the data. Other charts reflect the current state of the data. The quality indicator</p>	<p>We found 10 key influencers of <b>Gross Margin for Customer</b> and have highlighted the top 3:</p> <p>Nov 10, 2020 12:48   <input checked="" type="checkbox"/></p> <table border="1"> <thead> <tr> <th>Influencer</th> <th>Influence Score (approx.)</th> </tr> </thead> <tbody> <tr> <td>No of Customer Meetings</td> <td>100</td> </tr> <tr> <td>No of Contacts</td> <td>85</td> </tr> <tr> <td>Customer Segment</td> <td>75</td> </tr> <tr> <td>Number of Sector</td> <td>65</td> </tr> <tr> <td>Contract Level</td> <td>55</td> </tr> <tr> <td>No of Employees</td> <td>50</td> </tr> <tr> <td>Length of Sales Cycle</td> <td>45</td> </tr> <tr> <td>Customer Status</td> <td>40</td> </tr> <tr> <td>Product Name</td> <td>35</td> </tr> <tr> <td>Country</td> <td>30</td> </tr> </tbody> </table>	Influencer	Influence Score (approx.)	No of Customer Meetings	100	No of Contacts	85	Customer Segment	75	Number of Sector	65	Contract Level	55	No of Employees	50	Length of Sales Cycle	45	Customer Status	40	Product Name	35	Country	30
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<p>23. The quality indicator provides information on the quality of the underlying model. If the model quality is low you should have less confidence in the influencers and may require more data.</p>	<p><b>Influencers of Gross Margin for Customer</b></p> <p>Nov 10, 2020 12:48   <input checked="" type="checkbox"/></p> <p><b>Analysis Quality - Good</b> The underlying machine learning model indicates that the analysis quality is good.</p> <table border="1"> <thead> <tr> <th>Influencer</th> <th>Influence Score (approx.)</th> </tr> </thead> <tbody> <tr> <td>No of Customer Meetings</td> <td>100</td> </tr> <tr> <td>No of Contacts</td> <td>85</td> </tr> <tr> <td>Customer Segment</td> <td>75</td> </tr> <tr> <td>Number of Sector</td> <td>65</td> </tr> <tr> <td>Contract Level</td> <td>55</td> </tr> <tr> <td>No of Employees</td> <td>50</td> </tr> <tr> <td>Length of Sales Cycle</td> <td>45</td> </tr> <tr> <td>Customer Status</td> <td>40</td> </tr> <tr> <td>Product Name</td> <td>35</td> </tr> <tr> <td>Country</td> <td>30</td> </tr> </tbody> </table>	Influencer	Influence Score (approx.)	No of Customer Meetings	100	No of Contacts	85	Customer Segment	75	Number of Sector	65	Contract Level	55	No of Employees	50	Length of Sales Cycle	45	Customer Status	40	Product Name	35	Country	30
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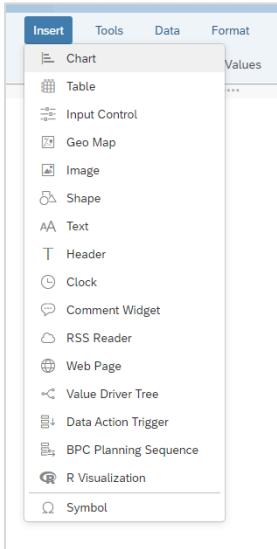
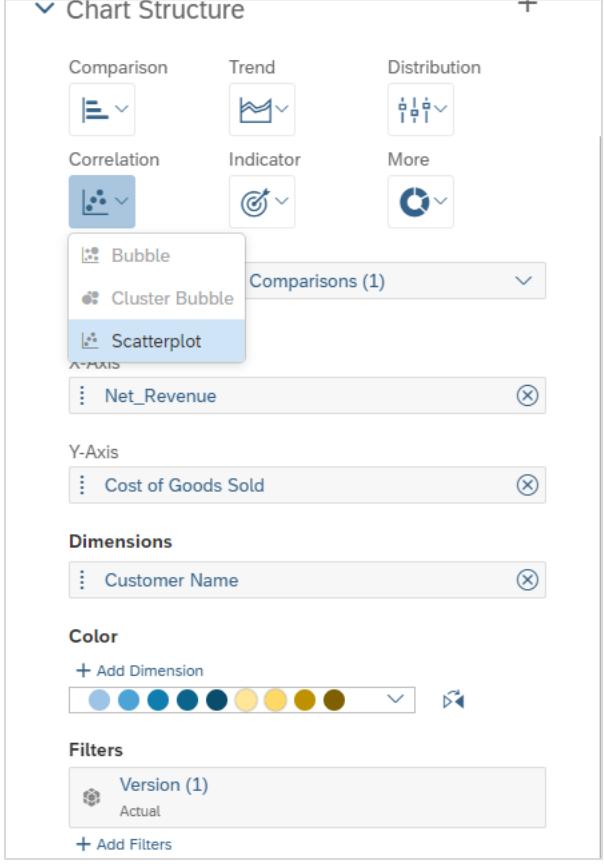
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<p>24. Charts are provided for the top three influencers. Scroll down to examine the impact of the top influencers or click on the relevant bar in the chart.</p>	<p>We found 10 key influencers of <b>Gross Margin for Customer</b> and have highlighted the top 3:</p> <p>Nov 10, 2020 12:48   <input checked="" type="checkbox"/></p>  <table border="1"> <thead> <tr> <th>Influencer</th> <th>Value</th> </tr> </thead> <tbody> <tr><td>No of Customer Meetings</td><td>Very High</td></tr> <tr><td>No of Contacts</td><td>High</td></tr> <tr><td>Customer Segment</td><td>Medium-High</td></tr> <tr><td>Number of Sector</td><td>Medium</td></tr> <tr><td>Contract Level</td><td>Medium-Low</td></tr> <tr><td>No of Employees</td><td>Low</td></tr> <tr><td>Length of Sales Cycle</td><td>Very Low</td></tr> <tr><td>Customer Status</td><td>Low</td></tr> <tr><td>Product Name</td><td>Very Low</td></tr> <tr><td>Country</td><td>Very Low</td></tr> </tbody> </table> <p>The machine learning model has discovered that No of Customer Meetings has a significant impact on Gross Margin for Customer.</p> <p> ⓘ <a href="#">How does it influence Gross Margin?</a></p> <p>We also found that this influencer is correlated with the following columns:</p> <p>Number of Sector</p>	Influencer	Value	No of Customer Meetings	Very High	No of Contacts	High	Customer Segment	Medium-High	Number of Sector	Medium	Contract Level	Medium-Low	No of Employees	Low	Length of Sales Cycle	Very Low	Customer Status	Low	Product Name	Very Low	Country	Very Low
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<p>25. For the remaining influencers clicking on the influencers will open the information in the side panel</p>	<p>We found 10 key influencers of <b>Gross Margin for Customer</b> and have highlighted the top 3:</p> <p>Nov 10, 2020 12:48   <input checked="" type="checkbox"/></p>  <table border="1"> <thead> <tr> <th>Influencer</th> <th>Value</th> </tr> </thead> <tbody> <tr><td>No of Customer Meetings</td><td>Very High</td></tr> <tr><td>No of Contacts</td><td>High</td></tr> <tr><td>Customer Segment</td><td>Medium-High</td></tr> <tr><td>Number of Sector</td><td>Medium</td></tr> <tr><td>Contract Level</td><td>Medium-Low</td></tr> <tr><td>No of Employees</td><td>Low</td></tr> <tr><td>Length of Sales Cycle</td><td>Very Low</td></tr> <tr><td>Customer Status</td><td>Low</td></tr> <tr><td>Product Name</td><td>Very Low</td></tr> <tr><td>Country</td><td>Very Low</td></tr> </tbody> </table> <p>The machine learning model has discovered that Product Name has a significant impact on Gross Margin for Customer.</p> <p> ⓘ <a href="#">How does it influence Gross Margin?</a></p> <p>We also found that this influencer is correlated with the following columns:</p> <p>Product Category</p>	Influencer	Value	No of Customer Meetings	Very High	No of Contacts	High	Customer Segment	Medium-High	Number of Sector	Medium	Contract Level	Medium-Low	No of Employees	Low	Length of Sales Cycle	Very Low	Customer Status	Low	Product Name	Very Low	Country	Very Low
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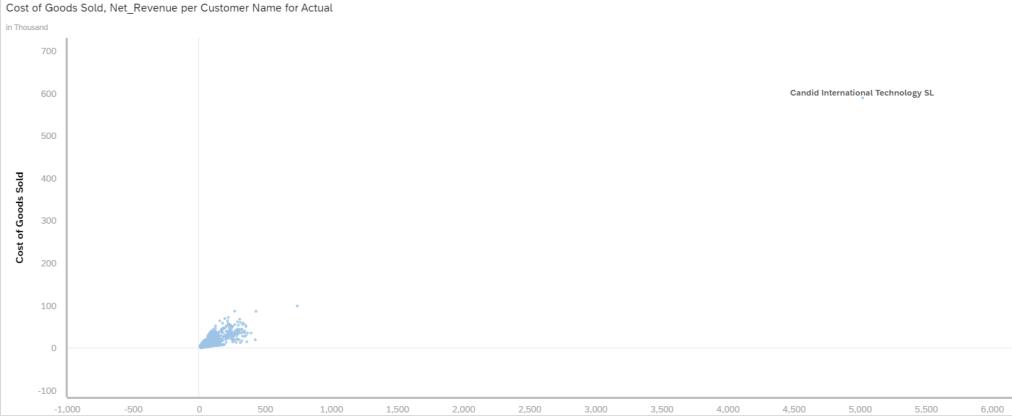
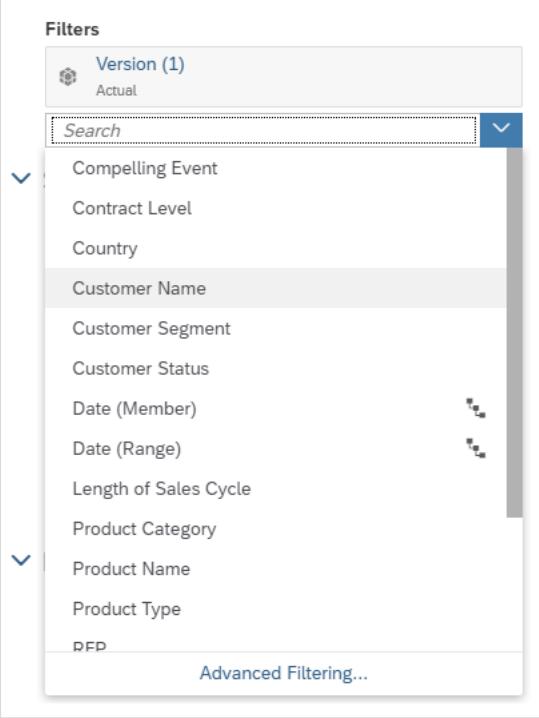
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<p>26. The relationship can be viewed in the side panel or added to the story.</p> <p><b>Note:</b> the story must be in edit mode to alter the content.</p> <p>Browse the influencers to see how they influence Gross Margin for customer.</p> <p>Once you are ready click on the <i>Unexpected Values</i> page.</p>	 <p>The screenshot shows a Smart Insights interface with a title 'How Product Name influences Gross Margin for Customer'. Below it is a section titled 'Average Gross Margin for Customer by Product Name' containing a bar chart. The chart lists various product names and their average gross margins. A tooltip for the 'Database' product name shows its value as 66,575.30. At the bottom right of the chart area are 'Add to page' and 'Done' buttons.</p> <table border="1"> <thead> <tr> <th>Product Name</th> <th>Average Gross Margin</th> </tr> </thead> <tbody> <tr> <td>Analytics</td> <td>61,253.93</td> </tr> <tr> <td>Application Server</td> <td>59,115.84</td> </tr> <tr> <td>CRM</td> <td>59,219.89</td> </tr> <tr> <td>Database</td> <td>66,575.30</td> </tr> <tr> <td>ERP</td> <td>58,401.37</td> </tr> <tr> <td>Identity Server</td> <td>78,710.32</td> </tr> <tr> <td>Portal</td> <td>65,551.98</td> </tr> <tr> <td>Security</td> <td>59,503.43</td> </tr> <tr> <td>Web Server</td> <td>58,405.78</td> </tr> </tbody> </table>	Product Name	Average Gross Margin	Analytics	61,253.93	Application Server	59,115.84	CRM	59,219.89	Database	66,575.30	ERP	58,401.37	Identity Server	78,710.32	Portal	65,551.98	Security	59,503.43	Web Server	58,405.78
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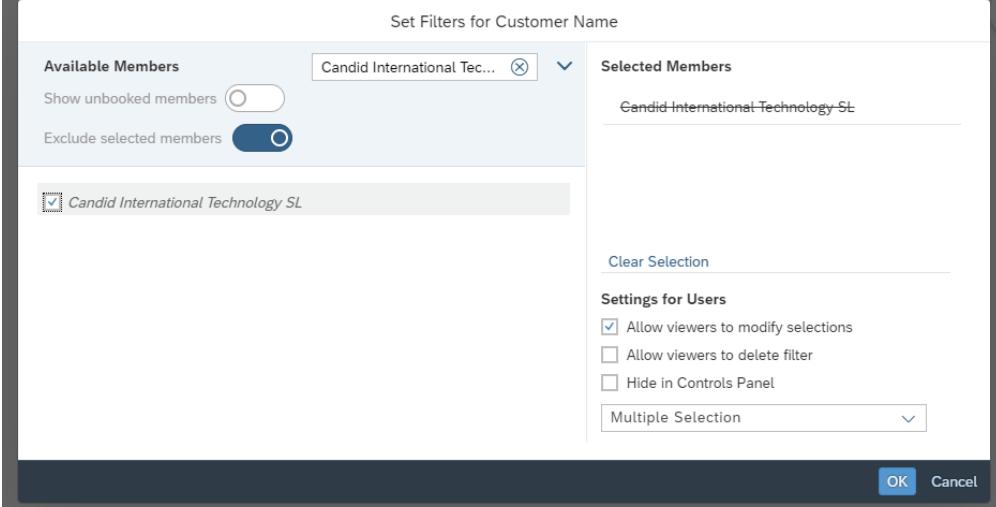
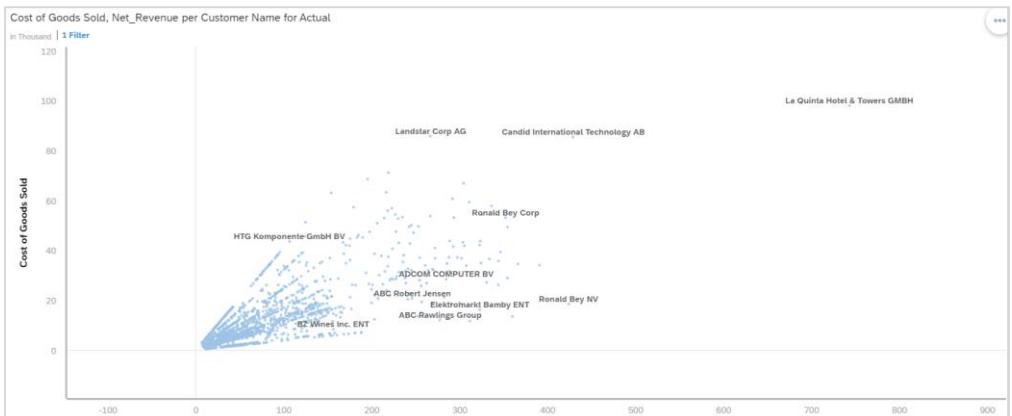
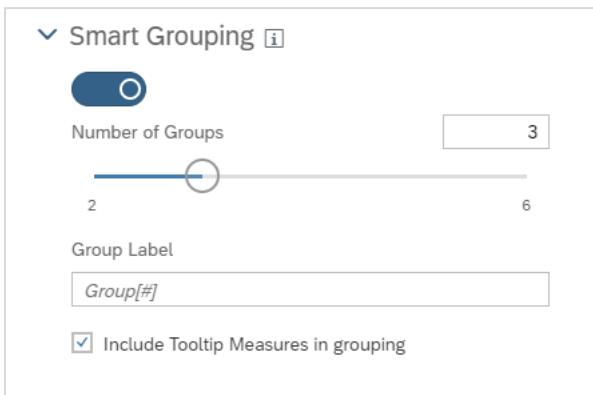
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<p>27. Smart Discovery trained a predictive model to predict Gross Margin for each customer. the unexpected values are customer where the value predicted by the model and the actual value in the data differ significantly. The value of Gross Margin for these customers is different from that predicted by the behavior of the other customers. These customers may be interesting as they may reveal special cases that require investigation or may show issues with the underlying quality.</p> <p><i>Select individual customers to highlight them in the charts below.</i></p> <p><i>Move on to the simulation page once you are ready</i></p>	<p>Unexpected values in Gross Margin for Customer</p> <p>We found 25 Customer which were unexpected. Nov 10, 2020 12:48   [G]</p> <table border="1"> <thead> <tr> <th>Gross Margin Actual</th> <th>Gross Margin Expected</th> <th>Gross Margin Difference</th> <th>Gross Margin % Difference</th> <th>No of Customer Meetings</th> <th>No of Contacts</th> <th>Customer Segment</th> <th>Number of Sector</th> <th>Contract Level</th> <th>No of Employees</th> <th>Length of Sales Cycle</th> <th>Cust</th> </tr> </thead> <tbody> <tr><td>1</td><td>4,430,021</td><td>211,699</td><td>4,218,322</td><td>1993 %</td><td>52.00</td><td>376.00</td><td>Enterprise</td><td>2</td><td>C-Level</td><td>1,208.00</td><td>2 Years</td><td>Pm</td></tr> <tr><td>2</td><td>645,181</td><td>225,876</td><td>419,305</td><td>186 %</td><td>58.00</td><td>376.00</td><td>Fortune500</td><td>2</td><td>C-Level</td><td>76,860.00</td><td>1 Year</td><td>Cu</td></tr> <tr><td>3</td><td>405,773</td><td>145,610</td><td>260,163</td><td>179 %</td><td>52.00</td><td>92.00</td><td>Fortune500</td><td>2</td><td>C-Level</td><td>1,044.00</td><td>1 Year</td><td>Cu</td></tr> <tr><td>4</td><td>357,019</td><td>103,414</td><td>253,805</td><td>245 %</td><td>40.00</td><td>76.00</td><td>Fortune500</td><td>2</td><td>C-Level</td><td>468.00</td><td>1 Year</td><td>Cu</td></tr> <tr><td>5</td><td>281,193</td><td>82,148</td><td>199,045</td><td>242 %</td><td>14.00</td><td>168.00</td><td>Fortune500</td><td>2</td><td>C-Level</td><td>20,592.00</td><td>18 Months</td><td>Pm</td></tr> <tr><td>6</td><td>263,345</td><td>74,188</td><td>189,156</td><td>255 %</td><td>34.00</td><td>122.00</td><td>SMB</td><td>2</td><td>Individual Contr...</td><td>58,680.00</td><td>2 Years</td><td>Pm</td></tr> <tr><td>7</td><td>241,072</td><td>53,058</td><td>188,014</td><td>354 %</td><td>20.00</td><td>88.00</td><td>Enterprise</td><td>2</td><td>Individual Contr...</td><td>11,232.00</td><td>1 Month</td><td>Pm</td></tr> <tr><td>8</td><td>238,937</td><td>51,155</td><td>187,782</td><td>367 %</td><td>18.00</td><td>138.00</td><td>SMB</td><td>2</td><td>Manager Level</td><td>648.00</td><td>1 Month</td><td>Pm</td></tr> <tr><td>9</td><td>256,286</td><td>69,620</td><td>186,666</td><td>268 %</td><td>16.00</td><td>120.00</td><td>SMB</td><td>2</td><td>Manager Level</td><td>1,144.00</td><td>18 Months</td><td>Pm</td></tr> <tr><td>10</td><td>213,555</td><td>35,647</td><td>177,909</td><td>499 %</td><td>26.00</td><td>134.00</td><td>SMB</td><td>2</td><td>Manager Level</td><td>12,888.00</td><td>18 Months</td><td>Pm</td></tr> <tr><td>11</td><td>227,245</td><td>56,465</td><td>170,780</td><td>302 %</td><td>32.00</td><td>136.00</td><td>SMB</td><td>2</td><td>Manager Level</td><td>19,944.00</td><td>6 Months</td><td>Pm</td></tr> <tr><td>12</td><td>256,757</td><td>92,101</td><td>164,856</td><td>179 %</td><td>10.00</td><td>218.00</td><td>Enterprise</td><td>2</td><td>Manager Level</td><td>1,128.00</td><td>1 Year</td><td>Pm</td></tr> <tr><td>13</td><td>226,577</td><td>64,742</td><td>161,934</td><td>250 %</td><td>18.00</td><td>138.00</td><td>Enterprise</td><td>2</td><td>Manager Level</td><td>11,592.00</td><td>1 Year</td><td>Pm</td></tr> </tbody> </table>	Gross Margin Actual	Gross Margin Expected	Gross Margin Difference	Gross Margin % Difference	No of Customer Meetings	No of Contacts	Customer Segment	Number of Sector	Contract Level	No of Employees	Length of Sales Cycle	Cust	1	4,430,021	211,699	4,218,322	1993 %	52.00	376.00	Enterprise	2	C-Level	1,208.00	2 Years	Pm	2	645,181	225,876	419,305	186 %	58.00	376.00	Fortune500	2	C-Level	76,860.00	1 Year	Cu	3	405,773	145,610	260,163	179 %	52.00	92.00	Fortune500	2	C-Level	1,044.00	1 Year	Cu	4	357,019	103,414	253,805	245 %	40.00	76.00	Fortune500	2	C-Level	468.00	1 Year	Cu	5	281,193	82,148	199,045	242 %	14.00	168.00	Fortune500	2	C-Level	20,592.00	18 Months	Pm	6	263,345	74,188	189,156	255 %	34.00	122.00	SMB	2	Individual Contr...	58,680.00	2 Years	Pm	7	241,072	53,058	188,014	354 %	20.00	88.00	Enterprise	2	Individual Contr...	11,232.00	1 Month	Pm	8	238,937	51,155	187,782	367 %	18.00	138.00	SMB	2	Manager Level	648.00	1 Month	Pm	9	256,286	69,620	186,666	268 %	16.00	120.00	SMB	2	Manager Level	1,144.00	18 Months	Pm	10	213,555	35,647	177,909	499 %	26.00	134.00	SMB	2	Manager Level	12,888.00	18 Months	Pm	11	227,245	56,465	170,780	302 %	32.00	136.00	SMB	2	Manager Level	19,944.00	6 Months	Pm	12	256,757	92,101	164,856	179 %	10.00	218.00	Enterprise	2	Manager Level	1,128.00	1 Year	Pm	13	226,577	64,742	161,934	250 %	18.00	138.00	Enterprise	2	Manager Level	11,592.00	1 Year	Pm
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9	256,286	69,620	186,666	268 %	16.00	120.00	SMB	2	Manager Level	1,144.00	18 Months	Pm																																																																																																																																																																										
10	213,555	35,647	177,909	499 %	26.00	134.00	SMB	2	Manager Level	12,888.00	18 Months	Pm																																																																																																																																																																										
11	227,245	56,465	170,780	302 %	32.00	136.00	SMB	2	Manager Level	19,944.00	6 Months	Pm																																																																																																																																																																										
12	256,757	92,101	164,856	179 %	10.00	218.00	Enterprise	2	Manager Level	1,128.00	1 Year	Pm																																																																																																																																																																										
13	226,577	64,742	161,934	250 %	18.00	138.00	Enterprise	2	Manager Level	11,592.00	1 Year	Pm																																																																																																																																																																										
<p>28. The simulation page provides a type of what if analysis. Values can be provided for each of the Key Influencers and the predictive model is used to predict the value of the target. The page is prepopulated with some default values.</p>	<p>How my influencers have an impact on Gross Margin for Customer</p> <p>Expected Gross Margin for Customer Nov 10, 2020 12:48   [G]</p> <p><b>162,527</b></p> <p>Expected Gross Margin for Customer is 162,527, positively influenced mainly by Number of Sector [2.5] + No of Customer Meetings [58].</p> <p>Change the influencer values below, and choose 'Simulate' to see the impact on Gross Margin for Customer:</p> <table border="1"> <thead> <tr> <th>Influencers</th> <th>Impact</th> <th>Influencers</th> <th>Impact</th> </tr> </thead> <tbody> <tr> <td>No of Customer Meetings</td> <td>58.00</td> <td>Strongly Positive</td> <td>Positive</td> </tr> <tr> <td>Customer Segment</td> <td>Enterprise</td> <td>Neutral</td> <td>Strongly Positive</td> </tr> <tr> <td>Contact Level</td> <td>C-Level</td> <td>Weakly Positive</td> <td>Weakly Positive</td> </tr> <tr> <td>Length of Sales Cycle</td> <td>1 Month</td> <td>Weakly Negative</td> <td>Weakly Positive</td> </tr> <tr> <td>Product Name</td> <td>Analytics</td> <td>Neutral</td> <td>Neutral</td> </tr> <tr> <td></td> <td>Simulate</td> <td></td> <td></td> </tr> </tbody> </table> <p><b>Summary</b> Use the Simulation view to discover how changing the values of your key influencers could have an impact on the value of your Gross Margin for Customer. Simply specify a new value for one or more of your key influencers, and choose the 'Simulate' button.</p>	Influencers	Impact	Influencers	Impact	No of Customer Meetings	58.00	Strongly Positive	Positive	Customer Segment	Enterprise	Neutral	Strongly Positive	Contact Level	C-Level	Weakly Positive	Weakly Positive	Length of Sales Cycle	1 Month	Weakly Negative	Weakly Positive	Product Name	Analytics	Neutral	Neutral		Simulate																																																																																																																																																											
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Explanation	Screenshot																								
29. The natural language summary provides a clear explanation of the purpose of the page.	<p><b>Summary</b> Use the Simulation view to discover how changing the values of your key influencers could have an impact on the value of your <b>Gross Margin for Customer</b>. Simply specify a new value for one or more of your key influencers, and choose the 'Simulate' button.</p>																								
30. The expected Gross Margin based on the default values is provided with an explanation of the values which influence it.	<p><b>Expected Gross Margin for Customer</b> Nov 10, 2020 12:48   <input checked="" type="checkbox"/></p> <h1>162,527</h1> <p>Expected Gross Margin for Customer is 162,527, positively influenced mainly by <b>Number of Sector [2.5]</b> + <b>No of Customer Meetings [58]</b>.</p>																								
31. The influencers are listed with an indication of the impact the selected values have on the expected value.	<p>Change the influencer values below, and choose 'Simulate' to see the impact on <b>Gross Margin for Customer</b>:</p> <table border="1" data-bbox="470 1010 1482 1221"> <thead> <tr> <th>Influencers</th> <th>Impact</th> <th>Influencers</th> <th>Impact</th> </tr> </thead> <tbody> <tr> <td>No of Customer Meetings: 58.00</td> <td>Strongly Positive</td> <td>No of Contacts: 204.00</td> <td>Positive</td> </tr> <tr> <td>Customer Segment: Enterprise</td> <td>Neutral</td> <td>Number of Sector: 3</td> <td>Strongly Positive</td> </tr> <tr> <td>Contract Level: C-Level</td> <td>Weakly Positive</td> <td>No of Employees: 52,594.00</td> <td>Weakly Positive</td> </tr> <tr> <td>Length of Sales Cycle: 1 Month</td> <td>Weakly Negative</td> <td>Customer Status: Current Customer</td> <td>Weakly Positive</td> </tr> <tr> <td>Product Name: Analytics</td> <td>Neutral</td> <td>Country: Brazil</td> <td>Neutral</td> </tr> </tbody> </table>	Influencers	Impact	Influencers	Impact	No of Customer Meetings: 58.00	Strongly Positive	No of Contacts: 204.00	Positive	Customer Segment: Enterprise	Neutral	Number of Sector: 3	Strongly Positive	Contract Level: C-Level	Weakly Positive	No of Employees: 52,594.00	Weakly Positive	Length of Sales Cycle: 1 Month	Weakly Negative	Customer Status: Current Customer	Weakly Positive	Product Name: Analytics	Neutral	Country: Brazil	Neutral
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32. As we can see from the expected value a customer with these properties has an expected Gross Margin of 162,527. This customer is an Enterprise customer we can see what the expected value would be if the customer were a Fortune 500 customer. <i>Change the value for Customer Segment to Fortune500 Click Simulate</i>	<p><b>Influencers</b></p> <table border="1" data-bbox="470 1333 965 1734"> <tbody> <tr> <td>No of Customer Meetings: 58.00</td> <td>Customer Segment: Enterprise</td> </tr> <tr> <td>Contract Level</td> <td>Enterprise</td> </tr> <tr> <td>Length of Sales Cycle</td> <td>Fortune500</td> </tr> <tr> <td>Product Name: Analytics</td> <td>SMB</td> </tr> </tbody> </table> <p><b>Simulate</b></p>	No of Customer Meetings: 58.00	Customer Segment: Enterprise	Contract Level	Enterprise	Length of Sales Cycle	Fortune500	Product Name: Analytics	SMB																
No of Customer Meetings: 58.00	Customer Segment: Enterprise																								
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Explanation	Screenshot
<p>33. The expected value of Gross Margin is updated to reflect the change.</p> <p>Continue to modify the values of the influencers to understand how different values impact the expected value.</p> <p>The simulation page is useful both to get a better understanding of the impact different values have on total and also to predict the outcome for different scenarios.</p>	<p>Expected Gross Margin for Customer Nov 10, 2020 12:48   <input checked="" type="checkbox"/></p> <p>175,879 +8%</p> <p>Expected Gross Margin for Customer is 175,879, positively influenced mainly by Number of Sector [2.5] + No of Customer Meetings [58].</p>
<p>34. Another feature that an Analyst can add to a chart is clustering or Smart Grouping. To do this Add a chart to a new page of the story. They type of page is not important in this case but for consistency add a Responsive layout.</p>	

Explanation	Screenshot
<p>35. Insert a chart in the new page. Smart Grouping supports Bubble and ScatterPlot charts.</p>	
<p>36. Gross Margin is calculated as Net Revenue – Cost of Goods Sold. A scatterplot showing these measures for customers will show the correlation between the values. Add two measures to the chart – Net Revenue and Cost of Goods Sold Add one dimension customer name Set the chart type to scatterplot – under correlation</p>	

Explanation	Screenshot
<p>37. Increase the size of the chart to make it more readable</p>	
<p>38. There is one outlier company Candid International Technology SL. In order to make the chart more readable hide that customer.  <i>Add a filter on customer name in the designer</i></p>	

Explanation	Screenshot
<p>39. Search for <i>Candid International Technology SL</i></p> <p><i>Turn on Exclude Selected Members</i></p> <p><i>Select the checkbox Candid International Technology SL</i></p>	
<p>40. The Chart should now look like this.</p>	
<p>41. Smart Grouping will visually assign the customer to groups. in the designer Panel</p> <p><i>Turn on the Radio Button for Smart Grouping</i></p> <p><i>Set the number of Groups to 3</i></p>	

Explanation	Screenshot
<p>42. The groups can be interacted with visually and assist with segmenting the data.</p> <p>The Group IDs are not written back to the data so cannot be used for further processing.</p>	

## EXERCISE 3 – PREDICTIVE PLANNING

### Introduction

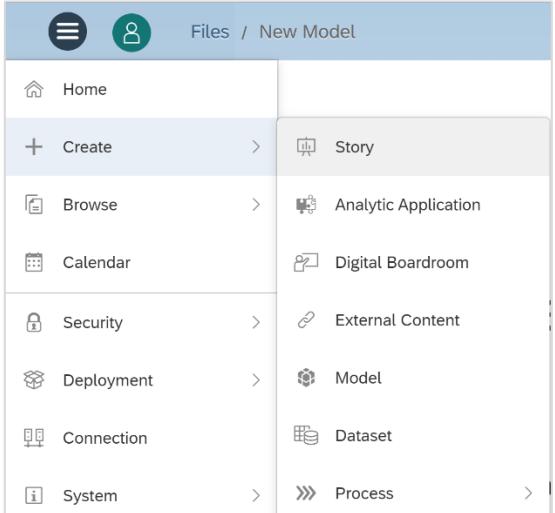
This exercise provides an end-to-end view of how SAP Analytics Cloud (SAC) Planning and Predictive features can work together. It showcases how SAP Analytics Cloud Smart Predict leverages SAC Planning Models and allows forecasting of future values that can be used as baseline for the planning process. This hands-on script walks the user through a series of steps in which forecasted data from Smart Predict is seamlessly copied into an existing Planning model.

### Machine Learning Helps Planners Take Confident Decisions with SAP Analytics Cloud predictive planning, powered by Smart Predict

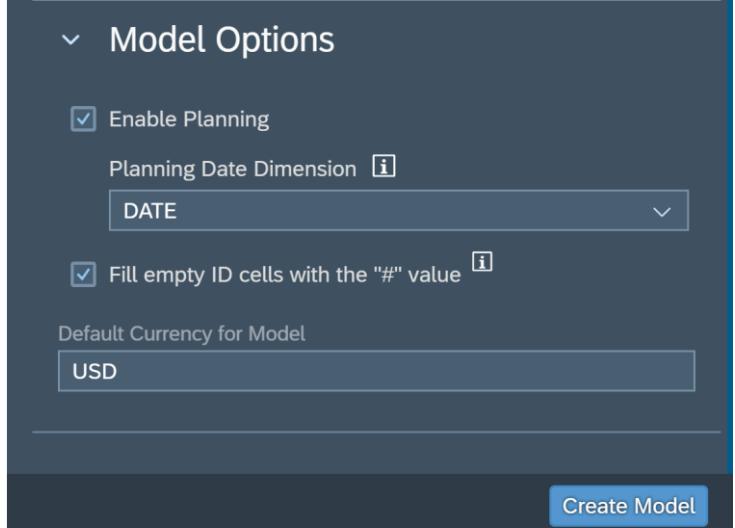
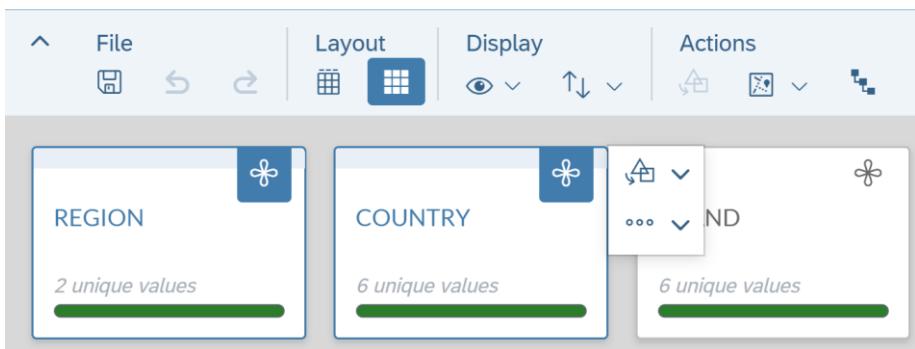


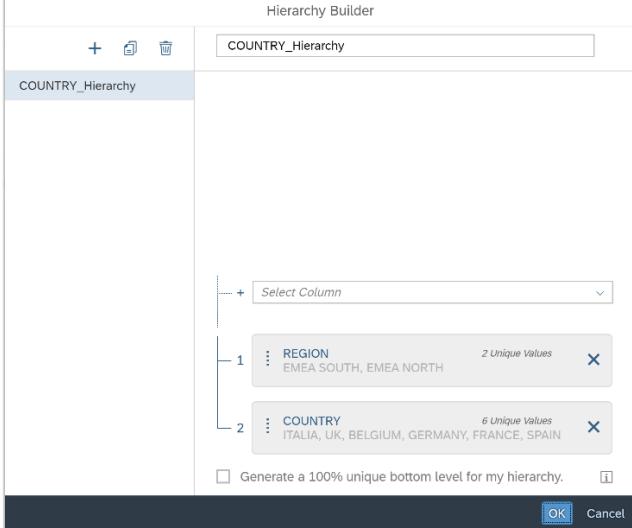
- Data driven planning
  - Predictive forecasting **automates the creation of baseline** planning models
  - Planners then **supplement these forecasts based on business acumen**
  - Planners **monitor plan attainment based on continuously updated predictions**
  - SAP Analytics Cloud predictive planning supports **for both top down and bottom up planning processes** – enabling the planner to automatically building forecasts at the correct level of detail

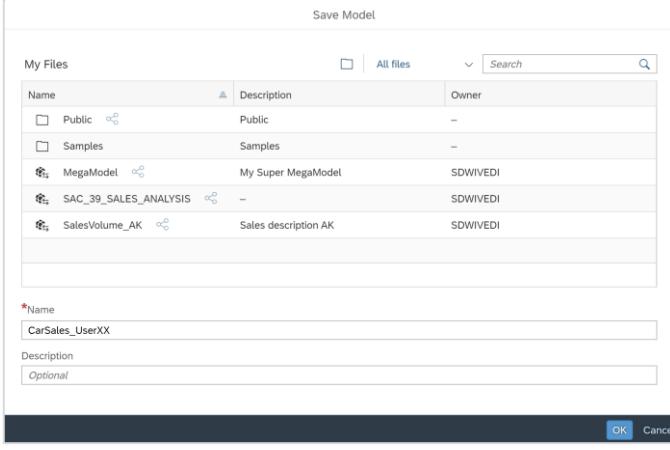
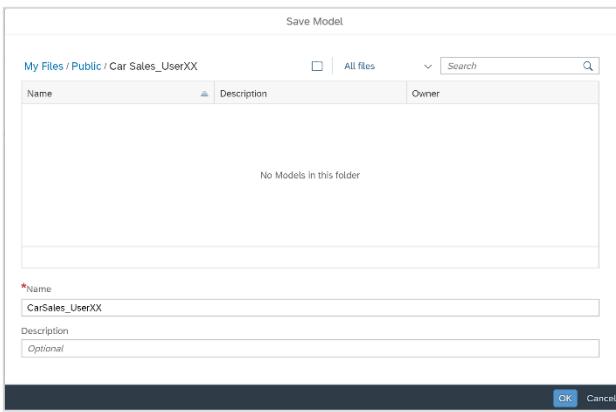
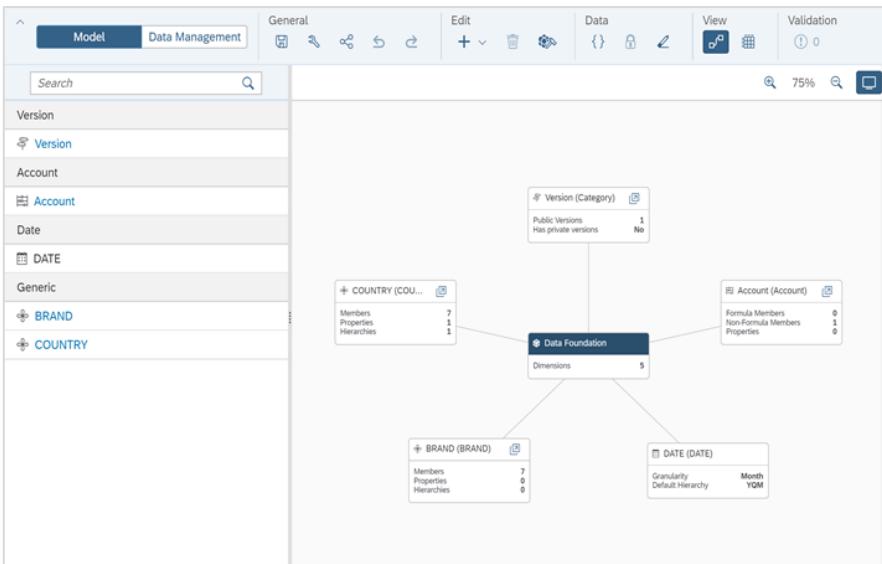
Explanation	Screenshot																																																																																																																								
1. Download																																																																																																																									
2. Inspect CSV data:  DATE: The posting period of car sales collected every month from 2015 to 2019. This will be our date variable.  SALES: The car sales for each posting period. This will be our target variable.  REGION: Each country is associated with one region (EMEA North or EMEA South). Region will become property of the Country.  COUNTRY, BRAND: Sales happen for 6 car brands in 6 countries, but not all brands are sold in all countries. These will be used for entity definition.	<table border="1" data-bbox="486 752 1417 1565"> <thead> <tr> <th data-bbox="486 752 519 794"></th><th data-bbox="519 752 698 794">A</th><th data-bbox="698 752 878 794">B</th><th data-bbox="878 752 1058 794">C</th><th data-bbox="1058 752 1237 794">D</th><th data-bbox="1237 752 1417 794">E</th></tr> <tr> <th data-bbox="486 794 519 836">1</th><th data-bbox="519 794 698 836">REGION</th><th data-bbox="698 794 878 836">COUNTRY</th><th data-bbox="878 794 1058 836">BRAND</th><th data-bbox="1058 794 1237 836">DATE</th><th data-bbox="1237 794 1417 836">SALES</th></tr> </thead> <tbody> <tr><td data-bbox="486 836 519 879">2</td><td data-bbox="519 836 698 879">EMEA SOUTH</td><td data-bbox="698 836 878 879">ITALIA</td><td data-bbox="878 836 1058 879">ALFA ROMEO</td><td data-bbox="1058 836 1237 879">2015-01</td><td data-bbox="1237 836 1417 879">11807</td></tr> <tr><td data-bbox="486 879 519 921">3</td><td data-bbox="519 879 698 921">EMEA SOUTH</td><td 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1417 1048">13881</td></tr> <tr><td data-bbox="486 1048 519 1090">7</td><td data-bbox="519 1048 698 1090">EMEA SOUTH</td><td data-bbox="698 1048 878 1090">ITALIA</td><td data-bbox="878 1048 1058 1090">ALFA ROMEO</td><td data-bbox="1058 1048 1237 1090">2015-06</td><td data-bbox="1237 1048 1417 1090">13971</td></tr> <tr><td data-bbox="486 1090 519 1132">8</td><td data-bbox="519 1090 698 1132">EMEA SOUTH</td><td data-bbox="698 1090 878 1132">ITALIA</td><td data-bbox="878 1090 1058 1132">ALFA ROMEO</td><td data-bbox="1058 1090 1237 1132">2015-07</td><td data-bbox="1237 1090 1417 1132">9215</td></tr> <tr><td data-bbox="486 1132 519 1174">9</td><td data-bbox="519 1132 698 1174">EMEA SOUTH</td><td data-bbox="698 1132 878 1174">ITALIA</td><td data-bbox="878 1132 1058 1174">ALFA ROMEO</td><td data-bbox="1058 1132 1237 1174">2015-08</td><td data-bbox="1237 1132 1417 1174">5648</td></tr> <tr><td data-bbox="486 1174 519 1217">10</td><td data-bbox="519 1174 698 1217">EMEA SOUTH</td><td 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ROMEO	2015-03	17870	5	EMEA SOUTH	ITALIA	ALFA ROMEO	2015-04	11307	6	EMEA SOUTH	ITALIA	ALFA ROMEO	2015-05	13881	7	EMEA SOUTH	ITALIA	ALFA ROMEO	2015-06	13971	8	EMEA SOUTH	ITALIA	ALFA ROMEO	2015-07	9215	9	EMEA SOUTH	ITALIA	ALFA ROMEO	2015-08	5648	10	EMEA SOUTH	ITALIA	ALFA ROMEO	2015-09	9338	11	EMEA SOUTH	ITALIA	ALFA ROMEO	2015-10	9138	12	EMEA SOUTH	ITALIA	ALFA ROMEO	2015-11	7893	13	EMEA SOUTH	ITALIA	ALFA ROMEO	2015-12	7283	14	EMEA SOUTH	ITALIA	ALFA ROMEO	2016-01	8915	15	EMEA SOUTH	ITALIA	ALFA ROMEO	2016-02	7309	16	EMEA SOUTH	ITALIA	ALFA ROMEO	2016-03	10735	17	EMEA SOUTH	ITALIA	ALFA ROMEO	2016-04	9666	18	EMEA SOUTH	ITALIA	ALFA ROMEO	2016-05	10159	19	EMEA SOUTH	ITALIA	ALFA ROMEO	2016-06	9587
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Explanation	Screenshot
3.	
<p>4. Upload the CSV file and create the planning model:</p> <p><i>Click the Main Menu icon</i></p> <p><i>Click Create and select Model</i></p>	 <p>The screenshot shows the SAP Fiori Launchpad. At the top, there are two circular icons: one with three horizontal lines and another with a person icon. To their right is the text "Files / New Model". Below this is a navigation bar with several items: "Home", "Create" (which is highlighted with a blue background), "Browse", "Calendar", "Security", "Deployment", "Connection", and "System". To the right of the navigation bar is a list of items under the "Create" category: "Story", "Analytic Application", "Digital Boardroom", "External Content", "Model", "Dataset", and "Process".</p>

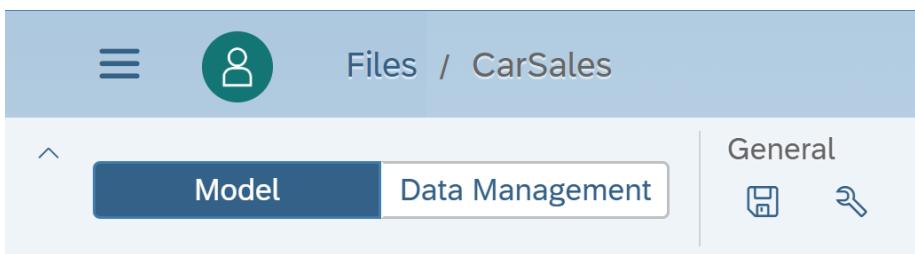
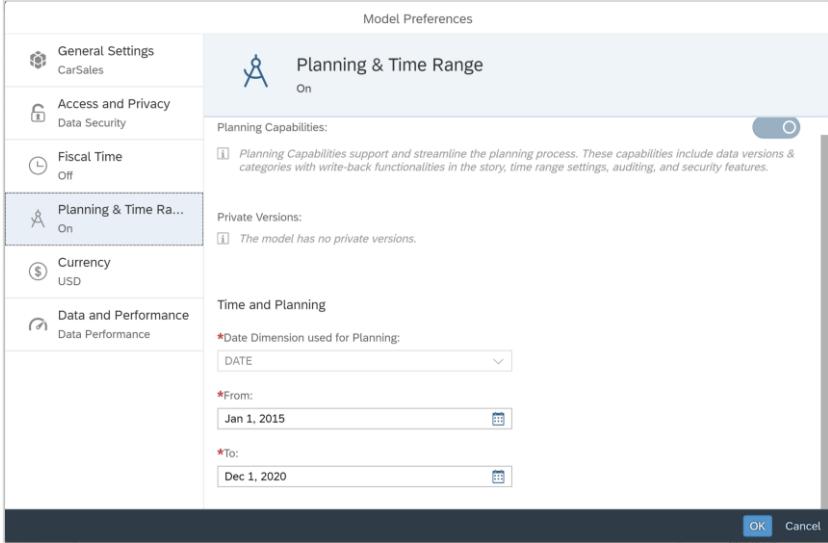
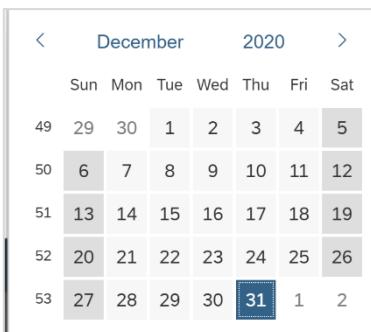
Explanation	Screenshot																																																
<p>3. Select Import a file from your computer</p>	<p>Choose how you'd like to start your model</p> <ul style="list-style-type: none"> <li>Start with a blank model</li> <li>Import a file from your computer</li> <li>Get data from a datasource</li> </ul>																																																
<p>4. On the pop-up menu Select Source File Locate the CSV file on your computer <b>Click Import</b></p>	<p>Import Data From File</p> <p>Select Source File car sales - monthly for 2015-2019.csv <span style="color: red;">X</span></p> <p><span style="color: orange;">⚠</span> Leave the browser tab open and don't refresh while the data loads. We'll let you know when it's done.</p> <p><input checked="" type="checkbox"/> Use first row as column headers</p> <p>CSV Delimiter</p> <p>Auto-detect <span style="border: 1px solid #ccc; padding: 2px;">▼</span></p> <p style="text-align: right;"><span style="background-color: #0072bc; color: white; padding: 5px 10px; border-radius: 5px;">Import</span> Cancel</p>																																																
<p>5. Ensure that data type is discovered correctly.</p> <p><b>Note:</b> Region, Country and Brand as Dimension</p> <p>Date as Date</p> <p>Sales as Measure</p>	<table border="1"> <thead> <tr> <th></th> <th>REGION</th> <th>COUNTRY</th> <th>BRAND</th> <th>DATE</th> <th>SALES</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>EMEA SOUTH</td> <td>ITALIA</td> <td>ALFA ROMEO</td> <td>2015-01</td> <td>11807</td> </tr> <tr> <td>3</td> <td>EMEA SOUTH</td> <td>ITALIA</td> <td>ALFA ROMEO</td> <td>2015-02</td> <td>9818</td> </tr> <tr> <td>4</td> <td>EMEA SOUTH</td> <td>ITALIA</td> <td>ALFA ROMEO</td> <td>2015-03</td> <td>17870</td> </tr> <tr> <td>5</td> <td>EMEA SOUTH</td> <td>ITALIA</td> <td>ALFA ROMEO</td> <td>2015-04</td> <td>11307</td> </tr> <tr> <td>6</td> <td>EMEA SOUTH</td> <td>ITALIA</td> <td>ALFA ROMEO</td> <td>2015-05</td> <td>13881</td> </tr> <tr> <td>7</td> <td>EMEA SOUTH</td> <td>ITALIA</td> <td>ALFA ROMEO</td> <td>2015-06</td> <td>13971</td> </tr> <tr> <td>8</td> <td>EMEA SOUTH</td> <td>ITALIA</td> <td>ALFA ROMEO</td> <td>2015-07</td> <td>9215</td> </tr> </tbody> </table>		REGION	COUNTRY	BRAND	DATE	SALES	2	EMEA SOUTH	ITALIA	ALFA ROMEO	2015-01	11807	3	EMEA SOUTH	ITALIA	ALFA ROMEO	2015-02	9818	4	EMEA SOUTH	ITALIA	ALFA ROMEO	2015-03	17870	5	EMEA SOUTH	ITALIA	ALFA ROMEO	2015-04	11307	6	EMEA SOUTH	ITALIA	ALFA ROMEO	2015-05	13881	7	EMEA SOUTH	ITALIA	ALFA ROMEO	2015-06	13971	8	EMEA SOUTH	ITALIA	ALFA ROMEO	2015-07	9215
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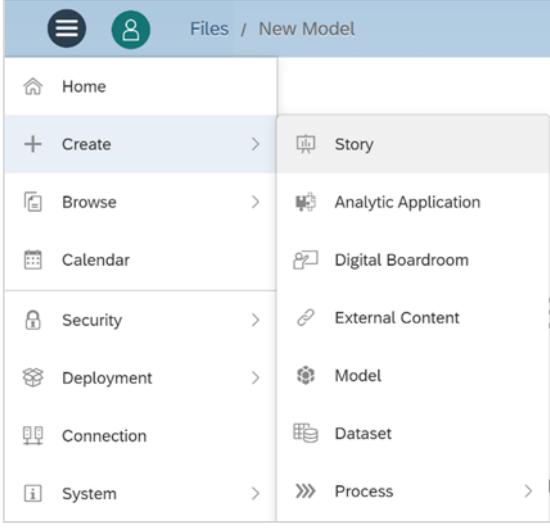
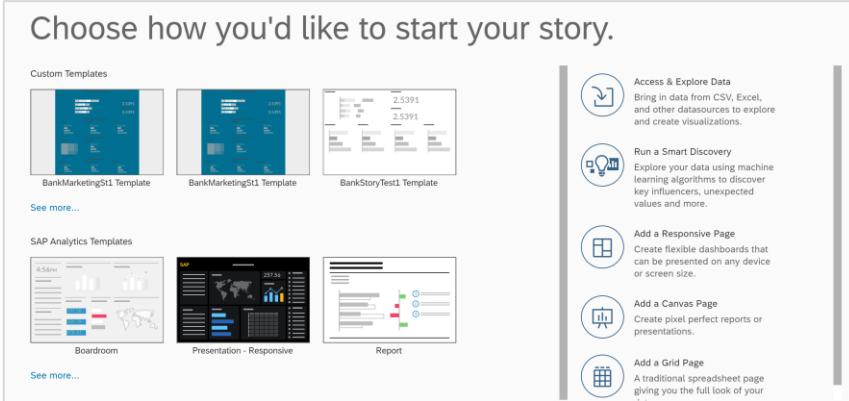
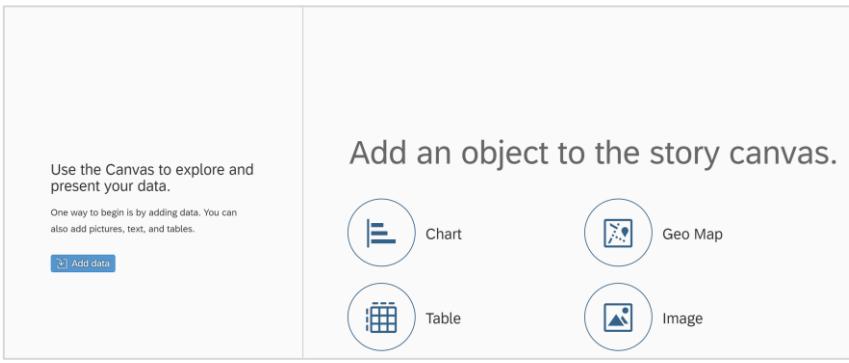
Explanation	Screenshot
<p>6. Under Model Options</p> <p><b>Very important:</b> Check the <b>Enable Planning</b> check box</p>	
<p>7. Make Region a property of Country:</p> <p><b>Click Card View</b></p> <p><b>Use the Ctrl key to select Region and Country</b></p> <p><b>Note:</b> Card View is a different way of looking at large volumes of data, it allows us to see a summarized view of our dataset. We use Card View here as we want to look at our columns rather than at individual entries in the model.</p>	

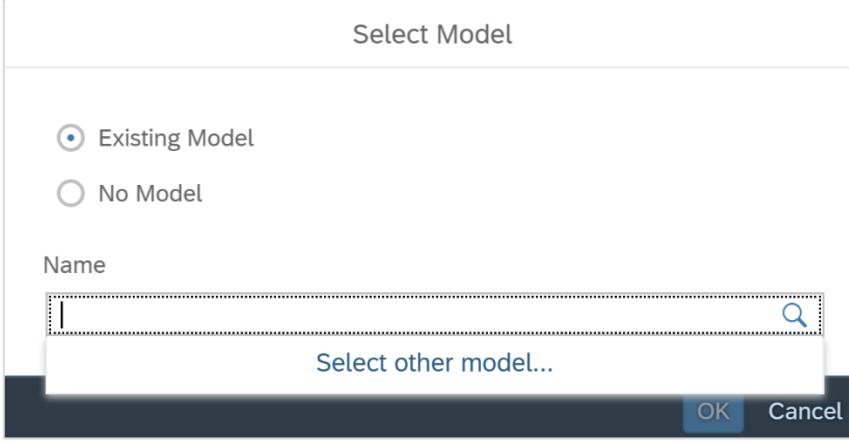
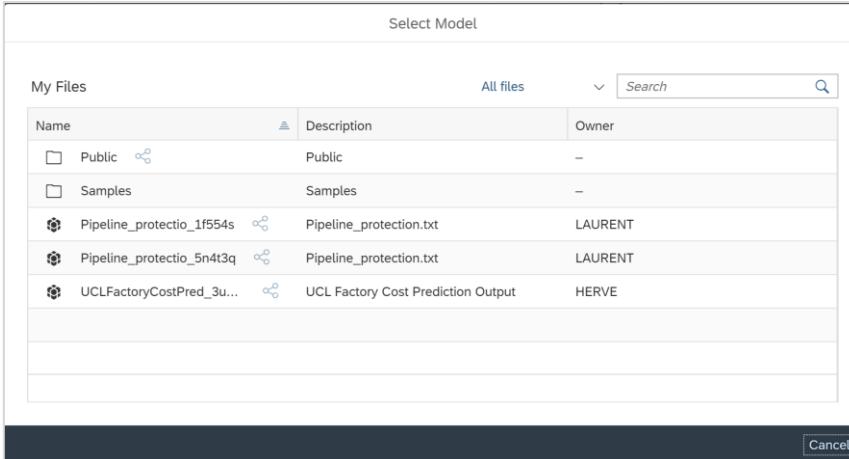
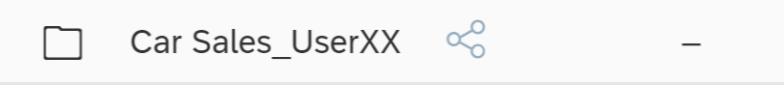
Explanation	Screenshot
<p>8. The system automatically creates a level-based hierarchy based on our selections</p> <p><i>Click <b>OK</b> to proceed</i></p>	
<p>9. <i>Click <b>OK</b> to build the hierarchy</i></p>	<p><b>i</b> Confirm Modeling Changes</p> <p>Your hierarchy name(s) will not be editable after the hierarchy has been created.</p> <p>"REGION" will become a property of "COUNTRY".</p> <p><b>OK</b> <b>Cancel</b></p>
<p>10. <i>Click <b>Create Model</b></i></p>	<p>Default Currency for Model</p> <p>USD</p> <p><b>Create Model</b></p>
<p>11. On the pop-up menu click <b>Create</b></p>	<p><b>Create Model</b></p> <p>Have you finished mapping and editing your data? When you click the "Create" button, your model will start to be created.</p> <p><b>Create</b> <b>Cancel</b></p>

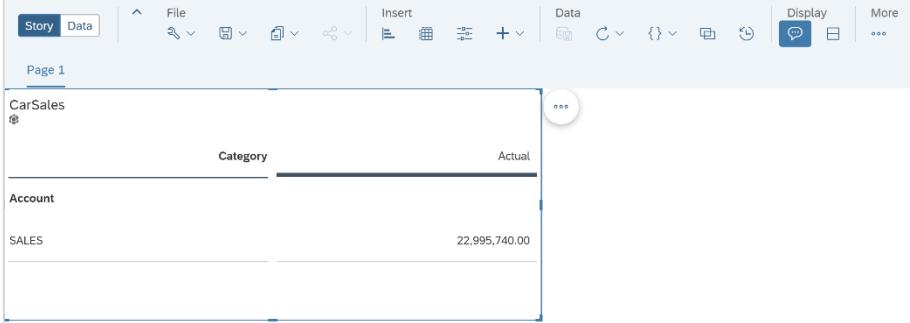
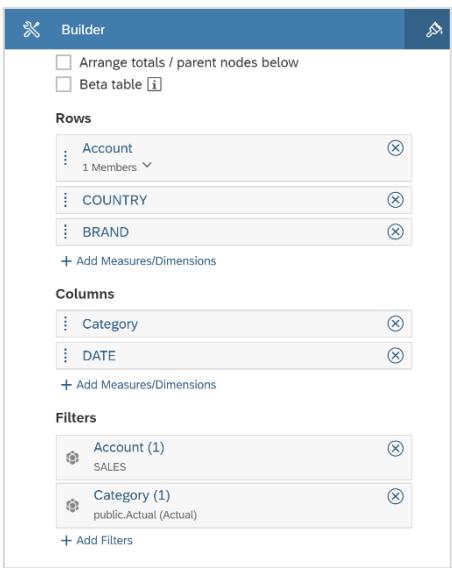
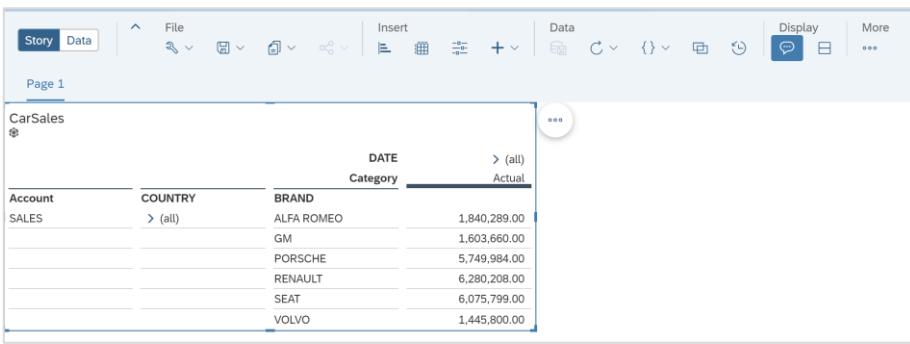
Explanation	Screenshot
<p>12. Name your model Carsales_UserXX</p> <p><b>Note:</b> UserXX to be replaced with your FirstName LastName</p> <p><i>Click Public and then Click the folder icon</i></p> <p>This creates a new folder and saves your model</p>	
<p>13. Open your folder and click OK</p>	
<p><b>14. Inspect Model:</b> Once the model has been created, we can inspect how many versions and dimensions it has</p> <p><i>Click Model to inspect it</i></p> <p>There are currently <b>4 dimensions</b> due to the level-based hierarchy we have created and <b>one public version</b></p> <p>The system has also created a default hierarchy for Date: <b>YQM</b></p>	

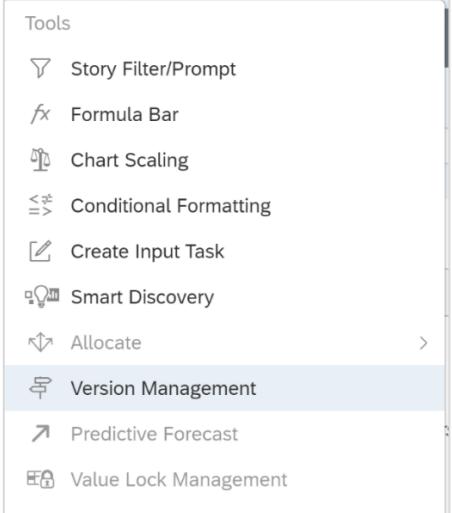
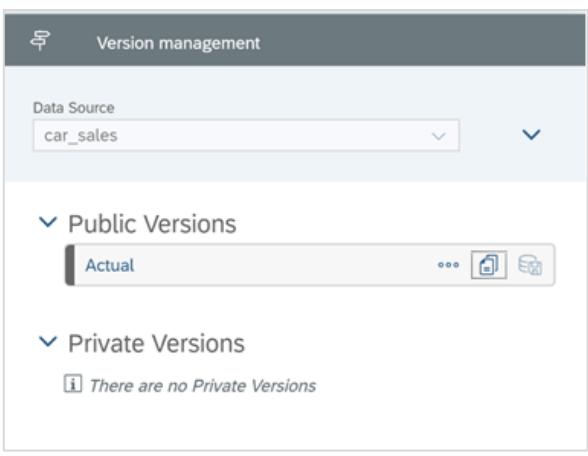
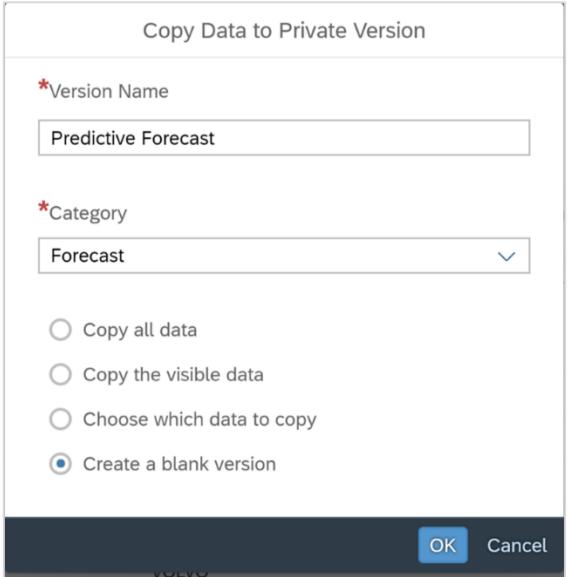
Explanation	Screenshot																		
15. Click <b>Version</b> to inspect members	<p>Version (Category)</p> <p>Public Versions 1 Has private versions Yes</p>																		
16. There is currently one version, <b>Actuals</b>  Click the back arrow	<table border="1"> <thead> <tr> <th data-bbox="502 509 524 536">&lt;</th> <th data-bbox="1161 509 1237 536">Version</th> </tr> </thead> <tbody> <tr> <td data-bbox="502 551 617 578">Description</td> <td data-bbox="1161 551 1291 578">Category</td> </tr> <tr> <td data-bbox="502 593 568 621">Actual</td> <td data-bbox="1205 593 1270 621">Actuals</td> </tr> </tbody> </table>	<	Version	Description	Category	Actual	Actuals												
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17. Click <b>Country</b> to inspect members	<p>COUNTRY (COUNTRIES)</p> <p>Members 7 Properties 1 Hierarchies 1</p>																		
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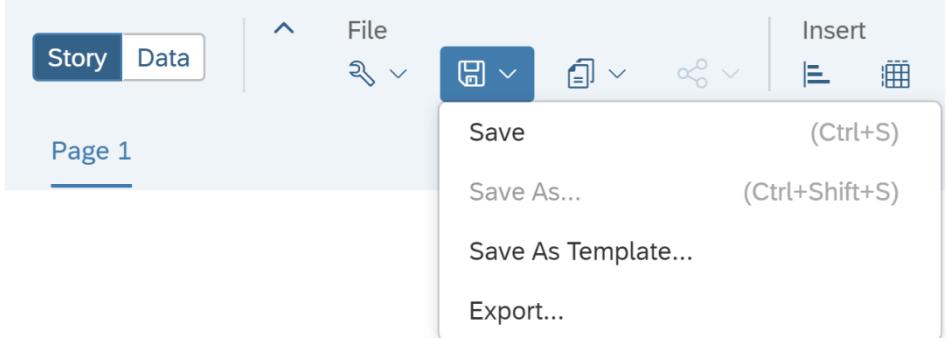
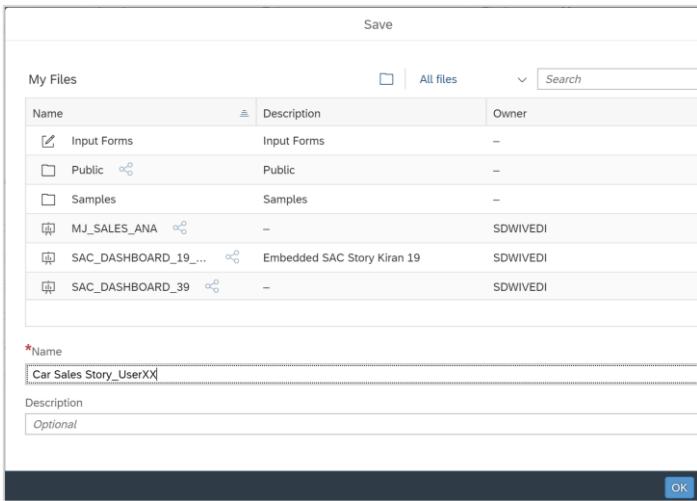
Explanation	Screenshot
<p>21. <b>Update the Planning model settings</b></p> <p><i>Navigate to the toolbar menu.</i></p> <p><i>click the <b>Model Preferences</b> icon to inspect which time period has been prepared</i></p>	
<p>22. On the pop-up menu, select <b>Planning &amp; Time Range</b></p> <p><i>Click the <b>Date</b> icon</i></p> 	
<p>23. As we want to make predictions for 2020, we need to extend the planning period until <b>Dec 31,2020</b></p> <p><i>Click <b>OK</b></i></p> <p><i>Save changes</i></p> 	

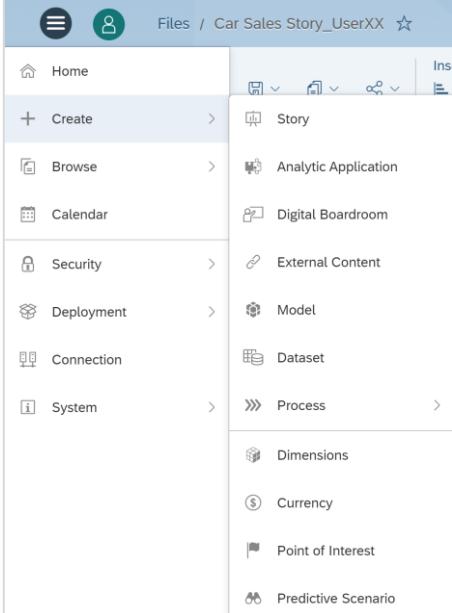
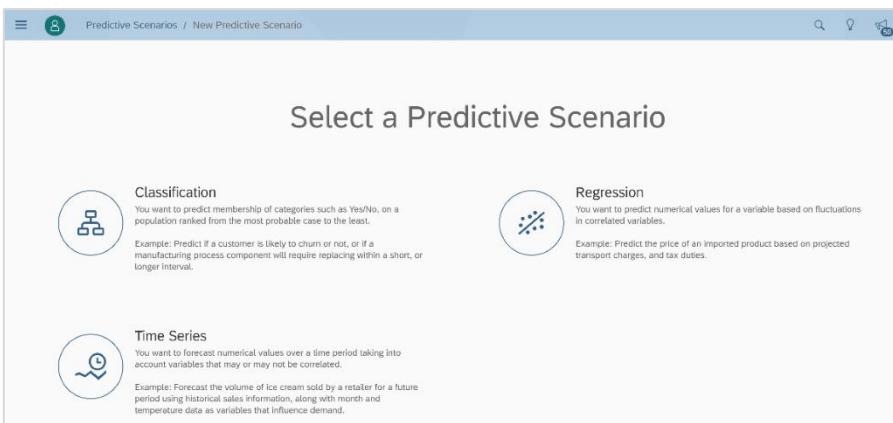
Explanation	Screenshot
<p><b>24. Create story and private planning version.</b></p> <p><b>Click the Main Menu icon</b></p> <p><b>Click <b>Create</b> and select <b>Story</b></b></p>	 <p>The screenshot shows the SAP Analytics Cloud interface. In the top left, there's a main menu icon (three horizontal lines) and a user profile icon. To its right, the text "Files / New Model". Below this, a vertical navigation bar on the left lists several options: Home, Create, Browse, Calendar, Security, Deployment, Connection, and System. Each option has a small icon next to it. To the right of the navigation bar, a list of items is displayed under the heading "Story": Story, Analytic Application, Digital Boardroom, External Content, Model, Dataset, and Process. The "Story" item is highlighted with a light gray background.</p>
<p><b>25. Click <b>Add a Canvas Page</b></b></p>	 <p>The screenshot shows a page titled "Choose how you'd like to start your story." It features two sections of templates. The first section, "Custom Templates," contains three items: "BankMarketingSt1 Template," "BankMarketingSt1 Template," and "BankStoryTest1 Template." The second section, "SAP Analytics Templates," contains three items: "Boardroom," "Presentation - Responsive," and "Report." To the right of these sections is a vertical sidebar with five items, each with an icon and a brief description:</p> <ul style="list-style-type: none"> <li><b>Access &amp; Explore Data</b>: Bring in data from CSV, Excel, and other datasources to explore and create visualizations.</li> <li><b>Run a Smart Discovery</b>: Explore your data using machine learning algorithms to discover key influencers, unexpected values and more.</li> <li><b>Add a Responsive Page</b>: Create flexible dashboards that can be presented on any device or screen size.</li> <li><b>Add a Canvas Page</b>: Create pixel perfect reports or presentations.</li> <li><b>Add a Grid Page</b>: A traditional spreadsheet page giving you the full look of your</li> </ul>
<p><b>26. Click <b>Table</b></b></p>	 <p>The screenshot shows a page with two main sections. On the left, a box contains text: "Use the Canvas to explore and present your data. One way to begin is by adding data. You can also add pictures, text, and tables." Below this is a blue button labeled "Add data". On the right, the text "Add an object to the story canvas." is displayed above four circular icons, each with a label:</p> <ul style="list-style-type: none"> <li><b>Chart</b>: Represented by a bar chart icon.</li> <li><b>Geo Map</b>: Represented by a map icon.</li> <li><b>Table</b>: Represented by a grid icon.</li> <li><b>Image</b>: Represented by a camera icon.</li> </ul>

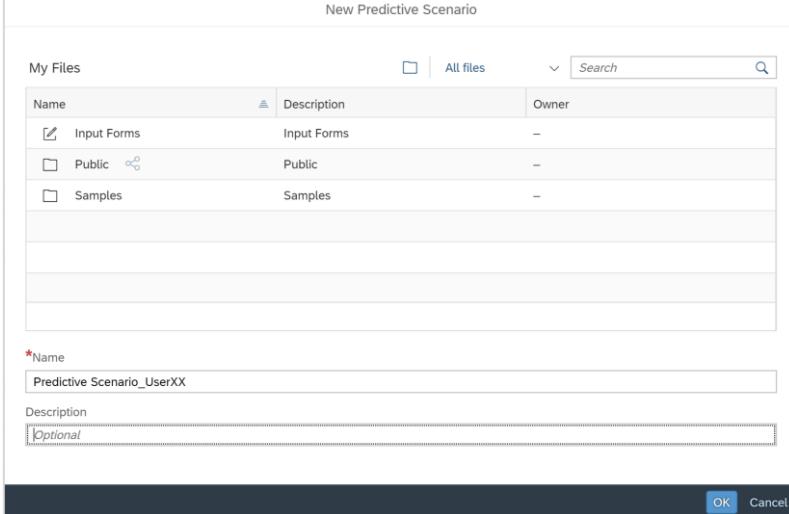
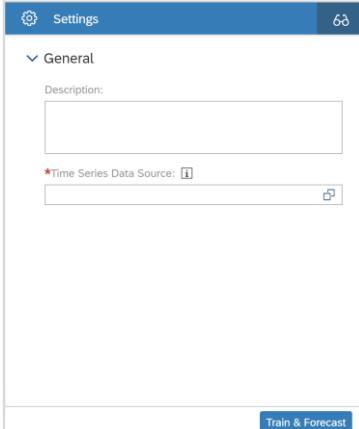
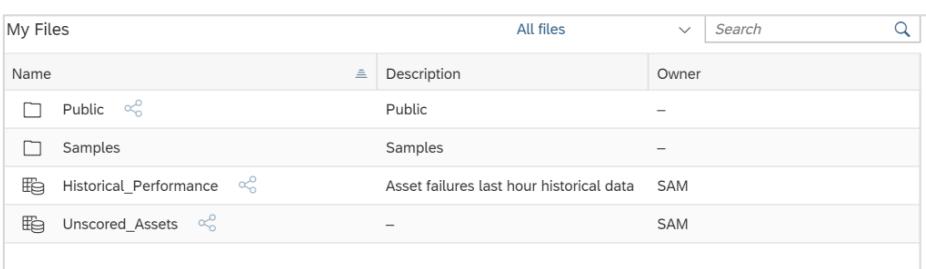
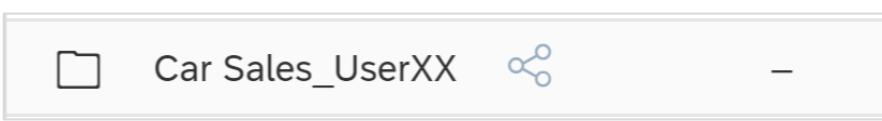
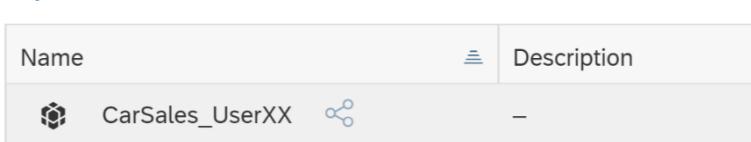
Explanation	Screenshot
<p><b>27. Click Select an Existing Model</b></p> <p>Click the arrow to expand the menu and Select other model</p>	
<p><b>28. Click Public</b></p>	
<p><b>29. Navigate to the folder where your model is saved</b></p>	
<p><b>30. Select your Carsales model</b></p>	

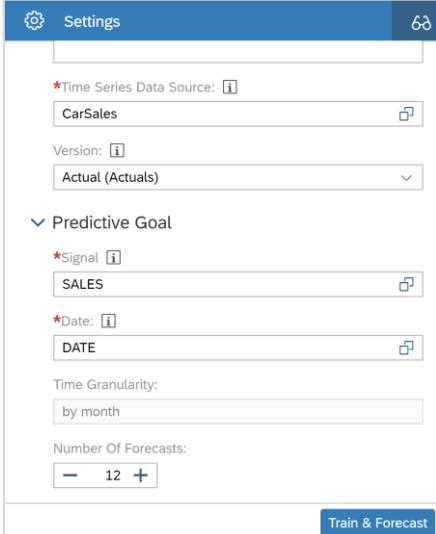
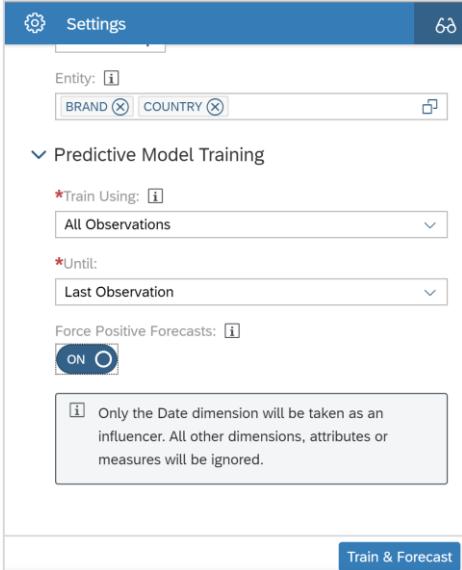
Explanation	Screenshot
<p>31. Click on the <b>table</b> that has been created</p>	
<p>32. Under Rows, click <b>Add Measures/Dimensions</b></p> <p><b>Check Country</b></p> <p><b>Check Brand</b></p> <p>Under Columns, click <b>Add Measures/Dimensions</b></p> <p><b>Click Date</b></p>	
<p>33. Create a private version:</p> <p><b>Click on the table</b></p> <p>Navigate to the toolbar menu, click <b>More</b> to expand the menu</p>	

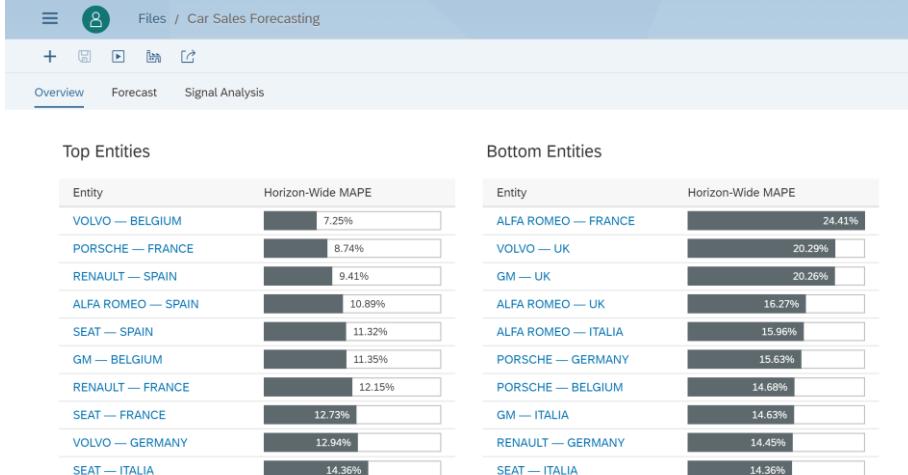
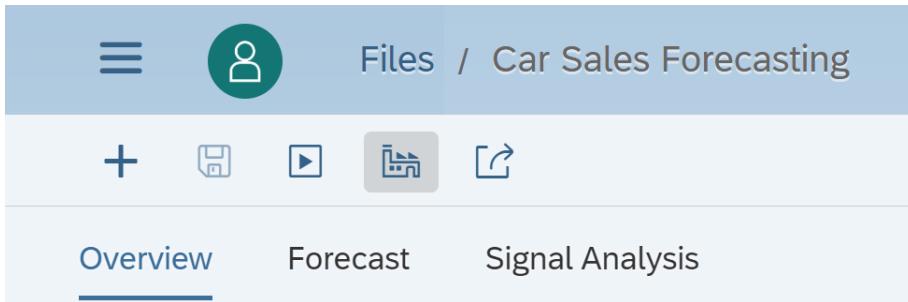
Explanation	Screenshot
34. Click <b>Version Management</b>	 <p>The screenshot shows a vertical list of tools under a 'Tools' heading. The 'Version Management' option is highlighted with a blue selection bar at the bottom of the list.</p> <ul style="list-style-type: none"> <li>Story Filter/Prompt</li> <li>Formula Bar</li> <li>Chart Scaling</li> <li>Conditional Formatting</li> <li>Create Input Task</li> <li>Smart Discovery</li> <li>Allocate</li> <li><b>Version Management</b></li> <li>Predictive Forecast</li> <li>Value Lock Management</li> </ul>
35. Under <b>Public Versions</b>  Click the <b>Copy</b> icon for <b>Actual</b> to create a private version	 <p>The screenshot shows the 'Version management' screen. It has a 'Data Source' dropdown set to 'car_sales'. Below it, there are two sections: 'Public Versions' which contains an 'Actual' entry with a copy icon, and 'Private Versions' which displays a message: 'There are no Private Versions'.</p>
36. Name the <b>Version Predictive Forecast_UserXX</b>  <b>Note:</b> UserXX to be replaced with your <b>FirstNameLastName</b>  Set <b>Category</b> to <b>Forecast</b>  Select <b>Create a blank version</b>  Click <b>OK</b>	 <p>The screenshot shows the 'Copy Data to Private Version' dialog box. It has fields for 'Version Name' (set to 'Predictive Forecast') and 'Category' (set to 'Forecast'). Below these are three radio button options: 'Copy all data', 'Copy the visible data', 'Choose which data to copy', and 'Create a blank version'. The 'Create a blank version' option is selected. At the bottom are 'OK' and 'Cancel' buttons.</p>

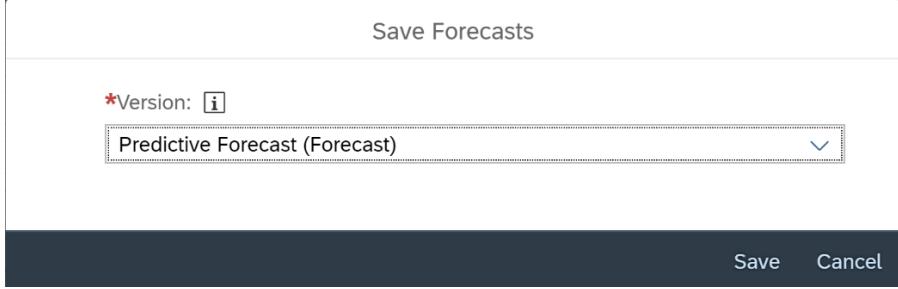
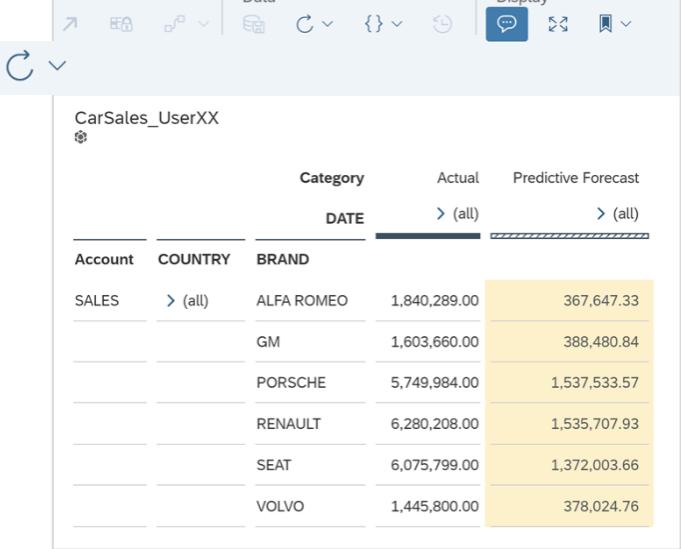
Explanation	Screenshot
<p>37. On the toolbar menu, click the Save icon and select Save</p>	
<p><b>38. Name the Story</b>  <b>Car Sales</b>  <b>Story_UserXX</b></p> <p><b>Note:</b> UserXX to be replaced with your <b>FirstName LastName</b></p> <p><b>Click Public</b></p> <p><b>Select the folder</b> you have previously created</p> <p><b>Click OK</b></p> <p><b>Note:</b> Duplicate the browser tab before moving to the next steps (Select the tab in Chrome, then right click / <i>Duplicate</i>). It will be easier to examine the Predictive Scenario and the Predictive results on the Story table.</p>	

Explanation	Screenshot
<p><b>39. Create Predictive Scenario:</b></p> <p><b>Click the Main Menu icon</b></p> <p><b>Click <b>Create</b> and select <b>Predictive Scenario</b>.</b></p>	
<p><b>40. From available Predictive Scenarios select <b>Time Series</b></b></p> <p><b>Note:</b> Smart Predict uses SAP machine learning algorithms to explore relationships in your dataset and build a formula – a Predictive Scenario – to predict future events or trends. Currently, three types of predictive scenarios are available in Smart Predict: Classification, Regression, and Times Series Predictive Scenarios.</p>	

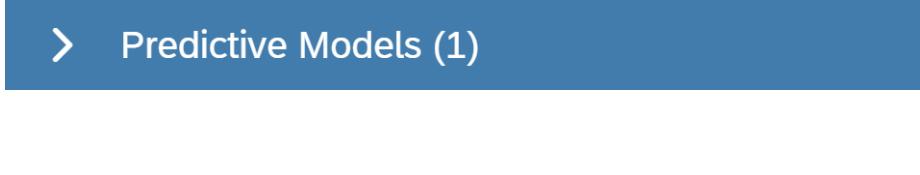
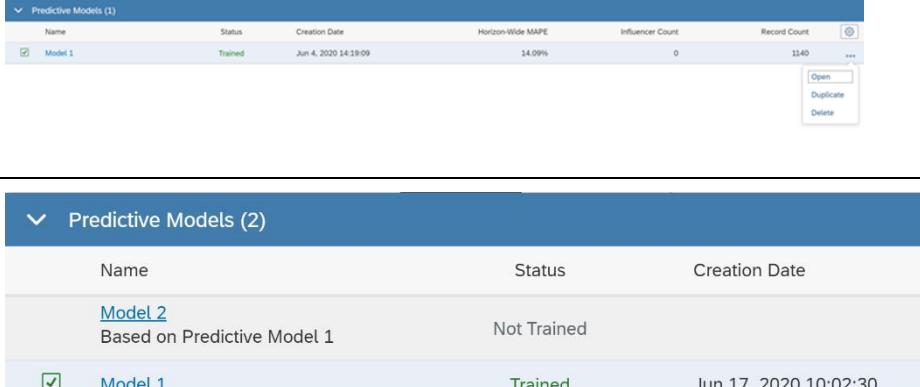
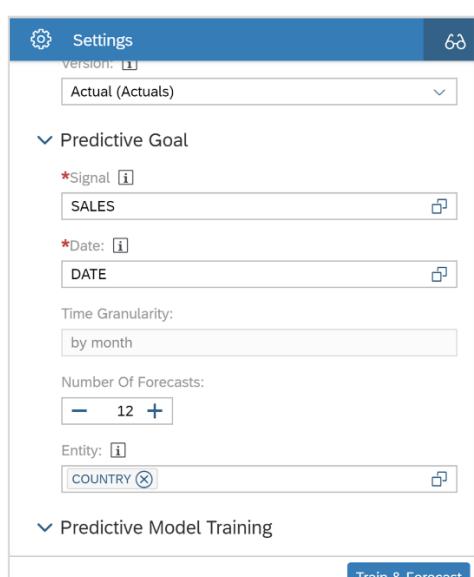
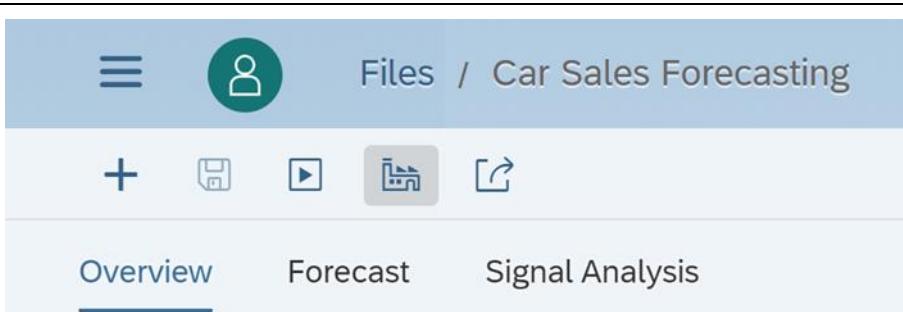
Explanation	Screenshot
<p><b>41. Name the Predictive Scenario, <b>Predictive Scenario_UserName</b></b></p> <p><b>Note:</b> UserXX to be replaced with your <b>FirstName LastName</b></p> <p><b>Click Public</b></p> <p><b>Select your folder</b></p> <p><b>Click OK</b></p>	
<p><b>42. On the Settings menu, click the <b>Time Series Data Source</b> tab</b></p>	
<p><b>43. Click <b>Public</b></b></p>	
<p><b>44. Navigate to the folder where your planning model is saved</b></p>	
<p><b>45. Select the <b>CarsSales_UserName</b> model</b></p>	<p>My Files / Public / Car Sales_UserName</p> 

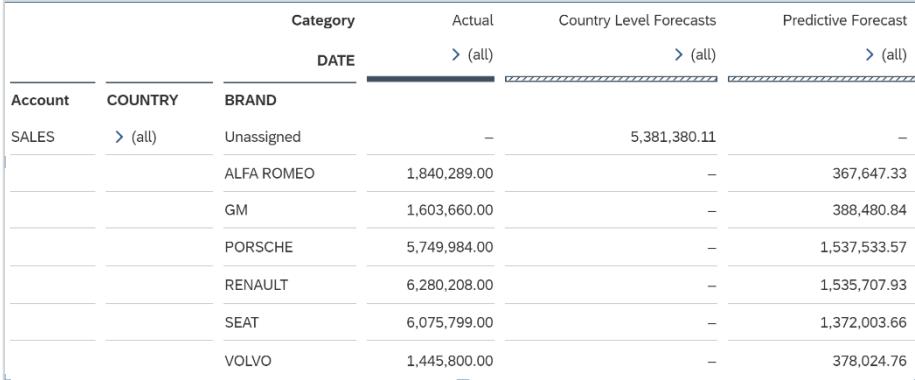
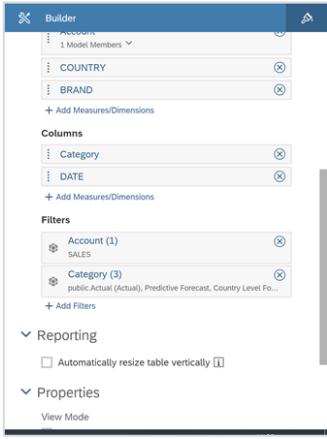
Explanation	Screenshot
<p>46. On the Settings Panel under <b>Predictive Goal and Signal Variable</b>, select <b>SALES</b></p> <p>Under <b>Date</b> select <b>DATE</b> Set Number of Forecasts to 12</p>	
<p>47. Click <b>Entity</b></p> <p>Click <b>BRAND</b> and <b>COUNTRY</b></p> <p>Set <b>Force Positive Forecasts</b> to <b>ON</b></p> <p><b>Note:</b> This is because sales shall always be positive. This information helps the predictive engine to ensure this requirement is indeed met.</p> <p>Click <b>Train &amp; Forecast</b></p> <p><b>Note:</b> Will take roughly 2 minutes to generate the forecast results.</p>	

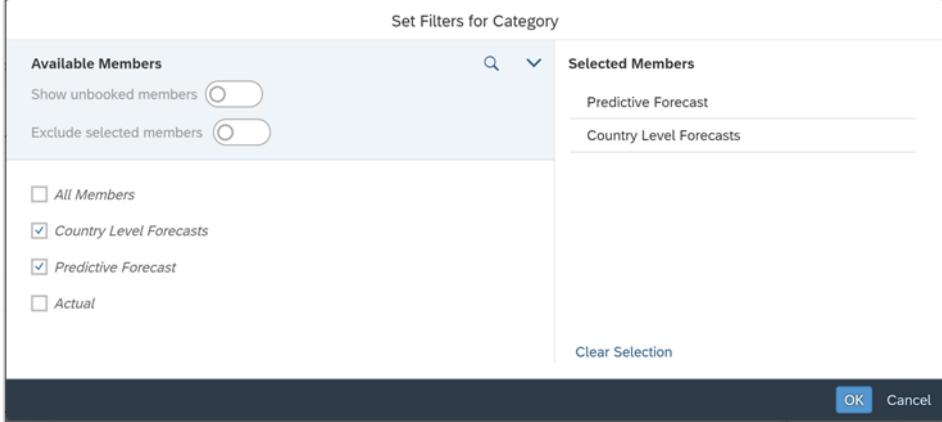
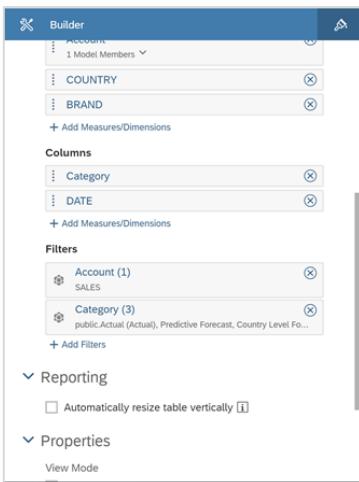
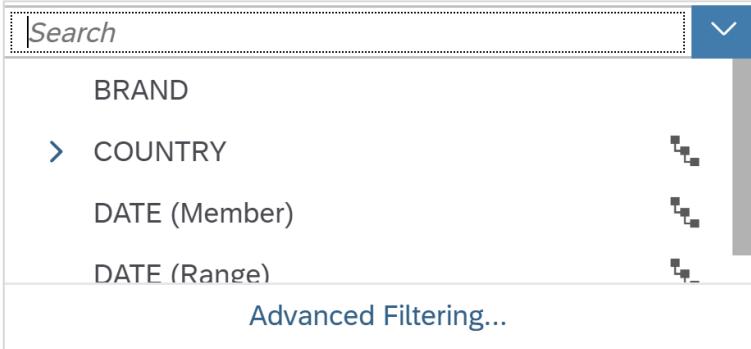
Explanation	Screenshot																																												
<p>48. Write Predictive Forecasts back into the Planning Model and use them in the Story</p> <p>Navigate to the tabs Forecast and Signal Analysis to explore the results of the Time Series Forecasting</p> <p>Try to answer the following question: What type of Trend and Seasonality does the sales for ALFA ROMEO in SPAIN has?</p> <p>What does error min/max means?</p> <p><b>Note:</b> Do this for several segments. Each segment's model is indeed independently calculated from all other models and has its own trend, seasonality, fluctuation, outliers and forecasts.</p> <p>Inspect a couple of entities to confirm this.</p>	 <p>The screenshot shows two tables side-by-side. The left table, titled 'Top Entities', lists entities with their corresponding Horizon-Wide MAPE values. The right table, titled 'Bottom Entities', also lists entities with their Horizon-Wide MAPE values. Both tables have a header row and several data rows.</p> <table border="1"> <thead> <tr> <th>Entity</th> <th>Horizon-Wide MAPE</th> </tr> </thead> <tbody> <tr><td>VOLVO — BELGIUM</td><td>7.25%</td></tr> <tr><td>PORSCHE — FRANCE</td><td>8.74%</td></tr> <tr><td>RENAULT — SPAIN</td><td>9.41%</td></tr> <tr><td>ALFA ROMEO — SPAIN</td><td>10.89%</td></tr> <tr><td>SEAT — SPAIN</td><td>11.32%</td></tr> <tr><td>GM — BELGIUM</td><td>11.35%</td></tr> <tr><td>RENAULT — FRANCE</td><td>12.15%</td></tr> <tr><td>SEAT — FRANCE</td><td>12.73%</td></tr> <tr><td>VOLVO — GERMANY</td><td>12.94%</td></tr> <tr><td>SEAT — ITALIA</td><td>14.36%</td></tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Entity</th> <th>Horizon-Wide MAPE</th> </tr> </thead> <tbody> <tr><td>ALFA ROMEO — FRANCE</td><td>24.41%</td></tr> <tr><td>VOLVO — UK</td><td>20.29%</td></tr> <tr><td>GM — UK</td><td>20.26%</td></tr> <tr><td>ALFA ROMEO — UK</td><td>16.27%</td></tr> <tr><td>ALFA ROMEO — ITALIA</td><td>15.96%</td></tr> <tr><td>PORSCHE — GERMANY</td><td>15.63%</td></tr> <tr><td>PORSCHE — BELGIUM</td><td>14.68%</td></tr> <tr><td>GM — ITALIA</td><td>14.63%</td></tr> <tr><td>RENAULT — GERMANY</td><td>14.45%</td></tr> <tr><td>SEAT — ITALIA</td><td>14.36%</td></tr> </tbody> </table>	Entity	Horizon-Wide MAPE	VOLVO — BELGIUM	7.25%	PORSCHE — FRANCE	8.74%	RENAULT — SPAIN	9.41%	ALFA ROMEO — SPAIN	10.89%	SEAT — SPAIN	11.32%	GM — BELGIUM	11.35%	RENAULT — FRANCE	12.15%	SEAT — FRANCE	12.73%	VOLVO — GERMANY	12.94%	SEAT — ITALIA	14.36%	Entity	Horizon-Wide MAPE	ALFA ROMEO — FRANCE	24.41%	VOLVO — UK	20.29%	GM — UK	20.26%	ALFA ROMEO — UK	16.27%	ALFA ROMEO — ITALIA	15.96%	PORSCHE — GERMANY	15.63%	PORSCHE — BELGIUM	14.68%	GM — ITALIA	14.63%	RENAULT — GERMANY	14.45%	SEAT — ITALIA	14.36%
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<p>49. On the toolbar menu, click the <b>Save Forecasts</b> icon</p> <p><b>Note:</b> When the predictive model is applied, data are written to the private version of the planning model segmented by Brand and Country.</p>	 <p>The screenshot shows the toolbar menu with various icons. The 'Save Forecasts' icon, which is a blue square with a white downward arrow, is highlighted. Below the toolbar, there are three tabs: Overview, Forecast, and Signal Analysis. The 'Overview' tab is currently selected.</p>																																												

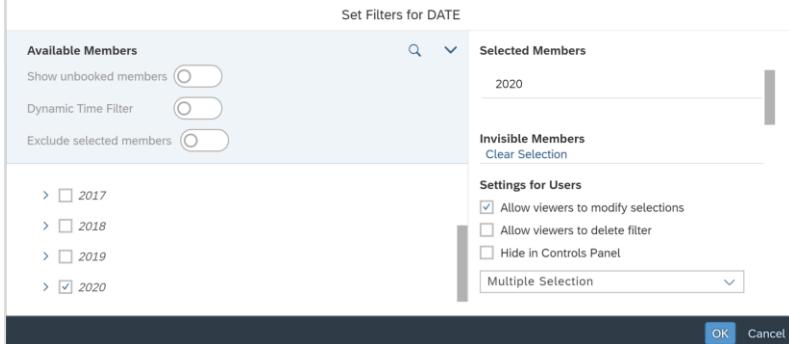
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<p>50. From the pop-up menu select the <b>Predictive Forecast Version</b> you have created</p> <p>Click <b>Save</b></p>																																														
<p>51. Return to the main <b>Story</b></p> <p><b>Refresh</b> the page to see the predicted results on the table</p> <p>Click the <b>arrow</b> under Predictive Forecast to expand the date dimension and examine the quarterly/monthly predictive forecasts</p> <p><b>Try to answer the following questions:</b></p> <p>Find the value for ALFA ROMEO-SPAIN for January 2020</p> <p>Find the same value in your Predictive Scenario</p>	 <table border="1"> <thead> <tr> <th rowspan="2">Category</th> <th colspan="2">Actual</th> <th colspan="2">Predictive Forecast</th> </tr> <tr> <th>DATE</th> <th>Account</th> <th>COUNTRY</th> <th>BRAND</th> </tr> </thead> <tbody> <tr> <td>&gt; (all)</td> <td>SALES</td> <td>&gt; (all)</td> <td>ALFA ROMEO</td> <td>1,840,289.00</td> <td>367,647.33</td> </tr> <tr> <td></td> <td></td> <td></td> <td>GM</td> <td>1,603,660.00</td> <td>388,480.84</td> </tr> <tr> <td></td> <td></td> <td></td> <td>PORSCHE</td> <td>5,749,984.00</td> <td>1,537,533.57</td> </tr> <tr> <td></td> <td></td> <td></td> <td>RENAULT</td> <td>6,280,208.00</td> <td>1,535,707.93</td> </tr> <tr> <td></td> <td></td> <td></td> <td>SEAT</td> <td>6,075,799.00</td> <td>1,372,003.66</td> </tr> <tr> <td></td> <td></td> <td></td> <td>VOLVO</td> <td>1,445,800.00</td> <td>378,024.76</td> </tr> </tbody> </table>	Category	Actual		Predictive Forecast		DATE	Account	COUNTRY	BRAND	> (all)	SALES	> (all)	ALFA ROMEO	1,840,289.00	367,647.33				GM	1,603,660.00	388,480.84				PORSCHE	5,749,984.00	1,537,533.57				RENAULT	6,280,208.00	1,535,707.93				SEAT	6,075,799.00	1,372,003.66				VOLVO	1,445,800.00	378,024.76
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<p>52. <b>Forecasting on Intermediate Level (ONE Predictive Model per COUNTRY)</b></p> <p><b>Create a private version.</b></p> <p><b>Click the table</b></p> <p>On the toolbar menu, click the <b>Version Management</b> icon</p>	
<p>53. Under <b>Public Versions</b></p> <p><b>Click the Copy icon for Actual to create a private version</b></p>	
<p>54. Name the <b>Version</b> Country Level Forecasts _UserXX</p> <p><b>Note:</b> UserXX to be replaced with your <b>FirstNameLastName</b></p> <p><b>Set Category to Forecast</b></p> <p>Select Create a blank version</p> <p>Click OK</p>	

Explanation	Screenshot
<p>55. Return to the <b>Predictive Scenario</b></p> <p>Click the <b>arrow</b> next to Predictive Models to expand the menu</p>	
<p>56. Click the <b>three dots</b></p> <p>Click <b>Duplicate</b></p>	
<p>57. Click <b>Model 2</b></p>	
<p>58. Update the settings of the <b>Predictive Scenario</b>:</p> <p>Under <b>Entity</b></p> <p>Remove <b>BRAND</b> keep only <b>COUNTRY</b></p> <p>Click <b>Train &amp; Forecast</b></p> <p><b>Note:</b> Will take roughly 2 minutes to generate the forecast results.</p>	
<p>59. On the toolbar menu, click the icon <b>Save Forecasts</b></p> <p><b>Note:</b> When the predictive model is applied, data are written to the private version <b>Country Level</b></p>	

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<p><b>Forecasts</b> of the planning model.</p>																																																					
<p>60. From the pop-up menu, select the <b>Country Level Forecasts</b> version you have created</p> <p><b>Click Save</b></p>	 <p>Save Forecasts</p> <p>*Version: <input type="text" value="Country Level Forecasts (Forecast)"/></p> <p>Save Cancel</p>																																																				
<p>61. Return to the main <b>Story</b></p> <p><b>Refresh</b> the page to see the predicted results on the table</p> <p></p>	 <p>Category</p> <table border="1"> <thead> <tr> <th rowspan="2">Account</th> <th rowspan="2">COUNTRY</th> <th rowspan="2">BRAND</th> <th>Actual</th> <th>Country Level Forecasts</th> <th>Predictive Forecast</th> </tr> <tr> <th>DATE</th> <th>&gt; (all)</th> <th>&gt; (all)</th> <th>&gt; (all)</th> </tr> </thead> <tbody> <tr> <td>SALES</td> <td>&gt; (all)</td> <td>Unassigned</td> <td>—</td> <td>5,381,380.11</td> <td>—</td> </tr> <tr> <td></td> <td></td> <td>ALFA ROMEO</td> <td>1,840,289.00</td> <td>—</td> <td>367,647.33</td> </tr> <tr> <td></td> <td></td> <td>GM</td> <td>1,603,660.00</td> <td>—</td> <td>388,480.84</td> </tr> <tr> <td></td> <td></td> <td>PORSCHE</td> <td>5,749,984.00</td> <td>—</td> <td>1,537,533.57</td> </tr> <tr> <td></td> <td></td> <td>RENAULT</td> <td>6,280,208.00</td> <td>—</td> <td>1,535,707.93</td> </tr> <tr> <td></td> <td></td> <td>SEAT</td> <td>6,075,799.00</td> <td>—</td> <td>1,372,003.66</td> </tr> <tr> <td></td> <td></td> <td>VOLVO</td> <td>1,445,800.00</td> <td>—</td> <td>378,024.76</td> </tr> </tbody> </table>	Account	COUNTRY	BRAND	Actual	Country Level Forecasts	Predictive Forecast	DATE	> (all)	> (all)	> (all)	SALES	> (all)	Unassigned	—	5,381,380.11	—			ALFA ROMEO	1,840,289.00	—	367,647.33			GM	1,603,660.00	—	388,480.84			PORSCHE	5,749,984.00	—	1,537,533.57			RENAULT	6,280,208.00	—	1,535,707.93			SEAT	6,075,799.00	—	1,372,003.66			VOLVO	1,445,800.00	—	378,024.76
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<p>62. Make the table more readable:</p> <p><b>Click on the table</b></p> <p><b>On the toolbar menu, click Designer</b></p>	 <p>Designer      Controls      View</p>																																																				
<p>63. On the Builder menu under <b>Filters</b></p> <p><b>Click Category</b></p>	 <p>Builder</p> <p>ACCOUNT: 1 Model Members</p> <p>COUNTRY</p> <p>BRAND</p> <p>+ Add Measures/Dimensions</p> <p>Columns</p> <p>Category</p> <p>DATE</p> <p>+ Add Measures/Dimensions</p> <p>Filters</p> <p>Account (1) SALES</p> <p>Category (3) public:Actual (Actual), Predictive Forecast, Country Level Fo...</p> <p>+ Add Filters</p> <p>Reporting</p> <p>Automatically resize table vertically</p> <p>Properties</p> <p>View Mode</p>																																																				

Explanation	Screenshot
<p>64. From the pop-up menu</p> <p><b>Remove Actual</b></p> <p><b>Click OK</b></p>	
<p>65. On the Builder menu under <b>Filters</b></p> <p><b>Click Add Filters</b></p>	
<p>66. Click <b>DATE (Member)</b></p>	

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<p>67. Select only 2020</p> <p><b>Click OK</b></p> <p><b>Save changes</b></p>																																																																								
<p>68. Inspect the Predictive Results</p> <p><b>Note:</b> When the predictive model is applied, forecasts are stored in the respective member combinations of DATE &amp; COUNTRY while setting BRAND to Unassigned. Planning users are free to allocate these country-level forecasts onto brands later in the planning process.</p>	<table border="1"> <thead> <tr> <th rowspan="2">COUNTRY</th> <th rowspan="2">BRAND</th> <th>Category</th> <th>Country Level Forecasts</th> <th colspan="4">Predictive Forecast</th> </tr> <tr> <th>DATE</th> <th>&gt; 2020</th> <th>&lt; 2020</th> <th>&gt; Q1 (2020)</th> <th>&gt; Q2 (2020)</th> <th>&gt; Q3 (2020)</th> <th>&gt; Q4 (2020)</th> </tr> </thead> <tbody> <tr> <td>&gt; (all)</td> <td>Unassigned</td> <td>5,381,380.11</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td></td> <td>ALFA ROMEO</td> <td>-</td> <td>367,647.33</td> <td>93,132.58</td> <td>99,119.66</td> <td>89,485.72</td> <td>85,909.37</td> </tr> <tr> <td></td> <td>GM</td> <td>-</td> <td>388,480.84</td> <td>94,147.35</td> <td>95,259.67</td> <td>92,384.11</td> <td>106,689.71</td> </tr> <tr> <td></td> <td>PORSCHE</td> <td>-</td> <td>1,537,533.57</td> <td>351,023.80</td> <td>399,502.01</td> <td>362,410.04</td> <td>424,597.73</td> </tr> <tr> <td></td> <td>RENAULT</td> <td>-</td> <td>1,535,707.93</td> <td>353,148.58</td> <td>399,226.60</td> <td>375,696.23</td> <td>407,636.52</td> </tr> <tr> <td></td> <td>SEAT</td> <td>-</td> <td>1,372,003.66</td> <td>327,713.92</td> <td>371,739.59</td> <td>325,875.79</td> <td>346,674.36</td> </tr> <tr> <td></td> <td>VOLVO</td> <td>-</td> <td>378,024.76</td> <td>87,475.43</td> <td>98,326.33</td> <td>91,755.30</td> <td>100,467.71</td> </tr> </tbody> </table>	COUNTRY	BRAND	Category	Country Level Forecasts	Predictive Forecast				DATE	> 2020	< 2020	> Q1 (2020)	> Q2 (2020)	> Q3 (2020)	> Q4 (2020)	> (all)	Unassigned	5,381,380.11	-	-	-	-	-		ALFA ROMEO	-	367,647.33	93,132.58	99,119.66	89,485.72	85,909.37		GM	-	388,480.84	94,147.35	95,259.67	92,384.11	106,689.71		PORSCHE	-	1,537,533.57	351,023.80	399,502.01	362,410.04	424,597.73		RENAULT	-	1,535,707.93	353,148.58	399,226.60	375,696.23	407,636.52		SEAT	-	1,372,003.66	327,713.92	371,739.59	325,875.79	346,674.36		VOLVO	-	378,024.76	87,475.43	98,326.33	91,755.30	100,467.71
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