NUCLEUS RESEARCH

SEVEN STEPS TO PICK THE RIGHT IO TOOL

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THE BOTTOM LINE

Inventory optimization (IO) software has a high-impact for return on investment (ROI) as it reduces inventory, freeing up working capital, and boosts service levels, leading to fewer stockouts and increased sales. To make sure that a company purchases the right IO tool for the business from a vendor and gets the desired payback from the investment, a supply chain chief should consider taking the seven steps listed below when selecting this application.

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BUSINESS PURPOSE

Companies have turned to inventory optimization solutions as a way to set precise stocking levels for thousands of stock keeping units (SKUs) in their supply chain. For companies running complex supply chains with customers and suppliers across the world, IO tools have become an essential application for supply chain management.

Before a supply chain manager contacts IO vendors, he or she needs to first determine what's the primary business reason for buying the tool. Is the tool needed to reduce inventory to free up working capital? Or does the company need to ensure that it has the right amounts of inventory and inventory mix on hand to support sales and drive revenue? Does the company have a problem with maintaining stock to address growing volatility in the market? Or does the company want to keep the right parts in stock to reduce expediting costs and provide a more level signal to production scheduling? Or does the company have twin goals: inventory reduction plus better service.

Very few IO vendors have a broad enough solution to address all of the above. Because inventory requirements vary by industry, some vendors focus their solutions on retailers while others concentrate on manufacturing or wholesale distribution. If the company is retailer, for instance, it needs a retail-centric functionality. That holds true for manufacturing or wholesale/distribution as well. Moreover, some solutions are designed to handle intermittent demand, in which requests for either a part or product occur infrequently. These solutions handle both fast and slow movers in a single model. With a fixed purpose in mind for the IO, a supply chain executive can ask the right questions to make certain that the vendor can provide what's needed.

BREADTH OF FUNCTIONALITY

Vendors should provide multi-echelon (MEIO) solutions as standard functionality, thus allowing companies to adjust inventory holistically across multiple locations in the supply chain. The solutions should also employ a stochastic model for inventory calculations, meaning that the application not only identifies the most likely outcome (the forecast) but also the implications of possible upper and lower limits of demand fluctuations.

To be effective the tool must be able to model inventory at the SKU level and by location. Granularity at the item level is critical to determine the precise inventory holdings by location to meet anticipated demand. Keep in mind that IO tools are really a form of predictive analytics, and the best-in-class tools are the ones that do the most accurate job of predicting the amount and type of stock to carry at each location. Generating high-level predictions and then smoothing them to the individual SKU-location level will not get the job done right.

Since the key to IO is modeling the supply chain accurately, if that's not done right, a company won't get favorable results, no matter how many features and functions can be found in the tool. Supply chain executives should not get caught up in the old way of buying transaction-based software – with long detailed lists of feature and function requirements along with vendor responses.

TEST DRIVE BEFORE THE BUY

Before making a firm commitment for a solution, a company should do a "test drive." A company is essentially buying a model of its supply chain. The supply chain team should test the solution to make sure the IO tool accurately reflects the company's supply chain operation. Keep in mind that an IO application is not a

transaction system. It is essentially a "predictive analytics" process; the results depend on the quality of the model in order to correctly predict service level.

A test drive, sometimes called a Proof-of-Concept (POC), involves providing actual data to the vendor and asking the vendor to validate the software's ability to build a working model of its solution. The data selected could be for a geography, a product line or some representative portion of your business.

The test drive does not have to be an elaborate affair. The supply chain team charged with inventory management can compare competing solutions either with a conference room pilot or a technology bake-off. Vendors should be given actual company data for the trial. Take a significant portion of items from the company's inventory and ask the vendor to run its model to set inventory levels. Then compare the vendor's test scenario with what actually happened. The test should be substantial enough to verify the sustainability of the process and the scalability of the solution.

The vendor should be able to show that its tool would have matched inventory settings close to real item demand. The test should offer proof that the solution can indeed improve service levels and minimize stock, thus offering a clear indication as to whether the company will get a payback from the investment. Be aware that any vendor can promise impressive service and inventory benefits. The real question is this: can the vendor's solution deliver solid results?

Not only does the test drive provide proof of the vendor's marketing claims, it can build confidence in the solution from the supply chain planners who must trust the mathematical outputs every day.

Although outside consultants can be helpful with this process, supply chain executives need to be careful. Consultants have been known to be stuck in the "feature/function" methodology they were familiar with from the past in using big transaction systems like Enterprise Resource Planning (ERP).

CRUISE CONTROL

Once the IO solution is set up and running, the supply chain planners should not have to fiddle with it. Optimized inventory models are rather complex and not very intuitive, especially when optimizing across either a wide range of products or upstream and downstream in the supply chain (e.g., postponement). It's important that the IO tool provide an automated solution so that the planners can use the output of the tool to focus on exceptions from plan or problems.

Companies should use the "test drive" described earlier to determine whether the solution under consideration for purchase is sustainable. A sustainable solution should allow the business to scale up, handling additional it as the business grows or changes, or the supply chain operation becomes more complex. In short, the solution should automatically and continuously adjust a variety of conditions and changes without constant manual intervention.

EASE OF USE

A challenge for IO vendors has been making their tools easy for supply chain planners to use in their daily jobs. Although many of these tools offer a high degree of functionality with sophisticated algorithms, planners still need to understand the application and the results. For instance, they need to be able to define their "service policy" (target service levels for classes such as high margin products), so the IO system can translate service targets into inventory targets.

Leading vendors should offer a graphical user interface (GUI) that allows a user to grasp visually the intent of "what if" scenario settings. In addition, the tool should come with dashboard analytics, a grouping of widgets in a console that allows the user to spot key metrics at a glance. As is the case with a car operator, a supply chain planner doesn't need to manage the minute by minute inner workings of the engine but he or she still needs to be alerted to unusual conditions that require intervention.

CLOUD DEPLOYMENT

IO solutions were originally designed for deployment on corporate servers. But in the age of cloud computing, where an application can be hosted and accessed from the Internet, it may make less sense for a company to buy a software license and install the software on premise.

Nucleus Research has determined that cloud solutions get a 1.7 X greater ROI than on-premise applications. That's because cloud solutions do not bear additional costs for installation, hardware systems, integration, maintenance, and provide for configurability in setting up the solution to a company's specific business needs rather than having to undertake custom coding. Companies may also save considerable amounts of money by purchasing the cloud software on a subscription basis rather than laying out a huge sum of money upfront for a license. When reviewing providers of an IO solution, make sure that the vendor offers a cloud version as not all do.

TRAINING SUPPORT

Companies that are most successful with IO tools dedicate individuals or teams of individuals to operation of the application. In fact, based on study of supply chain managers, Nucleus Research has found that 56 percent of companies having dedicated users for a supply chain tool received their desired ROI compared to only 33 percent of companies without distinct users.

In order to develop skilled tool operators, the vendor must provide thorough training and high level of support to the supply chain staffer. The vendor should be able to provide consistent support to the IO tool user in the company in order for him or her to gain the mastery required. Companies should ask the vendor for user references to validate claims of after-sales support as the level and amount of that support should be the decisive factor when presented with IO solutions with the same functionality, friendliness and payback.

CONCLUSION

Selecting the right IO provider ensures that the company will get a payback on the software investment in less than a year. Depending on the business purpose for the purchase, companies should receive direct benefits such as a decrease in excess or safety stock, increased profit margins through closer alignment with customer demand, and improvements in service levels that win customer loyalty. Indirect benefits from the right tool include increased employee productivity, improved production scheduling, reduced customer turnover and profit increases from stocking improvements.

The numbers from IO are substantial. Nucleus has found that when deployed correctly, inventory optimization can reduce stock holdings between 10 and 30 percent. It can also increase service levels without adding to inventory or bring about a combination of inventory and service level improvements. Payback generally occurs between six months and one year. Companies that follow the seven steps increase the likelihood of selecting the right IO tool for their business and achieving a payback on the investment within a year.