Demanding More from the Supply Chain: Demand Solutions DSX

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Introduction: The Supply Chain Gap

Living in the global economy is a challenge for companies of any size, and recent business trends have only added to the complexities faced. Shrinking product lifecycles, increasingly complex supply chain and rising customer demands have all led to the need for more accurate forecasts. The impact of globalization, which has led to increased lead times for both supplier and customer, make it especially hard to be a thriving manufacturing or distribution company in the global economy of today.

Staying on top of demand, accurately planning production and inventory, and optimizing the sales and operations planning process have become not just best practices, but in most cases matters of absolute necessity. The companies that are able make the right decisions can lower their overall costs while improving their profitability, customer satisfaction, and competitive positioning. Those that can’t make the right decisions put themselves at risk for failure, or worse.

Further exacerbating the problem is the fact that the underlying complexity of their manufacturing and distribution systems is often growing, not shrinking, through the impact of globalization, merger and acquisition, and a host of other factors. Companies of all sizes can have multiple manufacturing systems, complex product and distribution requirements, and Global 1000-sized planning requirements. Getting a handle on planning, forecasting and S&OP in the context of this complexity is no easy task. Taking their business management processes to the next level by implementing a more integrated business planning function is even harder.

One of the problems facing companies trying to manage these often-conflicting requirements is that, while there have been considerable advances in the supply chain planning and decision-making technology, their technology choices have been surprisingly limited. On the one hand are supply chain planning solutions that, while generally effective, tend to be very expensive to implement and are complex and ill-suited for all but the very largest companies. On the other hand many companies have relied on lower-cost, simpler alternatives – from spreadsheets to older-generation mid-market planning tools – that have proven to be unable to keep up with the dynamic supply chain and business climates they are supposed to help manage.

Demand Solutions, Inc., a 28-year old supply chain planning software and services vendor based in St. Louis, MO, recently brought to market a new supply chain planning product, DSX, designed precisely to fill the gap between overly large and complex enterprise solutions and the relatively low-tech or no-tech solutions that desperately need a refresh. Demand Solutions asked Enterprise Applications Consulting (EAC) to review the product and talk to customers about its usefulness in addressing the myriad issues confronting manufacturing and distribution companies today. The result of EAC’s review shows a product that is very well suited for solving this growing supply chain problem, particularly for companies that are running complex ERP systems, have multiple ERP solutions, or some combination of the two.

In particular, DSX is adept at supporting a range of supply chain management processes for its customers, including sales and operations planning, forecasting, vendor-managed inventory, and
replenishment, among others. Those companies that are beginning to look at a more integrated planning function, one that can combine previously siloed planning functions under a single functional umbrella, will find DSX to be a good starting point. The fact that it is based on Microsoft’s .NET architecture and can run in the Microsoft Azure cloud is another important capability noted by customers. And the overall functionality in DSX also allows customers to leverage specific DSX capabilities for supporting workflow management, social/collaborative supply chain management, and lead time management, as well as offering cloud deployment options and advanced business intelligence.

This report summarizes EAC’s findings and discusses how DSX can help a broad range of companies overcome the limitations in their current technology and business processes.

Living and Thriving in the 21st Century Supply Chain

It’s clear that any company trying to thrive in the 21st century supply chain has encountered a fundamental problem endemic to enterprises of all sizes: how to improve planning and forecast accuracy in the face of an increasingly complex, time-sensitive, and globalized supply chain. This relatively straightforward problem is made up of a number of key components, all of which tend to conspire against simple solutions and easy fixes.

The problem with improving forecast accuracy is that it requires a carefully orchestrated process that collects information and data from a wide range of sources and stakeholders, some inside the enterprise and some outside, and uses those data to produce the best possible forecast for a given product or product line. The production of that forecast in turn depends on the collaboration of a set of decision-makers and influencers – from supply chain planning to sales and marketing to retail or distribution partners – who may work in widely disparate parts of the enterprise or operate completely independently, as is the case with partners and customers. Finally, that forecast must be acted on and that action must be timely and easy to undertake, whether the action is to create a long-range strategic plan or the next day’s MRP run.

While this has always been the case with supply chain forecasting, the complexity and pace of the business market in the 21st century has made these issues even more acute. The stakes have never been higher, the margins for error smaller, and profit margins across the supply chain thinner and more vulnerable to cost overruns and error. The pressure and need for excellence have never been greater.
Figure 1: The 21st Century Supply Chain

The quest for excellence in supply chain planning and forecasting isn’t just about getting the forecast as accurate as possible, though that is clearly a primary goal. Accurate plans and forecasts are a process, not just a result, and being able to produce excellence in forecasting means being able to analyze greater amounts of information more quickly and in as many different ways as possible. That means that the technology used must be able to deliver greater flexibility, usability, and speed than has been possible in the past.

When done right, an accurate forecast and its business process become the foundation for a wide range of benefits that cascade throughout the enterprise and the supply chain, all the more so if part of a formal plan to implement integrated business planning (IBP) across the organization. A company that excels at forecasting can also excel at vendor-managed inventory and replenishment. It can more nimbly respond to changes in the supply and demand window. It can handle rapid and frequent changes in product mix and plan effectively for new product introductions and product end-of-life. It can reduce inventory and overall costs. And a single, highly optimized forecast can help companies overcome the management obstacles that come from having multiple ERP systems.

The benefits of supply chain excellence extend beyond the company and its financial performance as well. Supply chain excellence also improves customer service and customer satisfaction, and provides better coordination between partners and the myriad stakeholders, inside and outside the company, that impact or are impacted by the forecasting process. In short, the incentives for improving supply chain performance have never been more widespread and important than they are today.
THEORY MEETS REALITY: DEFINING THE SUPPLY CHAIN GAP

The problem with this vision of supply chain excellence is that it quickly runs into the limits of reality at many companies, be they manufacturers, distributors, sourcing companies, or marketing companies. The reality is that all too often these companies don’t have the right software – for many, the default tool is the spreadsheet – nor do they have the right processes or the right people involved in their planning and forecasting processes in order to optimize the 21st century supply chain.

Figure 2: The Default Tool for Supply Chain Management

The reality is that all too often these companies don’t have the right software – for many, the default tool is the spreadsheet, which has changed little in the last 20 years.

Source: Marcin Wichary, www.aresluna.org
Those companies that have moved beyond the spreadsheet still find themselves bedeviled by overly complex, monolithic supply chain and ERP software products that are hard to learn to use and even harder to adapt to changing requirements. Many companies also have multiple ERP and supply chain systems, and this makes it difficult to create and implement a single, optimal forecast. Moreover, their existing software vendors make it hard for them to modernize key supply chain processes such as sales and operations planning without implementing new, complex, and expensive software that has to be integrated into their existing systems.

Figure 3: Supply Chain Stakeholders – 20th vs. 21st Century

Finally, the current state of supply chain technology for most companies fails to enable the broadest possible range of stakeholders to be involved in planning and forecasting. (See Figure 3.) Usability is typically low, the user experience confusing, and the ability to adapt the supply chain process to the specific needs of an individual company and its employees is limited. The result is that the collaboration necessary for supply chain excellence is largely impossible to achieve.

As we shall see in the next section, this set of problems is exactly what DSX was designed to fix.

DSX and the Customer Experience

The problems of thriving in the 21st supply chain are driving considerable change in how companies look at their supply chains, as well as the software tools they use to drive this change. EAC’s interviews with DSX customers show the impact of these issues and the results that DSX can provide in terms of optimizing key supply chain processes, from forecasting and planning to S&OP and vendor-managed inventory.
DRIVING COLLABORATIVE S&OP AT GATES CORPORATION

Gates Corporation’s experience with DSX mirrors the 21st century’s impact on supply chain planning and forecasting. For Gates, a global manufacturer of power transmission and fluid transfer systems, the impetus started with the need for improved forecasting and better sales and operations planning. “But the company’s use of multiple ERP systems had to be factored into the plan of how to achieve that goal,” said Seong Kim, IT project manager at Gates’ headquarters in Denver, CO.

“After the recession hit, we knew we needed a better forecasting tool,” said Kim. “We needed more emphasis on S&OP, and we needed to drive down inventory.”

The tools that the company had been using extracted data from the company’s many ERP systems and ran pretty much like a ‘black box,’ dumping results back into the ERP systems. This stymied collaborative planning and the company’s ability to understand how to improve its forecasting. “No one knew what the tool was doing,” Kim added.

With multiple ERP systems and a complex worldwide distribution system, processes like S&OP needed to be not only more effective, but also able to support greater levels of collaboration and “buy-in” from the many different groups involved in S&OP.

Those requirements put Gates on the hunt for a new solution, and its 10-year history of working with Demand Solutions made DSX an obvious contender. The company quickly found out that DSX fit well with their requirements. “We’re able to use the tool to better align our business with what is happening in the economy and get a better demand signal,” said Kim.

DSX has enabled a dialogue to take place in the company. It acted as a catalyst for us.

— Seong Kim, IT Project Manager Gates Corporation

DSX also helped Gates build its internal S&OP process. “Before DSX we didn’t have an S&OP group,” said Kim, who added that implementing S&OP entailed changing some internal thinking about the process of S&OP. “We did not want people to look at this as a project, but rather as a process that has to be performed on a day-to-day basis.”

By using DSX, S&OP has become a much more collaborative process than it was in the past. “The biggest improvement was having the different areas come together and realize that there was a need for global S&OP,” said Kim. “DSX has enabled a dialogue to take place in the company. It acted as a catalyst for us.”

A major reason for the success of DSX comes from the flexibility it provides planners and other stakeholders in the S&OP process. “We can sort and aggregate, and slice and dice it to a level that we feel is more suitable for creating a forecast,” said Kim, who added that there are more than three million records in the database Gates is using with DSX. The flexibility of DSX is also essential to keeping abreast of the evolution of S&OP at Gates, as well as changes in its product mix. “Every month we realize something might be done better,” Kim said. “DSX gives us the ability to make those changes.”

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BEAUTY AND HEALTH CARE MANUFACTURING: MANAGING COMPLEXITY AND IMPROVING VMI

For a U.S.-based beauty and health care products manufacturing company, greater flexibility in the planning and forecasting process was a key driver for using DSX. As a manufacturer of beauty and health care products primarily for private-label retailers, this company offers vendor-managed inventory as a strategic service to its customers. This service means it has to be able to anticipate fluctuations in demand for over four thousand health care and beauty products, many of which, like hand sanitizers, can experience significant seasonal changes in demand as, for instance, the flu season waxes and wanes.

Serving private-label customers also means that there is no way to shift product from one customer to another, said the director of demand planning and S&OP. “There is no way to do demand aggregation,” he added. “If a customer comes in heavy there’s no way to buffer against other orders.”

The descriptive fields were restricted in the old system. In DSX they can be anything. I usually look things up in DSX before I look at the ERP system.

— Director of Demand Planning and S&OP, Beauty and Health Care Products Manufacturer

While the company runs a major, top-tier ERP system that manages the bulk of its business, they needed a much more flexible and usable system than their ERP vendor was able to provide. The ability of DSX to give this company’s planners a greater range of choice in how demand is analyzed was a major plus for the company. “The old system was in monthly buckets, which we could then break down into weekly buckets,” explained the director of demand planning and S&OP. “With DSX we can alternate between both views. It allows us to go back and forth to make sure we don’t get spikes on a weekly level.”

This flexibility makes it easier to use DSX to look at production-level data than using the company’s ERP system. “The descriptive fields were restricted in the old system,” the director said. “In DSX they can be anything. I usually look things up in DSX before I look at the ERP system.”

The company also changes item numbers frequently for its private-label products, and this posed a problem for the old system to handle. In DSX, planners can copy the product history from an old item to a new one, and use that as the basis for planning the new item. “It’s a great starting point,” said the director of demand planning and S&OP. “As items go from old to new, DSX gives us a process for combining the history and seeing them merged in one place.”

The use of the Microsoft product stack in DSX was another big plus for the company. “The fact that it uses Microsoft SQL Server is itself a huge factor,” said the director. “We already use SQL Server in-house, so it made all the data I/O that much easier.”

At the company, the results speak for themselves. Their overall forecasting has improved 20 percent since it started using DSX, while VMI service has improved 30 percent. While other factors helped contribute to these improvements, the product “has
definitely been an important part of a series of things we did to improve service,” said the director of demand planning and S&OP.

BEVERAGE MANUFACTURING AND DISTRIBUTION: BETTER PLANNING AND FORECASTING THROUGH BROAD-BASED USER ENGAGEMENT

For one global beverage manufacturing and distribution company, expanding markets and seeking new business meant expanding the product line in terms of the number of items in the company’s product set as well as its production volumes. That expansion ran into obstacles – obsolete planning and forecasting processes running on outdated software.

The need for an improved planning process, however, wasn’t just a question of on-boarding some new software to replace its spreadsheet-based processing. It was important that a broad base of users across the company be closely engaged in the process, and that meant keeping an eye on ease-of-use as a selection criterion, said a supply chain manager at the company. “Our users know Excel reporting well, and use pivot tables extensively,” he said. “We wanted a way to bring forecasting and collaboration to the user in their own language.”

That made the overall ease of use of DSX – and its specific use of the spreadsheet user experience – a major factor in the company’s decision to go with the product. DSX’s familiar user interface meant that initial user acceptance was high, and training costs low. “We had to do very little training, because the users have a lot of experience with forecasting and Demand Solutions offered a product with a spreadsheet user interface,” said the supply chain manager. “It was a very natural upgrade for us to go to DSX.”

In addition to user acceptance and usability, the company realized that DSX would be much more cost-effective than trying to implement a similar planning and replenishment upgrade using the planning product offered by the company’s ERP vendor. “We needed an integrated system,” he explained. “But if you look at the complexity of our business, running a similar planning and replenishment process” using the ERP vendor’s product “would have required considerable financial and human resources,” the supply chain manager added.

The result is that DSX has widespread use among a disparate user base at this company. In addition to supply chain planners, DSX is used by national and regional sales managers who interact with the company’s retailers. Marketing also makes use of DSX, as do procurement professional and long-term planners on the manufacturing side.

Even with all these different users and use cases, DSX has brought much needed efficiency and speed to the forecasting process. “What used to take us three or four days we can now do in four or five hours,” the supply chain manager said. And the flexibility and speed of DSX means that the company can not only improve its
overall supply chain performance today, but it can also position itself to take advantage of new business and technology opportunities and challenges.

“We are a mid-sized business operating in a global world,” the supply chain manager explained. “We need to keep up with new mobile technology and keep track of an increasingly complex environment for our products. This is especially true for our carbonated soft drinks – the effects of weather, pricing, and promotions mean that if things change, we need to be able to quickly redo and reorganize to fulfill our customers’ needs.”

What these user examples showcase is a software product, DSX, that has been instrumental in helping companies adapt to new business realities and the new processes they need to implement in order to meet these challenges. In the next section we will look under the covers at DSX in order to understand how it serves these multiple purposes.

How DSX Does IT and Business

The success of DSX at the above and other customer sites can be attributed to three overarching capabilities of the software:

• A flexible user experience based in part on the time-honored spreadsheet user interface.
• Easy integration with back-office ERP systems.
• A technology infrastructure based on Microsoft .NET and Azure cloud services.

The flexibility of the DSX user experience has a number of key components. The first is the use of the spreadsheet user experience (see Figure 4). While not all functionality is accessible this way – nor should it be – the use of a spreadsheet-like experience, as noted above, makes it easy for companies to extend the functionality of DSX to the broadest possible user base. The fact that there are over 500 million Microsoft Excel licenses in the world means that virtually any user in any organization has had some exposure to a spreadsheet. This not only increases user acceptance, but also significantly lowers training costs.
The degree of user acceptance for DSX is further enhanced by the overall flexibility of the product in terms of what can be analyzed as well as how any individual’s screen can be configured. This has two important impacts: the first is that users are able to see the information they need in a format that they are most comfortable with, further enhancing user acceptance. The flip side of this capability is that information can be restricted based on the user profile, ensuring that sensitive data is only seen by those who have the authority to see it.

The second impact of the flexibility of DSX comes from the ability to configure the tool to show specific planning windows or aggregations of customer or product-level data as needed for a specific forecasting requirement. This provides a level of personalization that allows individual users to focus on their specific areas of interest, or a specific issue or problem, without having to sift through a massive quantity of canned reports and outputs.

The flexibility of the DSX user experience also lends itself to increased levels of collaboration. Individual forecasts can be shared among different stakeholders, who can change or annotate the information as needed. DSX can also use Microsoft Workflow to route a forecast among the stakeholders in order to make sure that everyone has been able to input their information and perspective into the forecast. This means that collaborators work within the same tool and use the same data. This vastly improves overall collaboration as well as providing an audit trail for decisions that are made based on the collaborative effort.
Demand Solutions DSX

BACK OFFICE INTEGRATION

The ability of DSX to provide a two-way communication channel with back-office ERP, planning, warehouse management, and other enterprise systems is another key component in the value of the product. Data can be uploaded from virtually any back-office system – from older ERP systems like Baan and JD Edwards, to the latest SAP and Oracle ERP systems – and the finished plan can be loaded back into the ERP system for the next day’s MRP run. DSX offers a variety of ways in which data can be moved back and forth – manually or automatically, using standard file formats or dynamic SQL. The design goal was to make it as easy as possible to get data in and out of DSX, and, based on the customers’ feedback, DSX has succeeded in fulfilling this requirement.

This integration capability helps solve a major problem for many of Demand Solutions’ customers: not only do they have multiple ERP systems, but even those using the same ERP software often have different versions running in their companies. In these cases, DSX can function as a single point of integration that helps companies overcome the complexity of their ERP environments while vastly improving the overall planning and forecasting function.

MICROSOFT-BASED

The choice of the Microsoft .NET architecture provides another significant advantage for DSX and its customers that goes well beyond just providing a familiar user experience to end-users. The Microsoft technology stack is well known across the enterprise landscape, and this allows implementers and IT departments to support DSX based on a strong degree of familiarity with Microsoft products such as SQL Server, Windows Communications Framework, Windows Presentation Framework, and the Microsoft Workflow Engine, among others. This familiarity provides costs savings in terms of both technical knowledge and license price. The Microsoft technology stack is generally much less expensive than comparable technologies, and, as it is largely pre-integrated by Microsoft, the overall total cost of ownership of the Microsoft stack, and by extension DSX, is significantly lower than for other comparable technology infrastructures.

This Microsoft connection also brings to bear the power of Microsoft’s cloud-based architecture, Azure, and opens up the ability for DSX customers to make use of Azure’s cloud-based services to stage their DSX implementations as Azure becomes more widely used. Demand Solutions was an early member of the Azure program and will be supporting DSX on Azure in a future release.

The bottom line is that DSX represents an important rethinking of the requirements for planning and forecasting that takes into account a combination of factors, first and foremost being the human factor, in terms of user acceptance and collaboration enablement on the business side, and simplicity, via the Microsoft stack, on the IT side. This makes for a product that has tremendous relevance in today’s global supply chain.
Conclusion: More Stake for the Stakeholders

It’s clear from this review of DSX and EAC’s conversations with DSX customers that the product fits nicely into the evolutionary trajectory of key supply chain processes such as S&OP or IBP, as they have moved from the background to the forefront of supply chain management and execution. The extension of planning and forecasting to a broader set of users and a complex set of back office systems was far too complex and costly to be accomplished with a previous generation’s set of tools. DSX reflects the value that is possible when new technology is applied to a changing business environment.

The fact that DSX can play this role is also testimony to the ability of Demand Solutions to evolve with the market and the needs of its long-term customers. That ability to stay on top of the changes in the market on behalf of the customer was noted by several of the companies interviewed by EAC and speaks well of Demand Solutions’ understanding of the overall supply chain market as well as the needs of its customer base. The addition of capabilities such as workflow, predictive lead time analysis, social SCM, cloud deployment, and advanced analytics to the original DSX are additional proof of the company’s focus.

The factors that have led to this massive change in the supply chain – global recession, the globalization of demand and supply, and the requirement for more user-friendly software – are part of a never-ending cycle of change. Demand Solutions’ DSX is proof the company understands its own role in the success of its customers – for example, the S&OP process that it enables is not a project but an on-going responsibility. DSX is an excellent example of how Demand Solutions is meeting that responsibility for its customers.