**SMArT v2.0 Enhancement Descriptions**

Enhancement 1

Customization of country activation timelines on the ‘Site Activation Plan’ tab. The goal of this enhancement is to allow a user to override the standard country timelines found within the Redshift table and enter new, custom activation timelines for the country if needed.

\*For all UI-related bullet descriptions, please reference visual mock-up found in PowerPoint file attached below.

* On the left-side entry panel, add a header above the site total field called ‘Total Sites’.
* Add 2 additional columns to the right of the ‘Total Sites’ column with headers called ‘**Customize Activation Schedule’** and ‘**Reset All Custom Timelines’**. There should be a pressable icon for each column within each country row. See PPT mock-up example attached below.
* On the left-side entry panel, add a button below the current ‘Target LSFV Date’ field called ‘**Customize Timelines**.’ When pressed, the ‘Customize Activation Schedule’ and ‘Reset’ columns with the ‘Reset All Custom Timelines’ button above them would expand open as shown in the mockup. Pressing the button again would collapse/hide these columns which are related to customization. The default view upon entry to the application is to have **the customize columns collapsed/hidden**.
* When the icon in the new ‘**Customize Activation Schedule’** column next to a country is pressed, a new **pop**-**up** **window** appears. See PPT mock-up example attached below. This window should allow manual entry or copy/paste entry in the exact formatting and ordering required. 3 columns: ‘Site Total’, ‘Start DT’ and ‘End DT’. Date format must be in DD-MMM-YYYY. No limit to number of custom date rows should be added.
  + ‘**Cancel’** button closes window without saving.
  + ‘**Clear’** button clears all current entries in the window.
  + ‘**Save’** button saves and automatically closes the pop-up window.
  + Upon saving the entries, the ‘Total Sites’ field on the main UI should update to the sum of the ‘Site Total’ column from the pop-up window. The ‘Total Sites’ field on the main UI should also then update to be **grayed-out/un-editable** indicating that the site total cannot be altered from the main page. A user would have to use the custom timelines pop-up window to make changes or clear the entries in order to revert to a standard timelines entry.
    - An End DT cannot come before a Start DT in the same entry row. There also cannot be **overlaps** in Start/End DT ranges that are created i.e. 14Jun2025-20Jun2025 and 18Jun2025-24Jun2025 should not be allowed. If either of these types of entries are created, upon a user pressing the ‘Save’ button, an **error pop-up** message should be created to the effect of “Error. Illogical Date values entered. Please revise and re-save.”
* For any countries that have a valid entry added and saved within the custom pop-up window, an **indicator icon** should be added to the left of the country name to indicate that timelines have been customized. If this indicator is present, the custom site activation schedule timelines will override the use of the standard timelines for that country when **the analysis is run** (more on how to treat calculations for custom timelines is included below).
  + If the entries in the pop-up window are cleared and saved, or if the country ‘Reset’ button or ‘Reset All Country Timelines’ button is pressed, the custom icon is removed and the country would revert to using standard timelines. Additionally, the ‘Total Sites’ column will be clear and once again be editable.
* For resets, there should be an overall ‘Reset All Custom Timelines’ button that, when pressed, would clear out all saved custom timeline entries for all countries. The individual reset icon next to each country name in the ‘Reset’ column would only clear out custom entries made for that country. Clicking either reset button should remove the custom icon next to the affected country name. Additionally, the ‘Total Sites’ column will be clear and once again be editable.
* Add 5 new values to the ‘Non-Preferred Countries’ drop-down menu” ‘**PH Country 1**”, “PH Country 2” ….. “**PH Country 5**”. When any of these 5 options are selected, the ‘Total Sites’ field should be **gray** and **uneditable** from the main page (this is because there will be no connecting country name value in the Standard Timelines redshift table). These options should only be open to edits via the Customize Timelines button. If they remain in a selected state but no custom entries are added at the time that ‘Run Analysis’ is pressed, they should be ignored and excluded from any/all results.
* Following the addition of all scenario and country data entries, when a user presses ‘Run Analysis,’ **standard timelines (today’s existing functionality)** will be used to generate the country-specific site activation curve for all countries with a ‘Total Site’ value greater than 1, and without the custom icon. Those country’s with a value of >=1 will use the new custom timeline entries for any country when the custom icon is present.
* Only countries without the custom timelines icon will consider the **Milestone Anchor type** and **Date** entered for the scenario (aka standard timeline sites). This date should be ignored when considering the custom timelines that have been entered.
* See additional Customized Timelines section and attached Excel file below for specific details and an example on how to convert **customized timeline entries into site activation curves.**
* Once the individual country site activation schedules are generated (using either the current standard or new custom methods), they are to be combined into the overall scenario site activation curve with 25/50/90 days/dates produced just as it is done in PROD today. From this point forward, the code should not need to change and the functionality of the HL Modeling Solver tab should be unaffected.
* When the ‘Overall Activation Plan Summary’ table roll-up at the top of the UI is created at the very end of the Run Analysis code, the min start date across all countries (standard or custom) is determined and then presented as the FSA in this table. The reciprocal calculation between the FAP and FSA milestone dates that exists today remains the same, however, this change introduces the possibility that the FSA Milestone Anchor Date that is entered on the left side panel is ultimately not the same as the FSA date published to the Summary roll-up table. This could happen if a custom date is entered for a country that is before the FSA milestone date.
* Add a new column to the ‘Plan Audit’ tab table called ‘Timeline Type’ to the right of the current P100 column and enter a value of ‘Standard’ or ‘Custom’ based on whether or not any countries in the saved scenario have been customized (have custom icon present) so that we can identify scenarios which used altered timelines. If >=1 country used a custom timeline, the scenario is considered to be custom.

 

**Converting customized timelines into activation curves**   
   
The basic methodology for converting a range into a distribution is to calculate the days between the start and end dates of the entered range and then divide the site total by days between the range. This will provide an activation rate (days/sites = site activation rate per day during the range). In a table, the date range is then split into 1 row per day with the start date equal to row 1. For any “days between” ranges equal to 0, no further processing is required. The last row in the range will be the entered end date minus 1 when a “days between” calculation is >=1 . A running sum is then calculated off the rates across the rows within the range. This running sum is then converted to an integer. Next, the previous row value is subtracted from the running integer range in rows 2-n with row 1 retaining its integer value to create a non-cumulative value. This method is repeated per range. Finally, all non-cumulative values equal to zero should be removed from the custom range distribution.

The following is a detailed step by step processing of an entered country timeline:

Inputs Step 1:

* Assign country name to input rows, create a record id for each unique row, calculate the days between the start and end date of each row and create an activation rate (actual\_site\_activations/days\_between). Note, in the table below the country was added prior to importing the inputs.

A screenshot of a computer

AI-generated content may be incorrect.

* **PROC** **IMPORT** OUT= WORK.custom\_inputs

DATAFILE= "C:\Users\connolb\OneDrive - Pfizer\Documents\Customcurveinputsv2.xlsx"

DBMS=EXCEL REPLACE;

RANGE="Sheet1$";

SCANTEXT=YES;

USEDATE=YES;

SCANTIME=YES;

**run**;PROC Sort data=custom\_inputs;

by country start\_date;

Run

;

proc rank data=custom\_inputs out=custom\_inputs1 ties=low;

var start\_date;

ranks record\_id;

run;

Proc SQL;

create table custom\_inputs1 as

Select

a.country,

a.actual\_site\_activation,

a.start\_date,

a.end\_date,

a.record\_id as record\_id Label="record\_id"

from

work.custom\_inputs1 as a

;

Inputs Step 2:

* Filter out all ‘days between’ rows equal to zero and create distributions for all rows >=1. The number of rows added for the distribution (date range) is equivalent to the ‘days between’ total. In the distribution, create a running activation rate total. Convert the running activation rate to an integer and bring forward the previous row value for rows 2-n and row 1 of the distribution will use it’s own converted running activation integer value.

A screenshot of a computer

AI-generated content may be incorrect.

* proc sql;

create table custom\_inputs2 as

Select

a.\*,

a.End\_date - a.start\_date as Days\_Between

From

work.custom\_inputs1 as a

;

Proc SQL;

create table Custom\_inputs\_distributions as

Select

a.\*,

a.actual\_site\_activation/a.days\_between as activation\_rate

from

work.custom\_inputs2 as a

/\*Where\*/

/\*a.days\_between >= 1\*/

order by

a.country,

a.record\_id

;

data Custom\_inputs\_distributions ;

set Custom\_inputs\_distributions;

by country record\_id;

if first.record\_id then do;

do i=1 to days\_between;

day=i;

output;

end;

end;

run;

DATA Custom\_inputs\_distributions ;

SET Custom\_inputs\_distributions ;

by country record\_id;

if first.record\_id then

Do;

Running\_activation\_Plan =0;

END;

Running\_activation\_Plan + activation\_rate;

RUN;

Proc SQL;

create table Custom\_inputs\_distributions1 as

Select

a.\*,

Floor(Running\_activation\_Plan) as F\_Running\_activation\_Plan

From

work.Custom\_inputs\_distributions as a

;

data Custom\_inputs\_distributions2;

set Custom\_inputs\_distributions1;

Previous\_Activation\_N = lag(F\_Running\_activation\_Plan);

if Day=1 then Previous\_Activation\_N = F\_Running\_activation\_Plan;

By country record\_id;

run;

Inputs Step 3:

* The next step is to create the activation dates for the distribution. Simply add the day value created in the distribution of rows 2-n and for row/day 1 use the original start date. Additionally, at this point a new actual site activation value is created by subtracting the running activation rate sum from the running previous activation sum to determine on what date where each activation falls. All Actual\_Activations <1 should be removed.

A screenshot of a computer

AI-generated content may be incorrect.

**proc** **sql**;

create table Custom\_inputs\_distributions3 as

Select

a.\*,

Case when day = **1** Then a.F\_Running\_activation\_Plan Else a.F\_Running\_activation\_Plan - Previous\_Activation\_N End as Actual\_Site\_Activation2,

Case when day = **1** Then a.start\_date Else a.start\_date + (a.day-**1**) End as start\_date2 format=Date9.,

Case when day = **1** Then a.start\_date Else a.start\_date + (a.day-**1**) End as end\_date2 format=Date9.

from

work.Custom\_inputs\_distributions2 as a

;

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Inputs Step 4:

* Create a final set of custom activations for the country. First, go back and get all 0 ‘days between’ ranges that were excluded in Step 2. Next, union the new activations with the previously excluded activations.

A screenshot of a table

AI-generated content may be incorrect.

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Sort by Country, add the WW and Ctry Running Total columns as a reference to help with summing.

A screenshot of a data

AI-generated content may be incorrect.

* Proc SQL;

create table Custom\_inputs\_non\_distributions as

Select

a.country,

a.Actual\_Site\_Activation,

a.start\_date,

a.end\_date

from

work.custom\_inputs2 as a

Where

a.days\_between = 0

Union

Select

a.country,

a.Actual\_Site\_Activation2,

a.start\_date2,

a.end\_date2

from

work.Custom\_inputs\_distributions3 as a

where

a.Actual\_Site\_Activation2 >=1

;

PROC Sort data=Custom\_inputs\_non\_distributions;

by start\_date;

Run

;

DATA Custom\_inputs\_non\_distributions ;

SET Custom\_inputs\_non\_distributions ;

if first.start\_date then

Do;

WW\_Running\_activations =0;

END;

WW\_Running\_activations + Actual\_Site\_Activation;

RUN;

PROC Sort data=Custom\_inputs\_non\_distributions;

by country start\_date;

Run

;

DATA Custom\_inputs\_non\_distributions ;

SET Custom\_inputs\_non\_distributions ;

by country;

if first.country then

Do;

CNTRY\_Running\_activations =0;

END;

CNTRY\_Running\_activations + Actual\_Site\_Activation;

RUN;

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Enhancement 2 – UI column addition

Ability to delete ‘HL Modeling Solver’ saved plans in the same way a user can delete Site Activation scenarios on the Plan Audit tab. Please suggest the best way that this can be done.