Oracle’s New In-Memory Value Chain Planning Applications

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Summary
On July 18th, Oracle officially released its new in-memory supply chain planning (SCP) applications.

“In-memory” has become a marketing buzz term, but the concept is not new to supply chain practitioners. Many supply chain planning applications run planning models in-memory and then write the output back to a non-volatile storage for further analysis and execution by planners. While technology advancements have fostered an emergence of new in-memory capabilities, Oracle’s approach to in-memory applications for supply chain planning is unique.

A Different Approach
When most SCM suppliers speak of their new in-memory capabilities, what they are primarily referring to is querying analytic data that resides in a computer’s memory, as opposed to querying data that is stored on physical disks. This results in vastly shortened query response times, allowing business intelligence (BI) applications to support faster business decisions. This is very useful when multiple reports and analyses need to be conducted by different teams to support business-critical supply chain processes such as the sales & operations planning process. Many of these reports may need to be generated quickly to support executive queries and ad hoc analysis with simpler and more intuitive visualization. In-memory analytics to support this real-time data visualization represents a significant step forward. Ora-
cle and other SCM suppliers have provided new in-memory solutions for this purpose.

However, the primary differentiator for Oracle’s new value chain planning applications is the use of in-memory to support faster and more scalable planning. When you consider that almost all SCP applications run in-memory anyway, it is fair to ask how this is a differentiator? It matters because the new Oracle In-memory Value Chain Planning applications are being engineered to be ten to twenty times faster than their existing SCP applications, which were already considered highly scalable. This performance jump is made possible because Oracle In-Memory Applications can leverage the multiple processors, DRAM and Flash memories, and high speed communications of Oracle Engineered Systems. The new Oracle Value Chain Planning applications on Oracle Engineered Systems offer users significantly reduced data latency, massive reduction in data flows, much faster running of plans, and much faster complex query performance to improve the end-to-end planning process. Because this is a new release, Oracle does not yet have users who can confirm this step change in scalability.

Why Does Faster Planning Matter?
We have entered a world where many companies are trying to differentiate their supply chain performance based upon becoming demand driven. Demand-driven companies use downstream data – POS, data from distributors, and from other sources – to understand true consumer demand. In the past, most companies used primarily historical demand to forecast at the warehouse level. Now, companies are increasingly attempting to do their forecasts at the SKU store level. This results in a data explosion that most existing demand management applications struggle to handle and prevents most companies from leveraging the available downstream data. This step change in planning scalability allows these companies to become demand driven by leveraging their downstream insights to run a more efficient supply chain. On the demand side, Oracle’s new solution is called Oracle In-Memory Consumption-Driven Planning.
Oracle has also released a new supply planning application called Oracle In-Memory Performance-Driven Planning. As businesses go global and become more complex, traditional solutions hit scalability limits. Oracle In-Memory Performance-Driven Planning enables new business flows and possibilities - single global plan, multiple plan runs in a day that in turn enable multiple shipment schedules etc., all of which can result in large cost savings.

There’s another business case that Oracle may be able to more fully exploit in the future. On the supply planning side, it is not unusual to see companies use three different supply planning applications: plant sequencing and scheduling, factory planning, and multi-plant planning. The scheduling application provides answers in the shortest planning horizon and provides the most detailed plan when considering all factory constraints. The multi-plant planning solution would generally work over the longest time horizon and is not concerned with detailed plant constraints, but rather looking at higher level constraints and demand in order to have the optimum factory work on factory orders.

The problem is that these different, overlapping applications can get out of synch. When this happen, the shorter planning horizon solutions tend to be used to plan production, but the optimization opportunities from the longer range plans become less and less feasible. In the future, ARC Advisory Group envisions that these more scalable in-memory supply planning applications would all be combined into one platform that does a much better job of staying in synch.

From Oracle’s perspective, we doubt the company will want to supply customers three applications for the price of one. But the advantage for customers would probably be faster implementations for expanded capabilities, and plans that span different scopes and horizons that stay more in synch.

Finally, it is worth noting that using in-memory to increase planning speeds versus using in-memory to improve analytic capabilities, are very different technical problems. Oracle has tackled both sets of issues in developing the new solution.
Conclusion

ARC was excited when different SCM suppliers introduced in-memory SCM packages that provided a significant improvement in analytics capabilities. Oracle’s solutions do this as well. Where Oracle is differentiated is on a much greater focus on improving planning scalability and reducing end-to-end planning cycle time, something that is increasingly important as companies struggle to become demand driven.

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