

PlanR

Introduction

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Introduction

In retail, every season starts with a plan. Planning is one of the most important and complex processes in this business. It typically involves a complex set of activities that need to be followed as part of a workflow. Retailers set strategic merchandise and financial goals that guide the decision-making process of each department. Independently, merchants, store managers and stakeholders develop financial plans down to the store and item level. These granular plans define how the retailer will achieve their strategic goals. However, today's retail environment demands these plans be made for multiple channels, adding another layer of complexity to the planning process. **A proper chosen tool** which supports these core activities can not only provide a competitive advantage for retailers but is a must now days.

With the development of our planning framework and the base product **Blue Sky** aims to provide a configured solution which pulls measures and calculations together to solve a specific business need and fits into the corporate strategy of midsize retailers. Focus groups are specified in depth in the very first chapters.

PlanR **supports creating and developing trading plans**, analyzing customer behaviors, provides flexible and easy-to-use **retail planning** solution templates that enable retailers to create **high-level and low-level**, detailed financial plans. Our platform has all the advantages of a multidimensional framework with a proven scalability for developing multidimensional forecasting and planning based solutions.

PlanR enables retailers to drive profit and remain flexible to the changing business environment. This solution is planned to support retail strategy and lower the overall total cost of ownership.

The aim of this document to describe the fundamentals of the product named PlanR. The first part chapters provide a short overview of the fundamentals which determine how this system works, these are the following: type of database, definition of hierarchy, workbook and indicators. The next chapters describe the planning workflow which is supported by this system.

Targeted retailers

PlanR was developed for the following type of retailer:

- ✓ Retailer has about 20-25 k items
- ✓ Retailer has about 50-100 stores
- ✓ Retailer has about 5 users in planning area in maximum two roles: Top Down and Bottom Up
- ✓ Retailer uses 3 dimensions for the sales plans: location, calendar and product.

Basic Concept

This chapter provides an overview of the application and describes the conception of PlanR.

Multidimensional framework

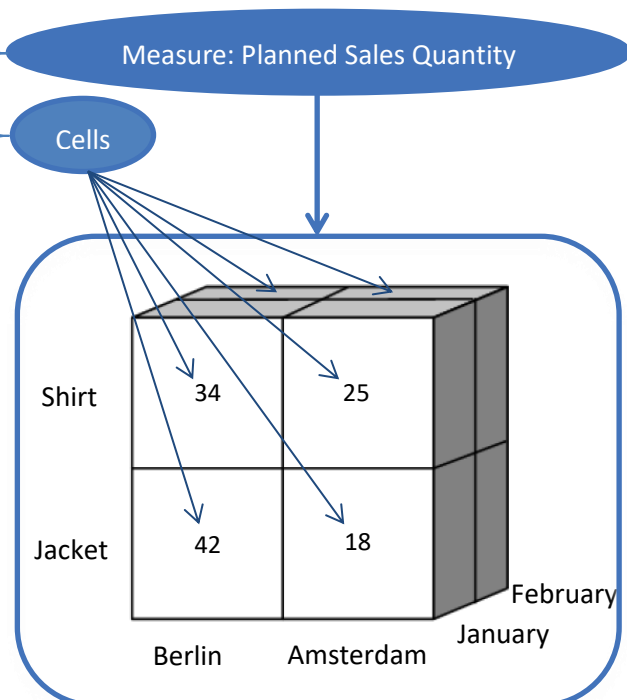
Information is **stored** and represented **based on the multidimensional framework** which enables to place the data in hierarchical arrangement. PlanR provides the possibility to **aggregate data to higher** level in the hierarchy or **spread aggregated data to lower levels**.

Relational Databases Vs Multidimensional Database

Relational databases: store data in a two-dimensional format where tables of data are presented in rows and columns.

Multidimensional database: the sales figures presented in the matrix are located at the intersections of the x-axis (store) and the y-axis (item) in the matrix.

Item	Store	Period	Sales Quantity
Shirt	Berlin	January	34
Shirt	Berlin	February	29
Shirt	Amsterdam	January	25
Shirt	Amsterdam	February	31
Jacket	Berlin	January	42
Jacket	Berlin	February	27
Jacket	Amsterdam	January	18
Jacket	Amsterdam	February	11



Advantage of multidimensional database

- Quick and efficient data loading and exporting
- Rapid online queries of data (greatly speeds data analyses and retrieval by eliminating need to search each individual record in a relational database)
- Easy of aggregation and spreading of data
- Easier to recognize the hierarchies and position in the database
- Allow „slicing and dicing” of data
 - Slicing:
 - Data can be sliced into single dimensions for easier analysis.
 - Data can view one page at a time. (in the worksheet)
 - Dicing
 - Data can be „diced” into subsections of multiple dimensions.
 - Dicing the data provides the user with the means to work with manageable chunks of data at lower levels.

Hierarchies and levels

The standard set of planning hierarchies is supplied with PlanR: Calendar, Location, and Product. Levels are qualities of an item that define the structure and roll up within the hierarchies. Hierarchies are typically loaded from another operational system. The standard set of hierarchy levels:

Calendar	Product	Location
<ul style="list-style-type: none"> •Year •Quater •Month •Week 	<ul style="list-style-type: none"> •Company •Division •Group •department •Class •Sub-Class •(Item*) 	<ul style="list-style-type: none"> •Company •Chain •Channel •District •Store

*Item level is used for migration; sub-class is the lowest level for planning.

Measure aggregation and spread

Users may edit data at many levels of each dimension (product, location, and calendar). If the data is modified at an aggregate level (a level with one or more lower levels beneath it), the modifications are distributed to the lower levels within the hierarchy. This function is called **spreading**.

If data is modified at a level that has a higher level above it (parent), the data changes are reflected in those higher levels. This is known as **aggregation**.

Each measure that is used in the solution is assigned a **default aggregation and spreading behavior**. A measure's aggregation method controls how data is calculated at aggregate levels of the dimension, such as month or department. A measure's spread method controls how data is spread to lower levels of a dimension when the user enters data at an aggregate level.

Aggregation methods

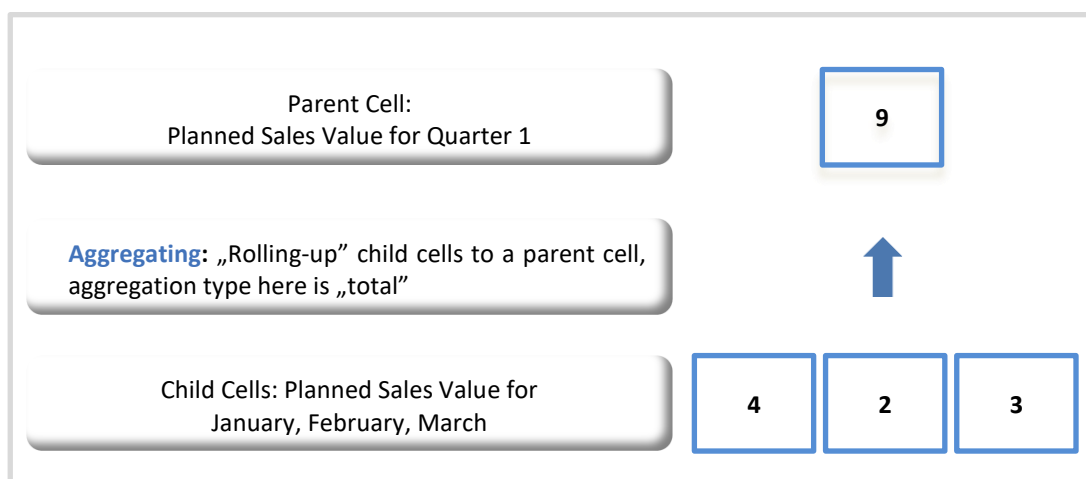
Aggregation Method	Description
Total	The measure is aggregated by taking the total (numeric sum) of the values of all child cells at the base intersection.
Recalculation	The measure is not aggregated but is recalculated at all aggregated levels through a recalculation expression.
Ambig	If all child cells have the same value, the aggregated value is the same as the child cells. Otherwise, it is ambig.
Average	The measure is aggregated by taking the numeric average of the values of all child cells at the base intersection.
Max/ Min	The measure is aggregated by taking the maximum / minimum/ of the values of all child cells at the base intersection.

Spread methods

Aggregation Method	Description
Proportional	A value entered into a parent cell will be distributed proportionally among all child cells (all the way to base level in hierarchy). Proportion is based on each original parent/ child relationship in hierarchy.
Replication	A value entered into a parent cell in any level of the hierarchy will be replicated (copied) into every child cell at the hierarchy's base level. Once each child cell at base level is populated, all parent cells are recalculated.
Evenly	A value entered into a parent cell at any level of the hierarchy will be distributed evenly among all child cells, all the way to base level in hierarchy.
Delta	The difference between the value of the original parent cell and new value of the parent cell is spread evenly among all child cells.

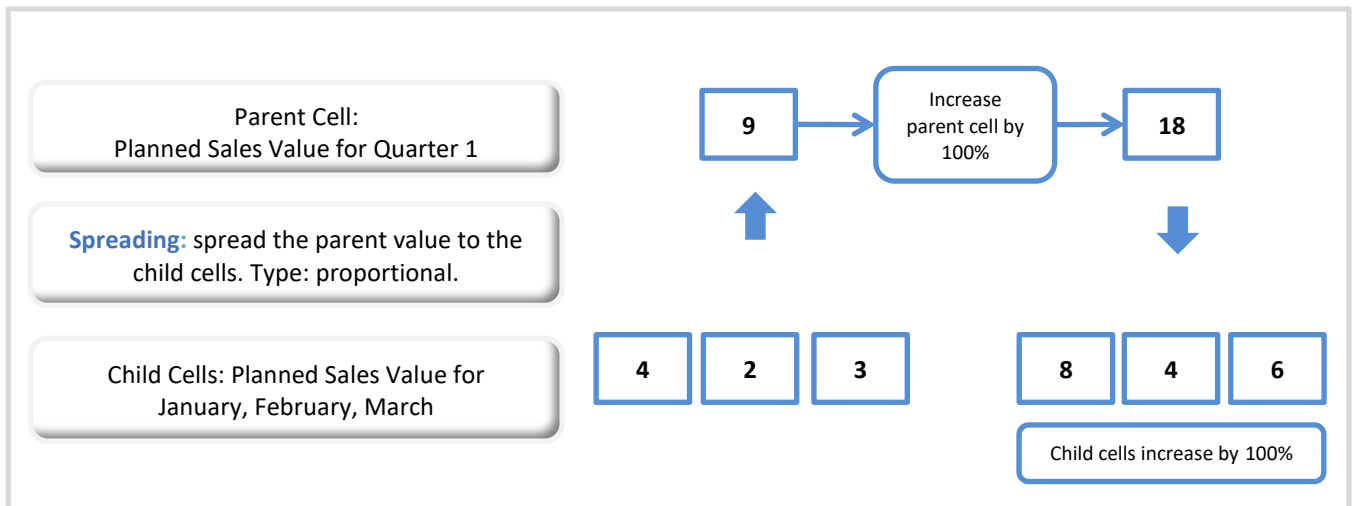
Example for aggregation

Retailer plans example the Sales Retail Value for the months, these values are automatically aggregated to the higher level of the hierarchy.



Example for spread

Making changes to data in a parent cell and allocating those changes to the child cells in existing ratios or proportions. Example: Retailer modify the Sales Retail Value for quarter 1, the values of months belonging to Quarter 1 are modified automatically.



Indicators and KPIs

Indicators

The indicators are special types of information that the retailers want to store, calculate, display at specific positions along one or multiple hierarchical levels, to manage a retail plan. The values of the indicators can impact through two separate types of relationships

One type of relationship is the calculation or rules between indicators. This calculation runs normally at the lowest level of the hierarchy: e.g.: at week level and not at month level)

Other type of relationship is the hierarchical relationship. The system automatically rolls-up the values from lower levels to the higher level in the hierarchy or spread down from higher level values to the lower levels. When user creates a plan for every week, RPAS calculates automatically the monthly, yearly values; or user creates a plan only at month level, RPAS calculate the weekly values according to the spread rules.

The planning tool contains standard set of indicators.

Workbook templates contain indicators and KPI-s which support

- To create the new plan
- to predict and manage the future and maximize sales and profits
- to maximize return on investment by planning sales and inventory to increase profitability and minimize markdowns and out of stocks

Key Financial Indicators & Key Performance Indicators (KPI)

- ✓ Sales indicator and KPI-s
 - Planned Sales
 - Comparing indicators to last year's data
 - Cumulative Mark-up (CMU%)
 - Gross Margin Retail
 - Gross Margin %
 - Cost of Goods Sold (COGS)

- ✓ Inventory indicators and KPI-s
 - Beginning of Sales Inventory
 - Receipt Retail inventory
 - Receipt Cost Inventory
 - End of Period Inventory
 - Stock to Sales Ratio
 - Shell Thru%

Workbooks, views

A planner uses a **workbook** to build and maintain plans throughout the season. The workbook is a user-defined **data subset** (of a master database) that includes selected dimensions levels.

These workbooks **consist of views** and graphical charts used for planning, viewing, and analyzing business measures. Workbooks organize related planning information and divide levels of user responsibility. This framework allows a user to easily view, create, modify, and store data sets that are common to repeated tasks.

A **workbook structure** consists of the following elements:

- ✓ **Product levels and members** such as Department, Class, and Sub-Class for the Men's Sweater Department.
- ✓ **Calendar levels and members** such as Month, and Week for 2010 year.
- ✓ **Location levels and members** may reflect multiple channels within an organization at their aggregate level, such as total Brick & Mortar divisions, Catalog, or e-Commerce.
- ✓ **Plan versions** such as Working Plan, Last Year Plan, Approved Plan

Planning **views are multidimensional pivot tables** that provide users with views of the data contained in a workbook. PlanR provides a series of built-in views which contain pre-defined lists of measures and are arranged to reflect a step in the standard planning process, allowing a user to work in a logical path to build a plan. Each view can contain its own unique product, calendar, location, and metric information. This approach **enables users across an organization to use a standard planning process**.

Views can be customized for each user. Rotating, pivoting, and format functions allow a user to create individual views within a view. Each user also can display the data in a graphical format by using the charting function.

Data handling

Workbook – personal data repository

When you create a new workbook, you have to go through the wizard and select the data what you want to use. PlanR copies this data in your **personal data repository**, in the workbook. The workbook does not contain every data, information, this is useful because

- ✓ The user can have a better overview about data
- ✓ The calculations in the workbook can be perform more quickly

Save, Commit Workbook Data

Two options, Save and Commit, are available to ensure that data is saved during the planning process.

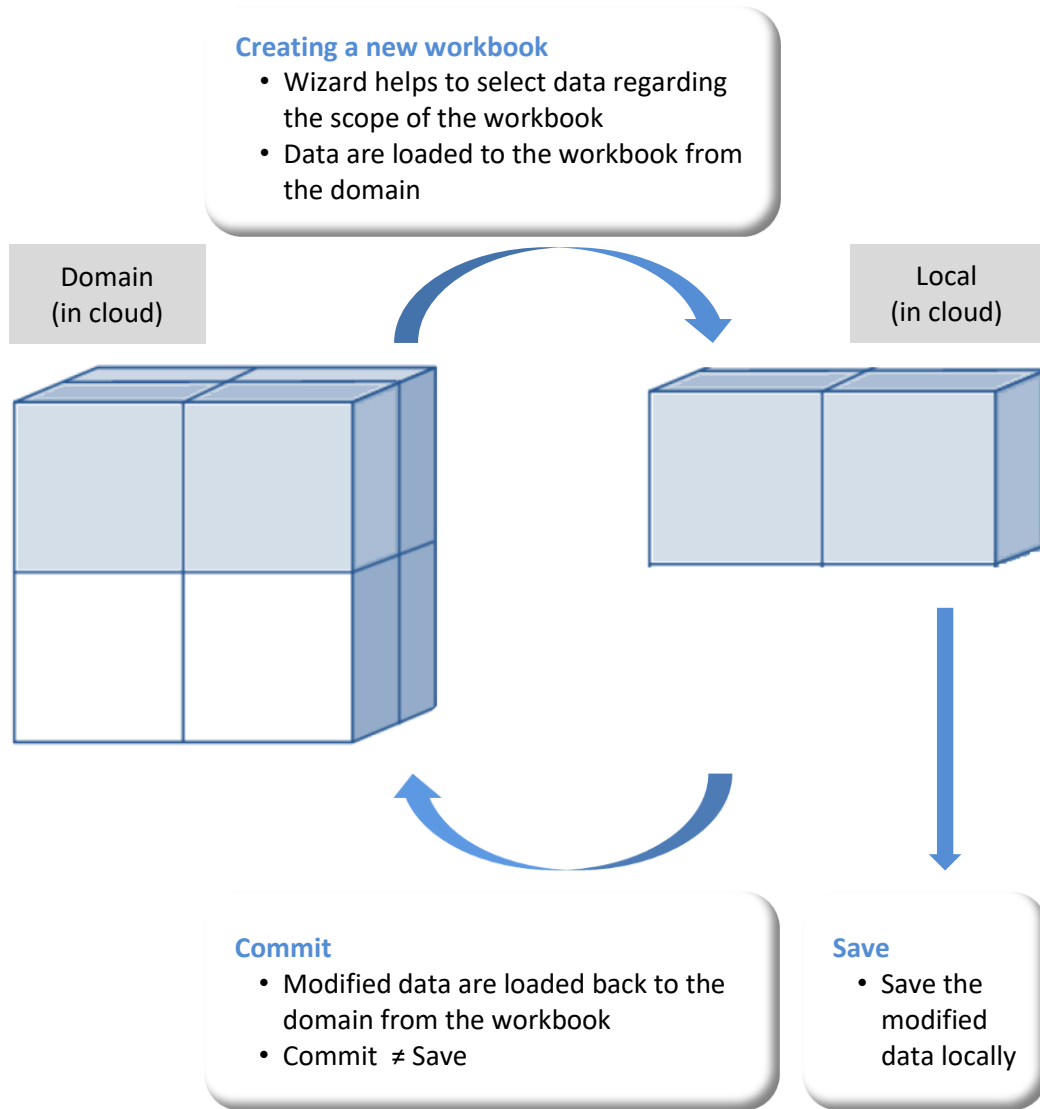
Save - Data is saved to a user database and does not affect the master database. This allows you to manipulate details and evaluate the impact of the changes without changing the master data. Any data saved with the Save option is saved to a local copy of the database. Other users are not able to view the saved data by default.

Commit - Date is saved to the master database. Data (including changed) is accessible to all users after their workbooks are rebuilt or refreshed.

Refreshing workbook

Refresh is method for retrieving updated data from the master database to a **local workbook**. A user can run a refresh process that has been configured to retrieve data from the master database to an existing workbook.

Summary of data handling



Roles

PlanR’s process involves multiple user roles. These roles work together to pass targets and approve the new plans at different levels of the product, location and time hierarchies. The process of using multiple roles divides the planning process into logical sections. There are two types of users in PlanR:

Top Down: These roles users are usually planning directors or planning managers. They create the overall targets for the company down to group/department level and set top-down group level targets for the bottom-up role.

Bottom Up: These roles are usually merchandise planners. They create retail plan plans for approval by the top down role.

Planning range of the roles

Range of indicators

Role	Hierarchies	
	Unit type of indicator	Value type of indicator
Top-Down	No	yes
Bottom-Up	yes	yes

Indicators contain mostly value data, where it is reasonable the indicator is duplicated for tracking unit values. Top Down user plan only for value measures, Unit and AUR type measures are created only for Bottom Up user. That means Top Down user plans the Sales Retail value. Bottom Up user plans Sales retail Values and Sales unit and Sales Average Unit values.

Range of hierarchies

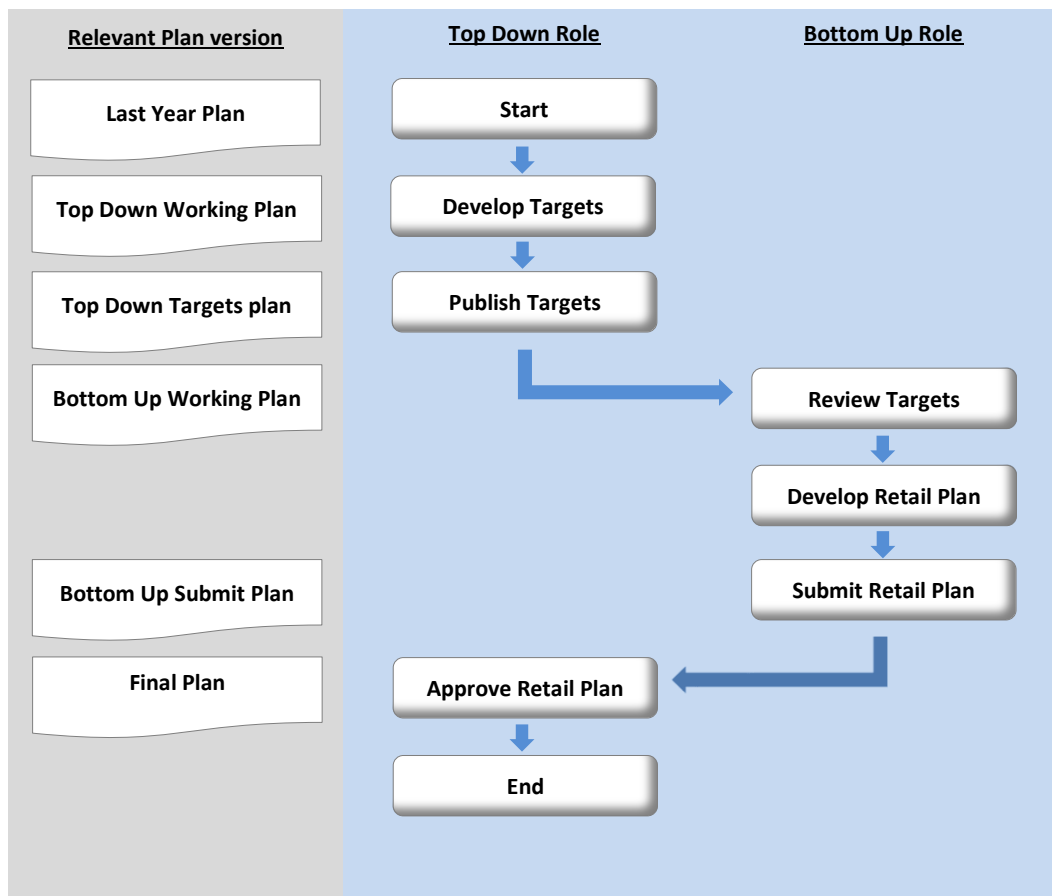
Role	Hierarchies		
	Calendar	Location	Product
Top-Down	Month	Chanel	Department
Bottom-Up	Week	Sub-Class	Store

Top-Down user plans at month level, never at week level.

Roles, Relationships and Plan Versions

Process: The targets are published by superior levels to the subsequent level: top down passes to bottom up. The bottom up then submits the retail plan for approval. The final plans are not created until they are approved by the bottom up role. This Process causes more type of plan versions. PlanR uses the following type of plan versions:

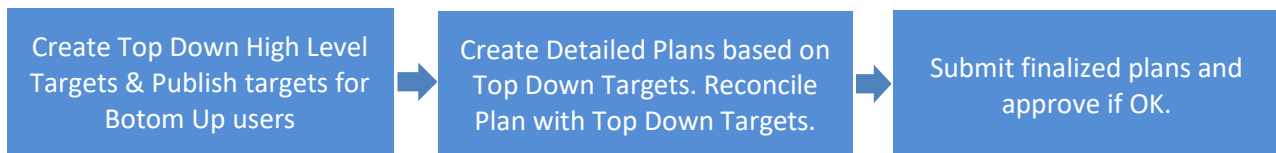
Relationship of the process flows and the plan versions



Planning Process

Introduction

PlanR allows business users to create high level strategic targets and detailed level financial plans. The picture below shows the high level planning process of PlanR.



The Planning Managers provide strategic targets to the planners by creating Top Down targets. The key financial indicators planned are Sales, Inventory, Receipts, and Gross Margin etc. at a higher level in the hierarchy.

Once the Targets are published, the planners spread these targets into more granular level to create detailed financial plans. The key financial indicators planned are Sales, Inventory, Receipts, and Gross Margin etc. at a lower level in the hierarchy.

Role Based Planning Overview

PlanR is a role based planning application. Roles define the organizational (location) level, product level and time period (calendar) at which planning will be done.

Currently there are two roles that are supported: Top Down and Bottom Up.

Creation of strategic targets (Top-Down)

This role is for Senior Planners/Planning managers who create strategic targets. The Senior Managers can plan till Channel/Month/Dept. level in this particular planning role.

Involves planning for financial indicators like: sales, inventory, gross margin and so on. Once the high-level targets are finalized they are passed down to detail level planning.

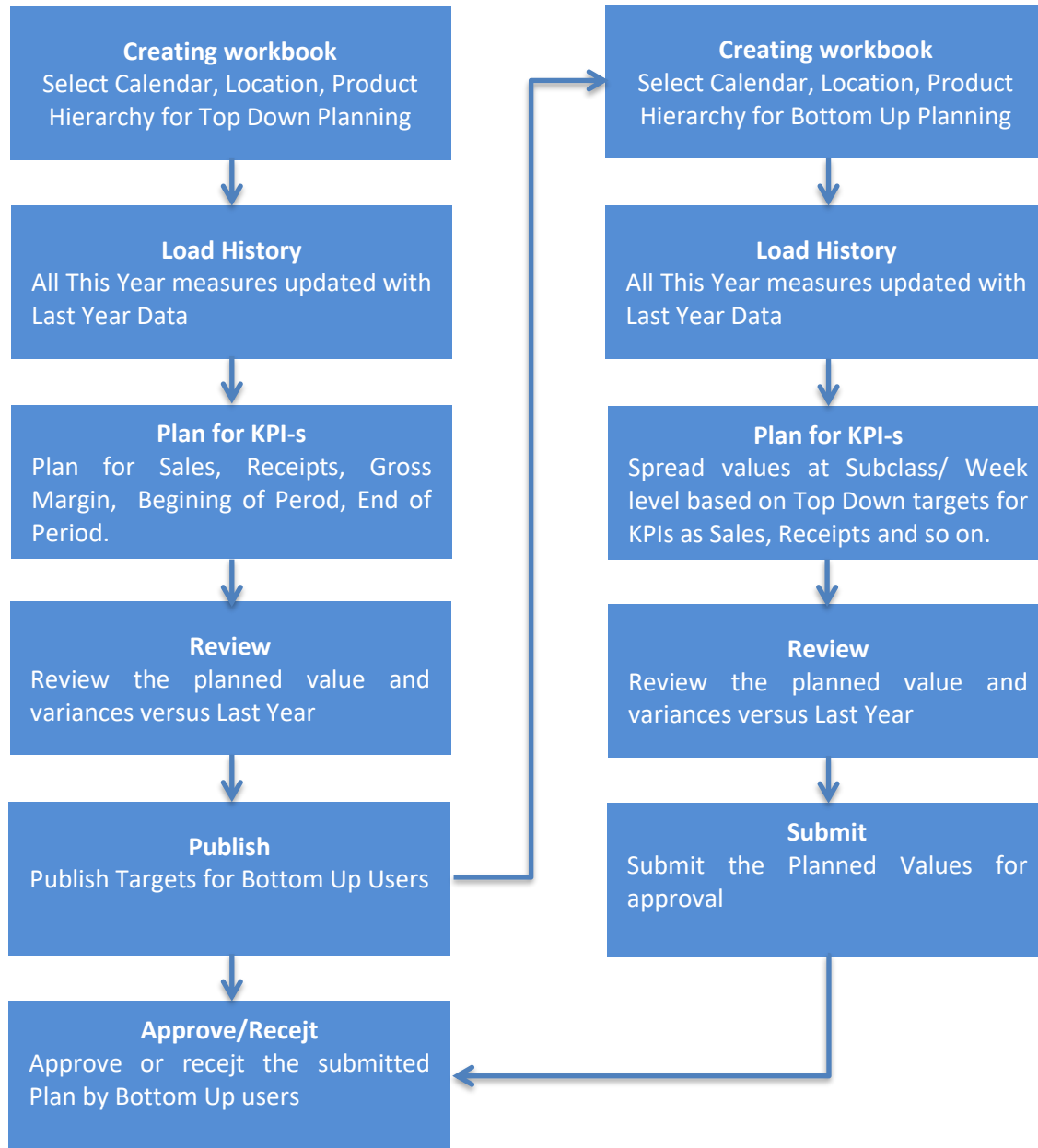
Creation of Detailed Plans (Bottom-Up)

This role is for Planners who create detailed level plans based on strategic targets. The planners can plan till Channel/Week/Subclass level in this particular planning role.

The planners (Bottom Up) spread the targets passed by TD users to create detailed financial plans. The key financial indicators for detailed financial plan include: Sales, Inventory, and Gross Margin etc. The detailed plans are reconciled against the targets and then approved to create the Final Approved Financial Plan.

Detailed Planning Process

The flowchart below presents a detailed process flow of PlanR.



Cloud Based – Technical background

PlanR is cloud-based. In the background works the following services:

- ✓ SQL server, that handle the data
- ✓ Analytics service that handle the calculations
- ✓ Application service that provides the user interface
- ✓ Active directory which handles the roles and user authentications.