IBM Planning Analytics for Allocations & Profitability Modeling

- Introduction

- Typical challenges with allocations and profitability modeling: how are they addressed by the IBM Planning Analytics solution

- How does it work?

IBM

Allocation Solution Examples

Financial Services
- Product and Customer Profitability
- Transfer Pricing
- 12b-1 Fee Reporting
- 15C Board Reporting

Manufacturing
- Activity Based Costing
- Overhead Rate and Cost Management
- Product Profitability

Corporate Finance
- Overhead Allocations
- Business Unit Profitability

Methodologies:
- Driver
- Rate
- Direct Charge
- Reference Account
- Attribute
- Direct Alignment
- Multi-step

In a nutshell, the

| IBM Planning Analytics Solution for Allocations and Profitability Modeling | Benefit |

- Facilitates the **plug & play design, configuration, and deployment** of enterprise-scalable profitability modeling and reporting solutions,

- Within an **expedited** timeline, and without requiring expert IT skills,

- At a lower total cost of ownership (TCO) than traditional allocation and profitability modeling solutions

Benefit
- Efficiency
- Scalability
- Reliability (IBM-developed and supported processes and process algorithms)

"Its just weeks to be effective"

IBM Planning Analytics Solution for Allocations and Profitability Modeling

A leading US bank and brokerage firm
- Implementation in 2018
- Activity-based Cost and Revenue Allocations, external facing, by Investment Vehicle, Service Offer, Segment, Channel
- go-live in January 2019

One of the worlds largest asset management firms
- Implementations in 2017 & 2018
- Profitability / Business Economics
- Allocations for 15C Board Reporting
- Go-live in 2019
- Click here for a webinar-replay

A global fortune 500 Insurance Company
- Pilot Implementation Q4 2018,
- Go-live in 2019
- Additional implementations in 2019

IBM Planning Analytics Solution for Allocations and Profitability Modeling:

What are the typical challenges with allocations and profitability modeling solutions?

And how are those addressed?

IBM Planning Analytics Solution for Allocations and Profitability Modeling

Business Challenge	→	IBM Planning Analytics Solution	→	Benefit

Business Challenge

- Need flexibility to combine varying allocation methods, approaches, methodologies

- I do not want to write scripts or 'code' business logic

- 'Hard-coded' vs. dynamic, driver-based allocation rules, logic & percentages

IBM Planning Analytics Solution

Allocation configuration (rules, process, sequence) is driven by **plug & play** configuration tables and user interfaces (UIs).
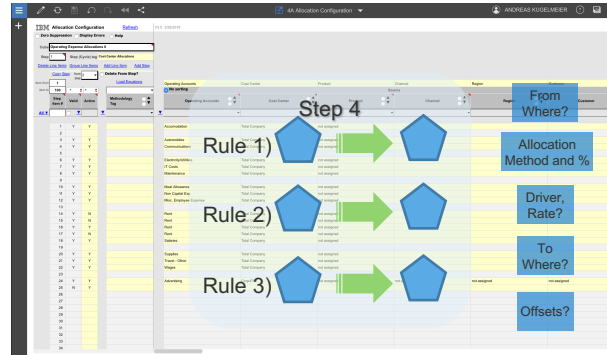
1. Allocation Model
2. Allocation Step (with Tagging)
3. Allocation Rule (with Tagging)
4. Source Data (members, consolidations, equations, filters)?
5. Total % to be allocated from source?
6. Allocation Type/Method? => By Direct Alignment, Attribute, Reference Account, Driver, Rate, Charge?
4. Location of Driver, Rate, Charge?
5. Target Intersection (members, consolidations, equations, filters)?
6. Offset Account and Intersection?
7. Rounding? (Allocation $ and/or $)

Benefit

- Functional team (i.e. Finance) owns, configures, and manages the solution

- No 'coding' or 'scripting'

- Same UI for different models or different allocation solutions (Internal Business Economics, 15C Reporting, Product Profitability, Customer Profitability, …)
  => no need to learn new tool

- Team is able to apply the best-suited allocation methods or a combination of methods, as needed

- Team is able to evaluate and implement changes rapidly

IBM Planning Analytics Solution for Allocations and Profitability Modeling
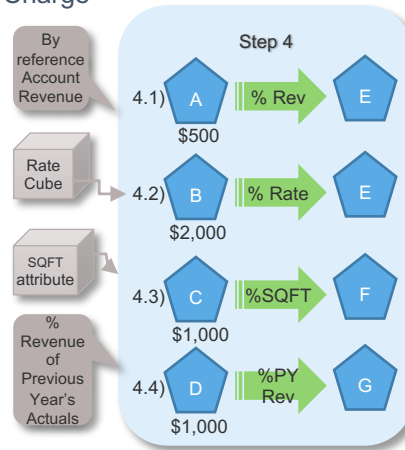
Business Challenge

- Need flexibility to combine varying allocation methods, approaches, methodologies

- I do not want to write scripts or 'code' business logic

- 'Hard-coded' vs. dynamic, driver-based allocation rules, logic & percentages

IBM Planning Analytics Solution

Out-of-the-box support for common allocation and apportionment methods:

- Directly aligned (fixed), % or All, from Source to Target

- By % of reference account or driver
  (= 'Driver value for Targets' / 'Driver value for Base')

- By time-dependent Driver/Rate/%/Charge as per lookup cube

- By Driver/Rate/%/Charge from a different scenario and/or time (example: last year's Actuals, by Beginning Balance, by Plan Values)

- Based on attributes, like SQFT, Headcount, CPU Usage, Machine Time, …

- Recursive allocations, like 'repeat x,y,z until … '

- Combine any number of allocation methods, for example "Allocate 50% of x to y by driver 1 and allocate the remainder to z by …")

By reference Account Revenue — Rate Cube — SQFT attribute — % Revenue of Previous Year's Actuals

Step 4

4.1) A $500 → % Rev → E
4.2) B $2,000 → % Rate → E
4.3) C $1,000 → %SQFT → F
4.4) D $1,000 → %PY Rev → G

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IBM Planning Analytics Solution for Allocations and Profitability Modeling

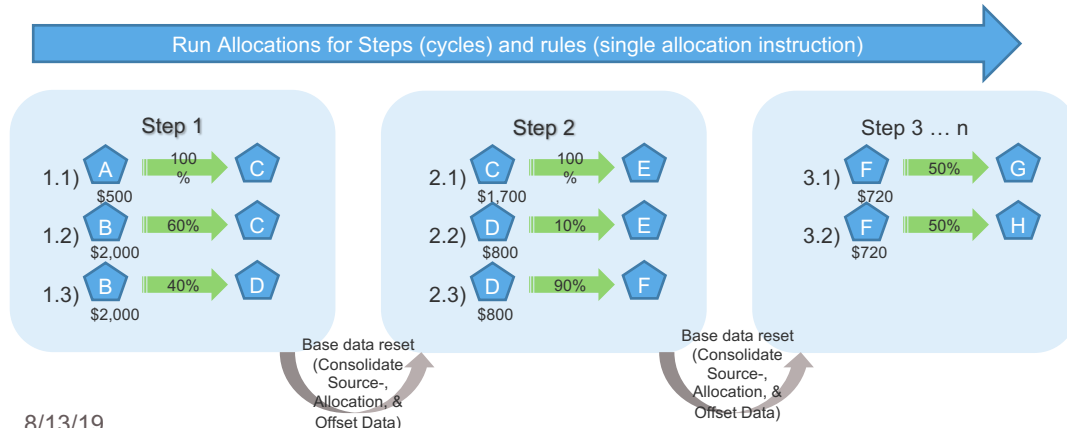| Business Challenge	IBM Planning Analytics Solution	Benefit

Business Challenge

- Support of comprehensive waterfall logic

- Adding, changing, deleting allocation rules

- Changing allocation waterfall steps and sequences

IBM Planning Analytics Solution

- Unlimited number of allocation waterfall cycles
- Recursive Allocations via Rule 'repeat… until…'
- Unlimited number of allocation rules

- Allocation rules can be changed, moved, copied, inserted by business users

- Allocation cycles (steps) can be moved, copied, inserted by business users

Benefit

- Functional team (i.e. Finance) owns, configures, and manages the solution

- No 'coding' or 'scripting'

- Team is able to evaluate and implement changes rapidly

Run Allocations for Steps (cycles) and rules (single allocation instruction)

Step 1

1.1) A $500 100% C
1.2) B $2,000 60% C
1.3) B $2,000 40% D

Base data reset (Consolidate Source-, Allocation, & Offset Data)

Step 2

2.1) C $1,700 100% E
2.2) D $800 10% E
2.3) D $800 90% F

Base data reset (Consolidate Source-, Allocation, & Offset Data)

Step 3 … n

3.1) F $720 50% G
3.2) F $720 50% H

IBM Planning Analytics Solution for Allocations and Profitability Modeling
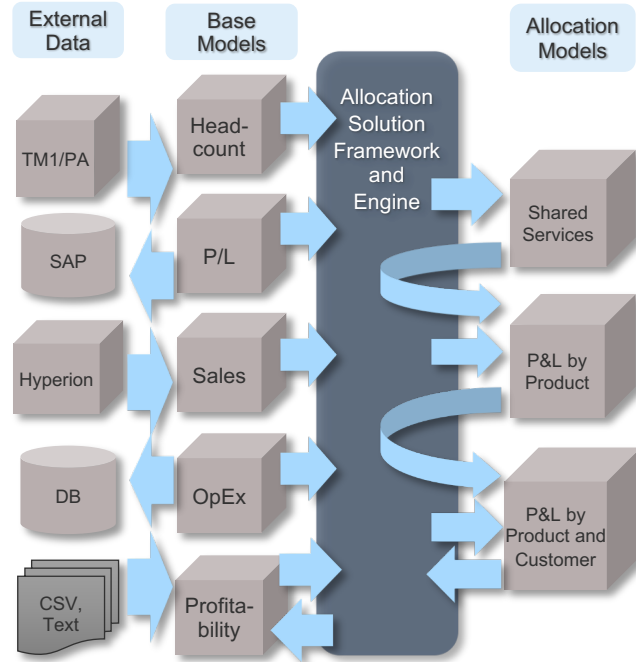
Business Challenge

- Adapting to changing business environments and new requirements (vs. getting 'stuck' with a legacy process)

- Keeping the focus on business process and business process modeling (rather than technical modeling) => modeling by business users!

- Data-Integration

- Integrate FP&A

- Export

IBM Planning Analytics Solution

Business-Centric Modeling
=> Productivity, Transparency, and Efficiency

- Integrate your master-, meta- and fact-data within hours to days, without needing expert technical skills
- Directly leverage existing TM1 / Planning Analytics FP&A Models where applicable
- Business Users can create, maintain and operate Base Models and Allocation Models
- Business Users define and manage the logical dependencies between models
- Export for txt, csv, RDBMS, TM1/PA, and others

External Data: TM1/PA, SAP, Hyperion, DB, CSV, Text

Base Models: Head-count, P/L, Sales, OpEx, Profita-bility

Allocation Solution Framework and Engine

Allocation Models: Shared Services, P&L by Product, P&L by Product and Customer

Benefit

- Ability to be and stay 'lean' and agile by

- Maintaining focus on procedural and business-functional complexities

- Not having to deal with technical development complexities

- Integrating FP&A-solutions where applicable

IBM Planning Analytics Solution for Allocations and Profitability Modeling

Business Challenge		IBM Planning Analytics Solution		Benefit

Business Challenge

- Validating allocations

- Transparency of Allocation Logic/Process

- Traceability of Allocations

- Customization

IBM Planning Analytics Solution

- **Built-in Allocation Validation, Allocation Data Lineage/Traceability Analysis and Reporting:**

  - **Allocation Validation Module:**
    - Model specific Cube with Source-, Allocation-, and Offset-Data, by Allocation Step
    - Use Cases:
      - Determine general validity of allocation steps,
      - Quickly identify over/under

  - **Allocation Lineage Module:**
    - Model-specific Cube with Allocation Transaction Data
    - By allocation step, rule, source, method, driver, equation, target, offset, including allocation source data, allocation data, offset data, allocation percentages
    - Use Cases:
      - Analyze allocation transactions by allocation type, rule, allocation equation, driver, sources, targets, offsets, etc.
      - Granular analysis of allocation rules.
      - Answer questions like 'who gave how much to whom and why?'

  - Built-in, out-of-the-box **reporting customization** tools

Benefit

- Traceability
  => Transparency
  => quickly establish and maintain trust in process, method, and data

- Out-of-the-box
  => ease-of-use

IBM Planning Analytics Solution for Allocations and Profitability Modeling

Business Challenge	IBM Planning Analytics Solution	Benefit

Business Challenge

- Scalability and Performance, i.e.

- 'I do not want to wait a day or longer…'

- 'Can I process and analyze the data within reasonable timeframes?'

IBM Planning Analytics Solution

- The IBM Planning Analytics Solution employs parallel allocation processing algorithms
  => ultra-fast processing

- The IBM Planning Analytics Solution employs TM1's multi-threaded query engine
  => ultra-fast query & analysis

- How fast?
  - Customers are using the solution for allocations processing and analysis of around 1 Billion records per month, in just a few hours!
  - Processing speeds have reached up to 30,000 transactions per second per CPU => using 16 cores, that equates to over 1.7 Billion transactions / hour

Benefit

- Efficient Operation, without being 'tied-down' by excessive processing times

IBM Planning Analytics Solution for Allocations and Profitability Modeling

Business Challenge		IBM Planning Analytics Solution		Benefit

Business Challenge

- Budgeting, Forecasting, Planning

- What-If Analysis

- Evaluation of new allocation methods and/or drivers

- Scenario Management

IBM Planning Analytics Solution

- A 'Version' (or 'Scenario') dimension is a core component of the allocations and profitability modeling solution, allowing allocations/profitability modeling for forecasts, plans, etc.

- What-If scenarios can be evaluated using
  - Different allocation methods or drivers
  - Different allocation base (cost/revenue) data
  - Different organizational structures

- General changes, improvements, and adjustments to for example 'actuals' allocations can be evaluated in a test/evaluation scenarios, and then be applied to 'actuals' once validated and approved.

- Built-In Scenario Management

Benefit

- Ability to test and evaluate 'Actuals' procedures, without needing a separate environment

- Efficient integration of other FP&A processes

- What-If Pricing, Costing, Profitability extends into strategic business planning

IBM Planning Analytics Solution for Allocations and Profitability Modeling

Business Challenge		IBM Planning Analytics Solution		Benefit

Business Challenge

- Data- and Model-Security

- Workflow Controls

IBM Planning Analytics Solution

- Pre-configured default security roles
- Model-centric security
- Roles are by (sub-)model:
  - Allocation Model Admin,
  - Allocation Model Workflow Admin,
  - Allocation Modeler / Allocation Model Analyst,
  - Allocation Model Reader
- Application Admin (System Admin)

- Ability to lock allocations (prevent re-running), by scenario and month
- Ability to lock configurations (allocation rules), by scenario, month, step (cycle), rule
- Allocation Configuration (rule) change logs

Benefit

- Fast Deployment => Cost Savings

- Compliance with company regulations and controls

IBM Planning Analytics Solution for Allocations and Profitability Modeling

Business Challenge

- Runtime Statistics

- Capacity Planning

- Error Analysis & Technical Troubleshooting

- Technical runtime optimization

- Upgrades ("I'd like to upgrade, but I do not have time to re-test and re-validated all my processes…")

IBM Planning Analytics Solution

- An allocation statistics module provides detailed information on data volumes (sources and targets), processing time, etc., by allocation sequence, step, and rule.

- A 'dry-run' processing mode allows evaluating allocation configurations for their impact on expected runtime and data volume, prior to actually running the allocation

- A capacity planning module provides estimates on expected memory / data volume growth over time

- Verbose allocation debug logging is provided to troubleshoot allocations at the transaction level

- Parallel processing workloads are configurable; partitioning utilities are available for optimizing the distribution of parallel processing workloads

- Main allocation processing algorithms and procedures support 'Dynamic Versioning': different models may be run on different versions; versions may be 'hot-swapped' => upgrades can occur by (sub-)model, and incrementally, as needed

Benefit

- Built-in runtime optimization features result in lower operating cost

- Built-in 'under-the-hood' troubleshooting capabilities result in faster error analysis and generally high reliability

- 'Dynamic Versioning' allows being very agile in adopting new features and functionalities => increased efficiency

IBM Planning Analytics Solution for Allocations and Profitability Modeling

Business Challenge		IBM Planning Analytics Solution		Benefit

Business Challenge

- Documentation

- Fixes and Enhancements

- Guidance

- Training

IBM Planning Analytics Solution

- Detailed technical documentation, continuously updated

- Detailed documentation of fixes and enhancements, by object and process

- Documentation contains guidance and proven practices for allocation cube modeling, model design, and operation, by use of examples and detailed explanations of processing logic etc.

- Self-guided tutorials cover all aspects of modeling and configuration, from
  - Integrating source data
  - Modeling
  - Configuration of allocation models
  - Defining allocation rules
  - Running Allocations
  - Validating allocations
  - Interpreting trace and lineage models
  - Viewing and interpreting allocation statistics

Benefit

- Transparency of functionalities, features and related guidance => self-sufficiency, allowing business users to become 'solution-experts'

IBM Planning Analytics Solution for Allocations and Profitability Modeling

Business Challenge

- On-Premises vs. Cloud Deployment

- Hybrid-Cloud Compatibility

IBM Planning Analytics Solution

- Solution is available / supported on
  - On Premises
  - Non-IBM Cloud (AWS, Azure, GCP, Oracle, etc.)
  - IBM Cloud (PA SaaS)

- Hybrid-Cloud data and process integration (on prem to cloud, cloud to cloud, on-prem to on prem, …)

Benefit

- Solution infrastructure may move and growth with a company's data- and systems-infrastructure and infrastructure strategy

IBM Planning Analytics Solution for Allocations and Profitability Modeling

Business Challenge	IBM Planning Analytics Solution	Benefit

Business Challenge

- Self-Service Analysis

- Collaboration

- Dashboarding

- Desktop and Excel* Integration
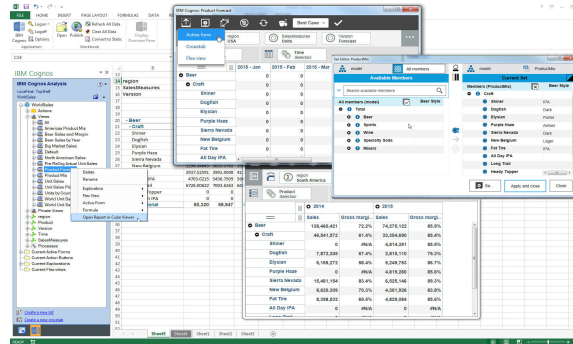
*:Excel matters; it is still the most pervasive and important tool of the financial analyst and it is not going anywhere…

IBM Planning Analytics Solution

IBM Planning Analytics Workspace

Rich interactive workspace

Natural language discovery & manipulation

Pin to share & reuse

Collaborate with Colleagues via Chat

Organize into multi-tabbed workbooks

Streamlined Navigation between Books

Synchronize Views, Charts and Websheets within a Book and Book-to-Book when you navigate

IBM Planning Analytics for Excel

Benefit

- Productivity by ease-of-use and simplicity

- Leverage advantages of web-based, collaboration-centric workspace where applicable

- Leverage advantages of Excel where applicable

IBM Planning Analytics Solution for Allocations and Profitability Modeling

<u>Solution Fact Sheet</u>

IBM Planning Analytics for Allocations & Profitability Modeling

IBM Analytics Business Solution

Faster time to outcomes.
Faster time to value.

Overview

The **IBM® Planning Analytics Solution for Allocations & Profitability Modeling** leverages an Allocations Engine based on proven, IBM-developed Allocation Algorithms, combined with modular Plug&Play Modeling Assets to

- allow the deployment of comprehensive financial allocation, costing, & profitability solutions
- within a matter of days to weeks
- without requiring IT (TM1) development skills
- at a lower TCO than traditional profitability modeling solutions

With a configurable and scalable allocation engine at its core, and leveraging the capabilities of TM1's in-memory multi-cube architecture, the solution allows combining the flexibility of a traditional financial allocation process engine with the (financial & procedural) transparency of an activity-based profitability modeling approach

Modern Profitability Modeling with IBM® Planning Analytics

Traditional Allocation solutions either implicitly derive allocation rates via the defined allocation procedure(s), or require the allocation % to be input directly into the allocation procedure line items. In the first case, where allocation % are implicitly derived, the allocation logic and cost breakdown is hidden in the metadata behind the allocation instruction. The allocation process and underlying business logic hence suffer from a lack of transparency and often become 'unwieldy'. In the second case, where allocation % are directly entered, the cost breakdown becomes more transparent, yet the possibly high number of required allocation instructions still cause a lack of transparency. Due to the lack of transparency, traditional cost allocation process solutions are only viable for use by highly trained and experienced Financial Analysts, and often limited to use within the context of a financial close cycle. Traditional cost allocation processes are not well suited for ongoing, activity-based costing purposes & pricing exercises: While it is conceptually possible to achieve 'activity-based costing' through a traditional *cost allocation process*, the underlying costing approaches will stay hidden behind the allocation metadata: the allocation process essentially becomes an abstract interpretation of the costing methodology.

Activity-based costing methodologies on the other hand provide transparency into the costing methodologies, approaches and concepts applied (because rates are derived based on 'activities'). Via rate management & analysis capability, insight is provided into the costing approaches taken (which activities drive cost and how? How should a costing rate be derived, i.e. what are its data-drivers?) and their effects on profitability as measured by the business. Activity-based costing – which by nature requires transparency - is therefore typically achieved via a rate-based costing approach & model. Yet rate-based costing models cannot be easily applied to determine and analyze related causes and effects on a larger scale (such as a financial close cycle or to analyze outcomes or restructuring changes).

An actionable, activity-based costing approach hence should be based on cost rates and an underlying data model that manages the process from setting the rate logic to the rate calculation and analysis. Such a Rate-based costing model can then very effectively be leveraged by a cost allocations process for scenarios where cost is not directly aligned with the cost drivers: in the presence of a rate-based costing methodology and a corresponding solution that provides transparency into the costing methodologies, the allocations process needs to be able to

simply 'pick' up the rate(s) that are to be applied to an allocation cycle. Rather than interpreting the costing methodology, the allocation process directly applies the costing methodology. The outcome is a transparent and simpler allocations process, driven and supported by a transparent and comprehensive rate-based costing solution.

Traditional Allocation Methodologies:

- derive allocation rates via the defined allocation type, like 'by % of Sales'
- input the allocation % to be used directly into the allocation procedure configuration line items.
- Key Costing data will stay hidden behind the allocation metadata: the allocation process essentially becomes an abstract interpretation of the costing methodology.

Activity-based Profitability Modeling (Activity-based Drivers and Rates):

- derive allocation (costing) % and $ rates from a rates engine / calculation process and feed rates into the allocation model
- provide better insight into costing/pricing approaches taken (which activities drive cost and how? how should a corresponding costing rate be derived?) and their effects on profitability as measured by the business.
- Higher financial and procedural transparency => better suited in a Business Economics context (for ongoing, activity-derived, operational as well as strategic profitability analysis).
- Rather than being an abstract interpretation of the costing methodology, the allocation process here

directly *applies* the costing methodology. The outcome is *a transparent and simpler allocations process, supported by a transparent and comprehensive activity-based profitability modeling approach.*

Core Solution Features

- **Waterfall allocations**, with unlimited number of allocation cycles and instructions
- **Modeling & Configuration by End-users** (no TM1 development skills required)
- **Out-of-the box support for standard allocation & apportionment methods.**
- **Integrates with existing Planning Analytics models**
- **Rapidly Integrate external fact-, master-, & metadata**
- **Cube/model-specific allocations**
- **Traceability**: Automatic Creation and Update of
  - Validation Modules (to analyze over/under)
  - Allocation Trace & Narrative Modules (allocation transactions by source, target and offset line items, allocation target transaction 'narrative')
  - Allocation Lineage Modules: analyze and filter allocations by allocation type, driver, sources, targets, offsets, etc.
- **Fast performance & high scalability**: leverage parallel allocation processing algorithms & multi-threaded query engine for the speedy processing and analysis of millions to billions of records
- **Allocation Processing Statistics & Verbose Logging**
- **What-If Profitability Modeling**
- **Traditional and activity-based (driver-based)**

profitability modeling

Solution Package Components

- Allocations & Profitability Modeling Engine, Modules, Objects,
- Allocations Web User Interface,
- Self-Paced training course for Allocation Modeling and Configuration
- 80 hours of IBM Expert Services for Knowledge Transfer, Implementation Assistance, Guidance, & Support

Support

- Standard SW support for the **IBM® Planning Analytics Solution for Allocations & Profitability Modeling** is covered by standard IBM Planning Analytics Support agreements.

Solution Package Pricing

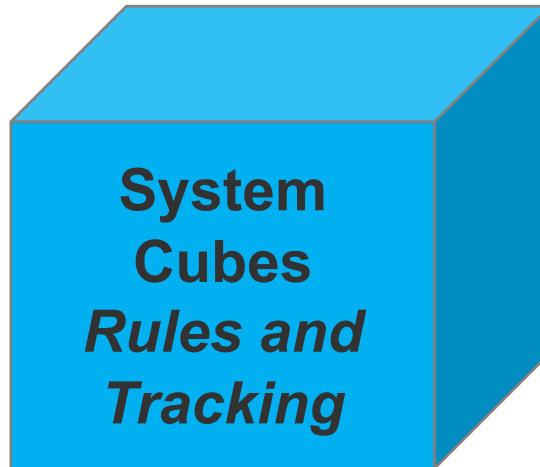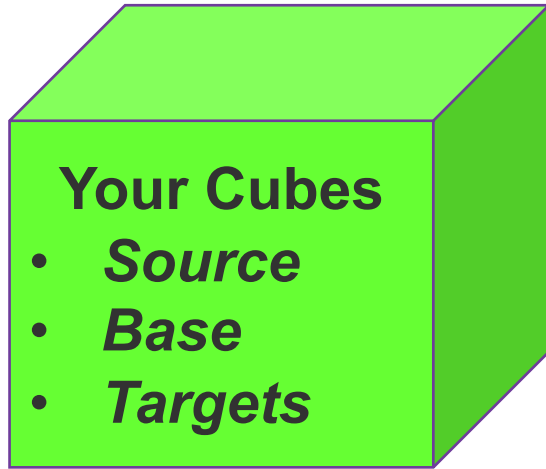- Please contact your IBM representative for pricing details

Target audience

- Finance Departments & IT stakeholders

IBM Planning Analytics Solution for Allocations and Profitability modeling:
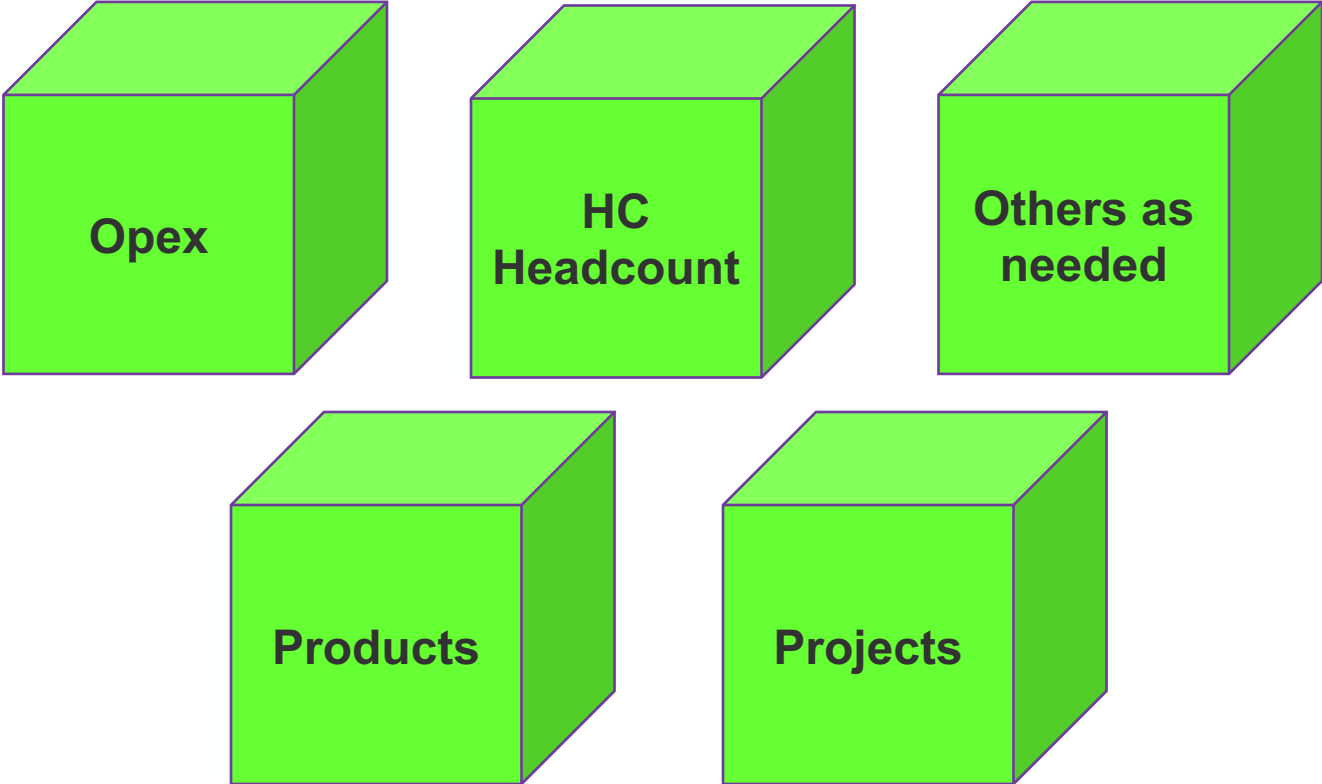
How it works

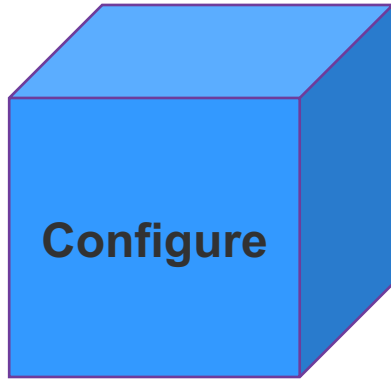# IBM Planning Analytics Solution for Allocations and Profitability Modeling: How it works

Your Cubes
- *Source*
- *Base*
- *Targets*

System Cubes
Rules and Tracking

Allocation Cubes
Reporting, Tracing

IBM Planning Analytics Solution for Allocations and Profitability Modeling: **Your Cubes**

Opex

HC Headcount

Others as needed

Products

Projects

IBM Planning Analytics Solution for Allocations and Profitability Modeling: **System Cubes**, for Allocation Rules Configuration, Tracking, and Workflow
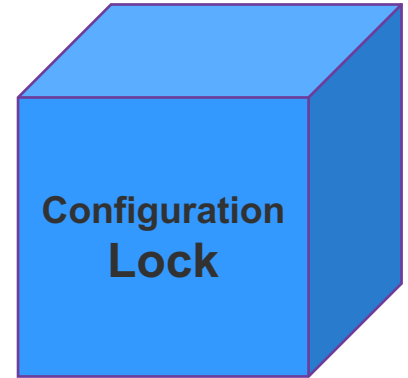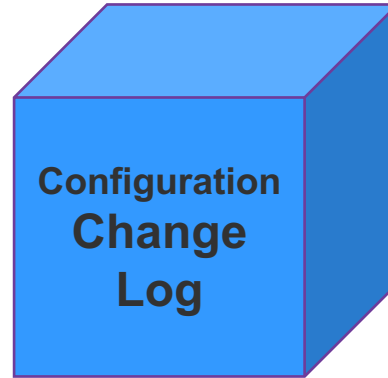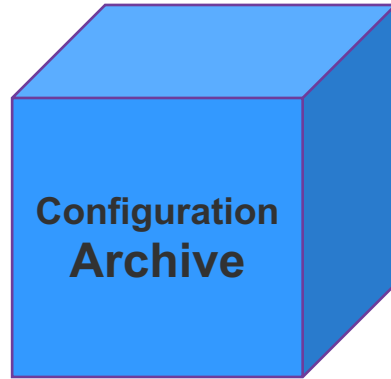
Configure

Configuration Archive

Configuration Change Log

Configuration Lock

IBM Planning Analytics Solution for Allocations and Profitability Modeling: **System Cubes**, for Allocation Rules Configuration,
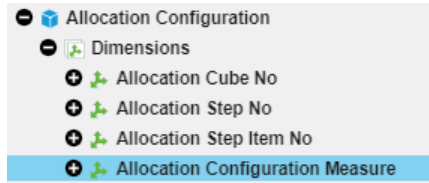
- Define the allocation Step and Item.
- Pre-built Excel/Web based interface.
- Allows Steps to be copied, moved and deleted.
- Define the following
  - Source
  - Base including Version/Time
  - Target
  - Method

IBM Planning Analytics Solution for Allocations and Profitability Modeling: **System Cubes**, for Allocation Rules Locking and Archiving

Allocation Configuration - Archive
- Dimensions
  - Allocation Cube No
  - Allocation Step No
  - Allocation Step Item No
  - Version
  - Time Period
  - Allocation Configuration Measure

- Allows rules to be archived by time period and version
- Excel/web based interface to allow movement of rules from archive cube and configuration cube.
- Setting allows rules to be run from either archive cube or configuration cube.

Allocation Configuration - Archive Lock
- Dimensions
  - Allocation Cube No
  - Allocation Step No
  - Allocation Step Item No
  - Version
  - Time Period
  - Allocation Configuration Lock Measure

- Allows archive configuration cubes to be locked in various levels of detail.
- Below the all step and all items are locked.
- Prevents configuration cube from being able to update archive configuration cube.

Process: **Allocations - Archive Configuration**
-> archive 'Allocation Configuration' data to 'Allocation Configuration - Archive'

Version	Actual	required (leaf level)
Allocation Cube No	00FTOpEx Allocations	required (leaf level)
Allocation Step No		optional -> all Allocation Step No's
Allocation Step Item No		optional -> all Allocation Step Item No's
Archive Period	201305	required (leaf level)
Update Cycle Tag To Cube And Step Mapping	Y	required Y is default

Archive Current Configuration

Process: **Allocations - Restore Configuration from Archive**
-> restore 'Allocation Configuration' from Archive in 'Allocation Configuration - Archive'

Version	Actual	required (leaf level)
Allocation Cube No		required (leaf level)
Allocation Step No		optional -> all Allocation Step No's
Allocation Step Item No		optional -> all Allocation Step Item No's
Archive Period	201305	required (leaf level)

Restore Configuration from Archive

IBM

Allocation Configuration - Archive Lock

Refresh

Allocation Cube No	00FTOpEx Allocations
Version	Actual
Time Period	201801

All Steps	All Step Items	
Step #	**Step Item #**	**Status**
All Steps	All Step Items	Locked

IBM Planning Analytics Solution for Allocations and Profitability Modeling: **System Cubes**, for Allocation Rules Change Log

Allocation Configuration - Archive Change Log
- Dimensions
  - Allocation Cube No
  - Allocation Step No
  - Allocation Step Item No
  - Version
  - Time Period
  - Allocation Configuration - Archive Change Log Time
  - Allocation Configuration - Archive Change Log Measure
  - Allocation Configuration Measure

- Track changes when configuration cubes is archived.
- Excel/Web based interface to see changes.

Allocation Configuration - Archive Change Log

IBM

Refresh

Allocation Cube No	00FTOpEx Allocations
Version	Actual
Time Period	201801

from: Wednesday, June 13, 2018
to: Wednesday, August 08, 2018

Step #	Step Item #	Date & Time	Measure	Old Value	New Value
6	5	2018-07-09 07:22:43	Rate	HeadCount	Trades
6	5	2018-07-09 07:22:43	Allocate to Dimension 2 Source Elements	N	Y
6	5	2018-07-09 07:22:43	Allocate to Dimension 4 Source Elements	Y	N
6	5	2018-07-09 07:22:43	Allocate to Dimension 5 Source Elements	Y	
6	5	2018-07-09 07:22:43	Dimension 2 Target Elements	All CA Except HR	
6	5	2018-07-09 07:22:43	Dimension 4 Target Elements		201801-Perks

IBM Planning Analytics Solution for Allocations and Profitability Modeling: **Allocation Cubes**, for Allocations, Validation, Tracing, and Reporting & Analysis
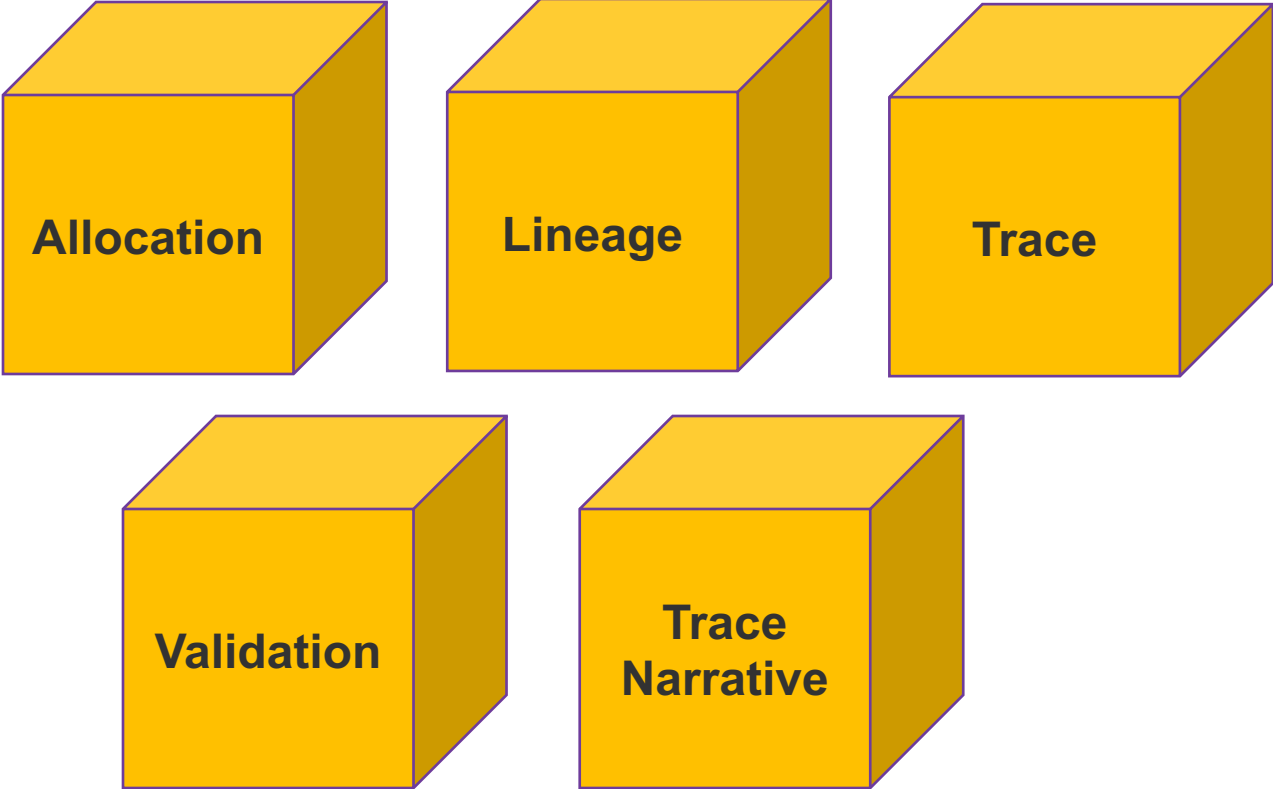
Allocation

Lineage

Trace

Validation

Trace Narrative

IBM Planning Analytics Solution for Allocations and Profitability Modeling: **Allocation Cubes** and **Allocation Validation Cubes**
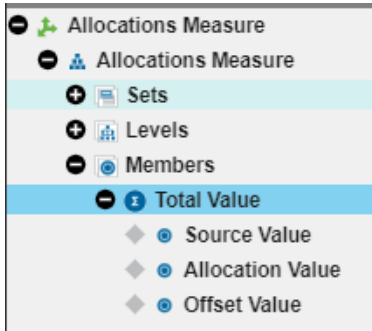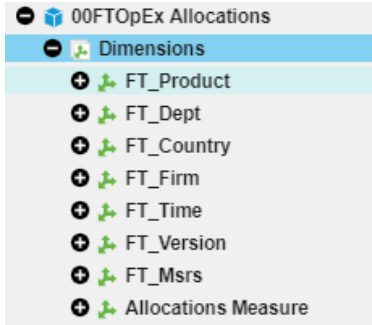
Allocation processing is broken into steps and items (= rules):
- There can be an unlimited # of steps
- There can be an unlimited # of items (rules) in one step.

Allocation Cubes:
- When allocations are run they are processed and placed here.
- As one step is running, allocation value and offset value are populated with values from each item in the step.
- As a step is completed it will collapse the total value into the source value and zero out the allocation value and offset value.
- Allocation Cubes are optimized for fast allocation processing

Allocation Validation Cubes:
- Contain a snapshot of allocations by allocation step, allocation target value, allocation source values and allocation offset values
- Allow for quick validation of allocation steps at a higher level, by comparing sources to targets and offsets
- Can be used to restore allocations to a prior step/state to apply new allocation rules to a subsequent step

IBM Planning Analytics Solution for Allocations and Profitability Modeling: **Allocation Trace** and **Trace Narrative Cubes**

- Tracing of allocations per step and step item
- Allows us to see the movement of the data as each step and item are run.

- In addition, tracks the rules that were applied during the Step and Item

		Total Value	Source Value	Allocation Value	Offset Value
1	1	$90,000.00	$90,000.00	$0.00	$0.00
	2	$0.00	$90,000.00	$0.00	($90,000.00)
	3	$0.00	$90,000.00	$0.00	($90,000.00)
	4	$0.00	$90,000.00	$0.00	($90,000.00)
	5	$16,800.00	$90,000.00	$16,800.00	($90,000.00)
2	1	$16,800.00	$16,800.00	$0.00	$0.00
	2	$0.00	$16,800.00	$0.00	($16,800.00)
	3	$0.00	$16,800.00	$0.00	($16,800.00)
	4	$0.00	$16,800.00	$0.00	($16,800.00)
	5	$1,728.00	$16,800.00	$1,728.00	($16,800.00)

IBM Planning Analytics Solution for Allocations and Profitability Modeling: **Allocation Lineage** (who gave how much to whom and where/when and why?)

- The Allocation Lineage model tracks allocation data by
  - Allocation Targets
  - Allocation Sources
  - Allocation Offsets
  - Allocation Step
  - Allocation Step item (rule)
  - Allocation Methodology
  - Allocation Driver
  - Version (Act, FCST, Plan, What-If …)
  - and Time

- This subsequently very granular allocation traceability data hence satisfies the most stringent allocation/profitability/costing/pricing model reporting needs

- For easier reporting, Allocation Step (Cycle) tags and Step Item (Methodology) tags are assigned when defining steps.
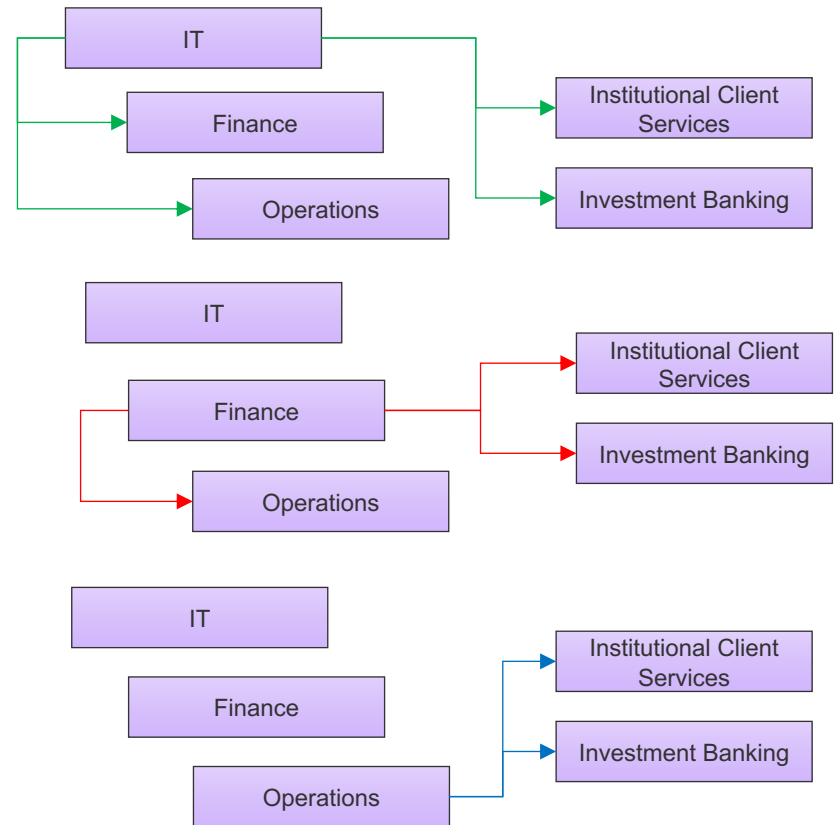
IBM Planning Analytics Solution for Allocations and Profitability Modeling: Sample Architecture

Main Model: Profitability Cube

Three Allocation Sub-models for **procedural transparency and efficiency/speed**:

- Activity Allocations (including Shared Services allocations)

- Product/Client Profitability

- Product Detail Profitability