Financial Consolidation with IBM Planning Analytics[1] (TM1)

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Readers who understand well the nuances of Financial Consolidation can probably skim this section or skip right to the section "Where does Planning Analytics Come In?".

But for those who are less familiar with the subject, some background detail may be helpful. Financial Consolidation is a fiction. In truth, showing a single income statement and balance sheet for a company as if it were a single entity operating, worldwide in a single currency is a very important and meaningful fiction but a fiction nonetheless. Let me explain why. Consider a company such as Apple. Apple trades in virtually every country in the world. It has companies (legal entities) in most, if not all countries where it does business. Each of those companies keeps its own set of books, in its own local currency, and perhaps using local principles of accounting. An investor in Apple (or any other party with an interest in understanding Apple's finances) looks at a set of worldwide consolidated financial statements to gain insight. Apple, as a publicly traded company in the USA must file quarterly and annual consolidated financial statements or reports with the Securities and Exchange Commission. To achieve this, it must consolidate the financial statements of all of these companies in order to present the view of Apple as a consolidated worldwide entity – a single consolidated income statement, balance sheet, cash flow statement and supporting schedules. These many consolidation steps tend to abstract the data somewhat and determine certain valuations on internal transactions, hence what we are calling a fictional view of the whole.

The most basic part of consolidation is adding up the numbers from all of the subsidiary company books to produce consolidated numbers. However, each company records its books in its own local currency. It would make no sense to add Euros, Dollars and Yen together. So, each company must be translated into a common reporting currency before the accounts can be meaningfully added together. Simple as it sounds, even currency translation is not that straightforward an operation. Assets such as cash can be translated at the current exchange rate, but assets such as an investment in the subsidiary that happened 20 years ago may need to be held on the consolidated balance sheet at the historic rate at which it was first booked. The profit and loss (P&L) accounts or income statement occurs over a period of time and is typically translated at the average rate for the period. And finally, the books need to be balanced in reporting currency by calculating the overall impact on the books of the currency translation since rates typically shift every period. This balancing value is known as the Cumulative Translation adjustment (CTA for short).

Even when all the accounts have been translated into a common reporting currency, adding them up may still yield incorrect results. For example, Apple may design a product in California, pay for it to be produced by a contractor in China, and sell it from an operation in Ireland. This

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[1] IBM Cognos TM1 was rebranded as IBM Planning Analytics, but is still referred to occasionally as TM1.

means that there are many transactions between different companies that are all owned by Apple and consolidated together to form the consolidated financial statements. For example, Apple USA may buy that shiny new iPad from Foxcon in China for $300, sell it to Apple UK for $500, which then sells it to a company in Ireland for $600 who sells it to the consumer for $800. If we were to consolidate the three sets of books (China, UK and Ireland, it might look as follows: -

	China	UK	Ireland	Consolidated
Sales	500	600	800	1,900
Cost of Sales	300	500	600	1,400
Gross Margin	200	100	200	500

The true ultimate sale for Apple worldwide is the $800 the consumer paid for the iPad. If we simply add up the sales from all the companies we will add the $800 in Ireland to the $600 in the UK and $500 in the U.S. and overstate sales in total by $1,100. In order to correct this, we need to do an elimination of the $1,100 that is an intercompany sale. We post this adjustment to an elimination company[2] as shown below: -

	China	UK	Ireland	Eliminations	Consolidated
Sales	500	600	800	(1,100)	800
Cost of Sales	300	500	600	(1,100)	300
Gross Margin	200	100	200		500

Intercompany sales are but one example of adjustments that need to be made before the consolidated numbers accurately reflect what Apple would truly look like if it were a single company operating in a single currency worldwide. Other types of eliminations and adjustments include intercompany payables and receivables, investment in subsidiaries, profit in inventory purchased from sister companies, and many more.

The key component of a company's accounting is the trial balance. The trial balance[3] represents the balance on every single account in the general ledger of the company at a point in time. It reflects the state of a company's balance sheet at a point in time and the income and expense over a period of time. Because all accounting entries consist of debits and credits the trial balance has a unique property that it must balance – the sum of the debits equals the sum of the credits.

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[22] An elimination company is added to the structure to hold this entry because it does not belong in the books of China, UK or Ireland which are correct as stand-alone entities.
[3] The term trial balance dates from the days when ledgers were kept manually and the balances were extracted from each account to try to get them to balance!

In order to consolidate the books of multiple companies, the starting point is a trial balance - from each company. As noted above, if these trial balances are in different currencies they must be first converted to a common reporting currency. Once this is done the trial balances can be added to produce a consolidated trial balance. Since each of the individual trial balances is in balance, the consolidated trial balance is also in balance.

In processing the adjustments and eliminations such as the intercompany eliminations described above, it is important that the accounting integrity (the data being in balance) is preserved. To do this all adjustments and limitations are processed as accounting journal entries where the sum of the debits always equals the sum of the credits. In other words, each journal entry must balance.

Once these accounting eliminations and adjustments have been posted, a full set of financial statements (P&L, Balance Sheet, supporting schedules) can be produced from this consolidated trial balance.

Where does Planning Analytics come in?

Those who are familiar with Planning Analytics (PA) or TM1 can probably skip forward to the section on ControlWORQ.

Planning Analytics (formerly known as TM1) is an extremely powerful aggregation, modeling, and reporting tool. PA manages data in cubes which are defined by dimensions. Typical dimensions in a consolidation application might include accounts, cost centers, companies, versions, currency and time. Other dimensions might be segments or products. Dimensions define not only the items in each dimension but their hierarchies as well. For example, the accounts dimension might define accounts for Sales and Cost of Sales as well as Gross Margin which is defined as Sales minus Cost of Sales.

In the example below you can see the P&L starting with Revenue External Customers and going all the way down to Net Income.
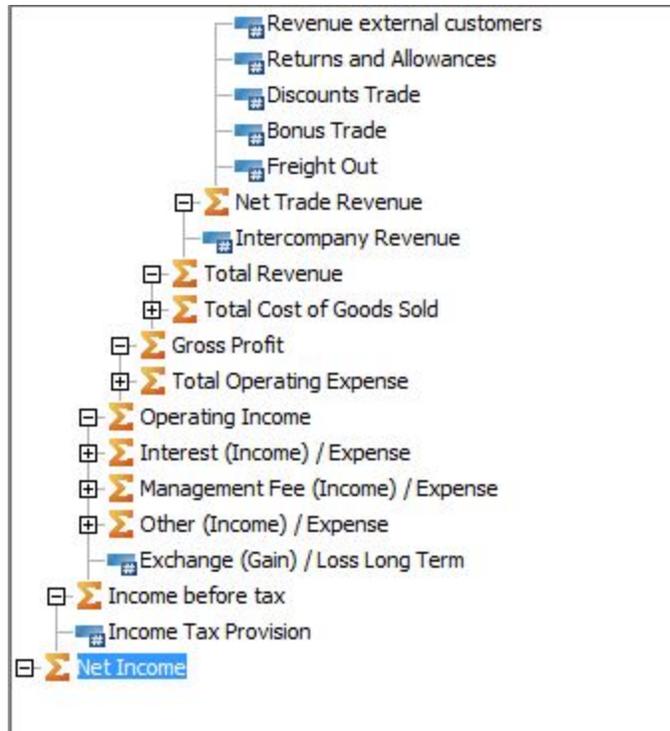
The Balance Sheet is also part of the Accounts dimension, as are typically any non-financial or statistical accounts such as Headcount, Shares etc.

The Companies dimension will include all the legal entities in the consolidation as well as the consolidation hierarchy. Elimination entities will typically be added at each sub-consolidation node (posted to the respective elimination company at that level) to accommodate elimination and consolidation entries. When new companies are added, it is as simple as adding them to the dimension. All the data immediately and automatically recalculates to accommodate the new company.
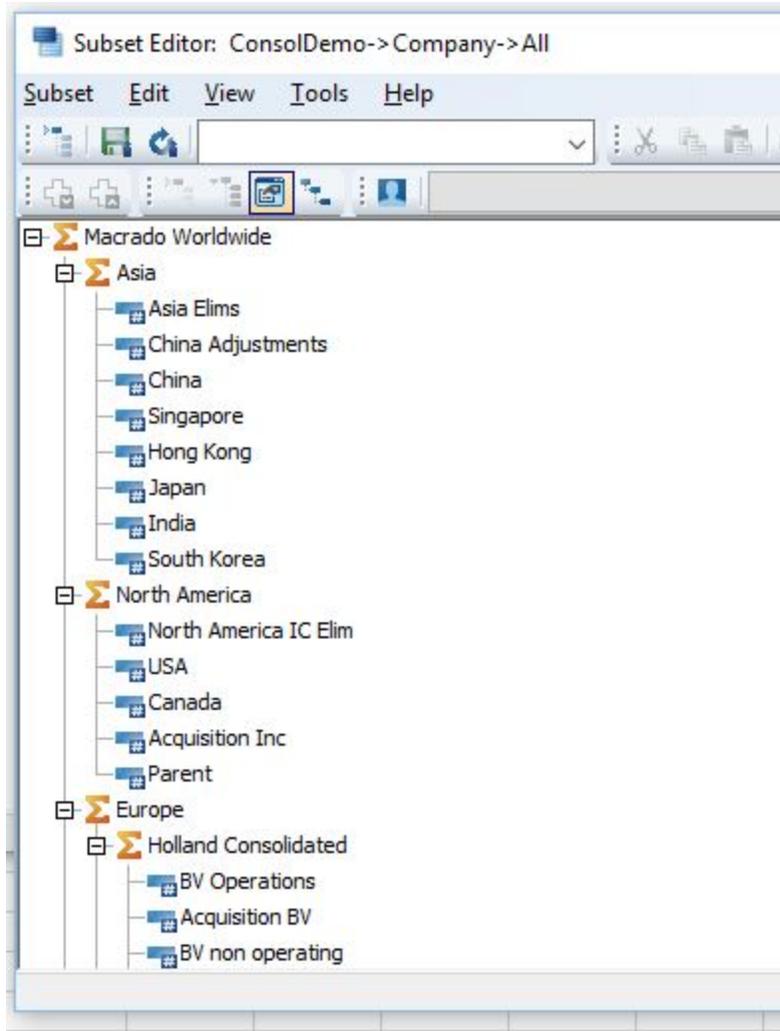
PA can accommodate many hierarchies so multiple management hierarchies can be used as well as legal hierarchies.

PA can perform Currency Translation by embedding the logic in the cube. The rules defining acceptable currency translation practices in the US are defined by the Financial Accounting Standards Board (FASB). FASB 52 as codified in the 2009 Codification says, in summary, that income statement accounts are translated at the average rate for the period, most balance sheet accounts are converted at the period ending exchange rate and certain balance sheet accounts (primarily equity accounts) are held at the historic rates prevailing when they were first booked. The resulting translation adjustment caused by the income statement and the historic accounts is held on the balance sheet in the Cumulative Translation Adjustment (CTA) account which is included as part of the Equities section of the balance sheet. The PA rules logic capability makes fast work of this non-trivial task of converting trial balances from local currency into one or more reporting currencies. Local Currency data is entered into the local currency element in the dimension below.

Furthermore, this translation happens in real time – adjust local currency numbers and reporting currencies (in the example above, both USD and EUR) are immediately updated, including immediate CTA recalculation. PA's inherent fast, real time aggregation and formula calculation easily presents consolidated results for hundreds or even thousands of legal entities, all in real time.

PA can aggregate millions of numbers in milliseconds so results can be examined and reports run almost instantaneously after data has been loaded. Its rich rules logic capability can process sophisticated, multidimensional, calculations extremely fast. Its many, flexible reporting and dashboard options allow fast, accurate and timely reporting and analysis.

QueBIT ControlWORQ

ControlWORQ from QueBIT is a software application that supplements PA in order to allow it to perform all aspects of a multinational financial consolidation.

ControlWORQ understands the accounting needs of consolidation. It adds capabilities on top of PA's calculation and reporting abilities. Specifically, ControlWORQ provides

- Balanced journal entries with audit trails and approval hierarchies to track all elimination, consolidation and adjusting entries.
- Automatic generation of intercompany eliminating entries.
- Excel add-in allows calculation of standard journals such as profit in inventory and minority interest to be automated.
- Secure, audit trail of all adjustments in an easily reported format.
- A standard set of PA rules which perform currency translation (FASB 52 as codified in Accounting Standards Codification 830) including multiple reporting currencies.
- Consolidation status report showing the up to date status of the consolidation at any time.