Allow the use of pre-aggregated and granular tables within a single data connection

I'm Lead Tableau Develop and Tableau Server Admin for a large retailer. Tableau's lack of a semantic layer (such as SAP Business Objects Universes) is proving a real issue for us. The use or pre-aggregated tables is a common data warehousing trick and despite certain limitations I think the performance benefits that can be leveraged mean that it is still relevant today.

What I would like is a means for Tableau to determine whether to query the most granular data source, or whether it can instead query a smaller aggregated data source, which will return the data significantly faster. This would be determined by the dimensions dropped into the worksheet. Although I am thinking of this in terms of live connections to a data warehouse the principles could easily be applied to Tableau Data Extracts, perhaps with inbuilt functionality to create and refresh the pre-aggregations. (We have a Netezza data warehouse server, if you're not familiar with these they are epically powerful and significantly out perform TDEs.)

The issues that this will address are:

- Users constantly querying granular tables results in longer query times for the user and increased load on the sever.
- Having pre-aggregated data tables as separate connections means the user is required to consider the level of aggregation they wish to view before they can begin their analysis.
- This in turn means explaining the concepts of data aggregation to people who just shouldn't need to know about these things.
- If a user select an aggregated data source and then finds themselves wishing to drill to a smaller granularity they will have to switch data connections, which is a bit clunky.
- Also a straight switch of data connection will apply to every worksheet in the workbook, so it is more likely that they will have to rebuild individual sheets against a more granular data source, which is time consuming and frustrating.
- Having the pre-aggregated and granular tables all exposed as different connections creates a large and slightly baffling array of data sources, with each one needing more explaining as to what it contains (i.e. we have "Sales (Transaction/Qtr Hour/SKU)" and "Sales (Branch/Day/Department)" as separate data sources when we could just have "Sales".

To date we have not found a solution to this that we are happy with and I cannot see us investing further in Tableau unless we find one.