

The Great IT Debate

A person in a white lab coat is shown from the chest up, holding a balance scale. They are using a small spoon to add a substance to the left pan. The scale is tilted, with the right pan being lower, indicating it is heavier. The background is a soft, out-of-focus white.

It's best-of-breed versus supply chain suite versus ERP in supply chain solutions: How will your company decide?

By Chris Norek, Ph.D.

If you have been doing any reading of supply chain literature, possibly the most confusing area in supply chain management will be determining which, if any, supply chain software solution will be best for your company. A challenge in the technology space that compounds the problem is the use of hundreds of buzzwords that often make it hard for people to decipher exactly what is being offered. Significant confusion results, especially when the same term is adopted by different companies and it has a different definition or variation in each.

Another confusing factor is the current argument over which type of supply chain solution provider makes the most sense: “best-of-breed” versus “supply chain suite” versus enterprise resource planning (ERP) solutions with supply chain functionality. There have been countless articles and white papers arguing the merits of each. But after all the reading and research, are you more confident or just more confused?

This article is intended not to choose a “winner” out of the three types, but rather to offer some key points to evaluate what might be the best option for your company, as well as to provide insight on some of the factors in the decision-making process before identifying specific solution providers.

Setting the Stage: Operational Functionality Addressed in Supply Chain Software

Before taking a look at the types of software companies, the following is a list of some of the supply chain “point solutions,” or specific functionalities, that might be included in the various software options:

- Procurement Solutions — aid in the selection and buying process of indirect and direct materials. Might include auctions or links to online catalogs to improve purchasing efficiency
- Demand Management — forecasting and inventory management at

- an operational level (hourly, daily or weekly planning)
- Warehouse Management Systems (WMS) — scheduling and management of product, personnel and equipment within distribution centers
- Transportation Management Systems (TMS) — help in most efficient routing, scheduling, vehicle utilization and carrier selection
- Supply Chain Event Management (SCEM) — also can be referred to as supply chain visibility. These solutions focus on tracking and tracing of products across various supply chains both in transit and in distribution facilities

(Note: More strategic software solutions like network strategy analysis and multi-echelon inventory planning are not covered in this article. Such software is more analytical and would be performed on a periodic basis, e.g. monthly or yearly. This piece focuses on those solutions that would help make decisions on an hourly, daily or weekly basis.)

Types of Software Companies

- *Best-of-breed*

“Best-of-breed” companies focus on particular niches like WMS, TMS or SCEM as stand-alone solutions. Their model is to create depth within a particular functional area. Typically, the best-of-breeds have the most robust and deepest functionality for the particular supply chain solutions in question. The challenge that the niche companies’ face, however, is bridging the gaps between various solutions (supply chain and others), whether they are internal systems or external, that must tie into partners’ systems. To ensure their survival, the best-of-breed providers have had to build interfaces to all the major supply chain solutions and ERP solutions. In other words, they have created “hooks” to pull data from and send to other systems.

- *Supply Chain Suite*

Supply chain suite software companies are the next step up the “integrated solution offering platform.” These firms try to offer a “full suite” of supply chain planning and execution tools to their clients. They might try to integrate applications from e-procurement and forecasting to warehouse planning and transportation to offer a broader solution set than the “best-of-breed” companies. The challenge with the suite companies is not the link between the supply chain tools, because they are built in, but rather the linkage to the back-office functions like financial planning, where a significant part of supply chain data originates (order management systems, etc.). Most, if not all, of the suite companies have evolved from being niche suppliers early on in their histories and have either developed internally or purchased additional functionality to expand their offering and “footprint.”

- *ERP with Supply Chain Applications*

Enterprise requirements planning (ERP) systems focus on the integration of financial and productivity systems within a company. They are the “backbone” of a company’s application solutions environment. When implemented, the firms that offer the greatest capability for immediate capitalization on the concept of integrated supply chain solutions are the ERP vendors with a supply chain platform. This is because the back-office functions are already tied to the order management and financial processes and the rest of the supply chain inclusive of all links and entities, allowing key data to be available. A supply chain platform handling planning and optimization, transportation management, warehouse management and supply chain event management exists with the ERP vendors.

Out of the hundreds of supply chain software companies across the three types, which one is the best for your company? The answer is, as always, “it depends.” It depends on your current and future needs, the capabilities of your people, your current and future operations and systems environment, the capabilities of the software companies, and, of course, cost. The combination of all of these factors determines how your company might perceive the “best” value of a software solution.

System Integration: The Largest Hurdle?

A key factor in the technology arena that is often given too little attention but that causes significant problems is back-end systems integration. This is the “heavy lifting” in technology implementations. Most companies and their software suppliers misjudge this step, resulting in implementation cost overruns, significant stress within the implementing company, and animosity between the software supplier and customer. No system is easy to link to another system, but integration can be made easier and less costly. Detailed, upfront investigation into the required links and data “hooks” will identify problems in advance and allow more accurate cost and time estimates.

To compete in the future it is important to consider how compatible the underlying technology platform is with all internal and external systems. ERP systems have a distinct advantage over the others because of their underlying architecture in platform integration — often the most underestimated and underappreciated part of a software implementation and rollout. In addition, the ERP solutions have a fully integrated back-office suite that complements supply chain planning and execution. However, supply chain offerings are being made more robust by building service-oriented architectures (SOAs) into the various suites. In addition, best-of-breed and supply chain suite solutions, as mentioned, have built

“hooks” and links into other supply chain point solutions, supply chain suites and ERP systems to increase their viability. To be viable, all best-of-breed solutions and supply chain suite companies that sell subset solutions have to be able to link into all possible complementary solutions.

Using software that has its own “backbone,” or integration architecture, will also make this task easier. Integrating into a single platform significantly reduces the time and cost of implementation. Software with service-based architectures that use a Web platform as an integration point allows total integration to occur more quickly.

Service Oriented Architecture: A Key Decision Maker?

A way to ease the pain of integration is the use of service-oriented architecture. SOA allows “plug and play” of various applications into a central “backbone” without the traditional issues of significant hard coding to enable data transfer between applications. SOA is a form of distributed architecture with emphasis on “loose coupling” and business semantics for interfaces.

There are two SOA options to help ease supply chain solution integration. The first option is to build your own SOA and then select specific applications to “plug” into your system. This obviously requires a skilled IT staff to plan and implement an internal SOA. For those companies that would prefer to keep the size and fixed investment in technology and people to a minimum, purchasing a supply chain suite solution or ERP with an existing SOA is the second and most likely the best option.

Considerations for Executives Overseeing the Supply Chain Solution Decision

There is no best solution across all companies; since each company has different core business competencies, hardware and software platforms, levels of software automation desires and budget priorities, a separate analysis really is needed for each company. However, the following are issues that all executives should consider when their organization is selecting software solutions:

1. Have your team improve the processes before looking at technology — This is not an IT issue, but it will allow any IT implementation the potential to be successful. Although it seems trite, it can't be emphasized enough: don't speed up inefficiency by automating current processes. Without fixing the processes first, it is almost impossible to successfully implement a supply chain software

solution. *Remember: Technology is only an enabler, not a cure-all.* In addition, it is important that the solution you select has processes that mirror the way you execute operational processes.

2. Ensure that business folks are teamed with IT folks on the solution selection team — Many times the availability and accuracy of data are assumed by executives and business folks, but data capabilities should be understood by working with the IT people.
 - a. There needs to be an understanding of how all the current and desired systems do/will work together.
 - b. Make sure the executive team is aware of the current system's drawbacks.
3. Decide which type(s) of solution you might want to investigate — Best-of-breed versus supply chain suite versus ERP with supply chain applications. In fact, you might choose two or even all three depending on your current internal IT and operational capabilities and future needs.
 - a. This might require you to work with other IT users in the organization, like finance or accounting, who also might benefit from improved back-office solutions that supply data to supply chain solutions, including order management.
4. Determine your desired functionality prior to meeting with representatives from the software companies.
5. When you do bring in software companies to “show their wares,” definitely ask for a demonstration using some of your data. In addition, ask the software company to let someone from your team “drive” the demonstration by inputting data into the various parts of the screens. This ensures that the demo is “flushed out” and keeps only specific inputs and their results from being viewed.
6. Make sure your systems align with those of your supply chain partners to ensure the easiest implementation.
 - a. This will require you to share your IT plans with your business partners.
7. Based on your budget and timing for the solution, you might want to consider an ASP type solution where you can pay by transaction or time period, which is sometimes referred to as renting the solution or “by the drink.” If you are looking at a longer term solution with many transactions, the traditional option of buying the license might make sense.

Selecting a Provider: The First Steps

The following are the steps to consider in the best-of-breed versus supply chain suite versus ERP with


supply chain applications selection process:

1. If your company doesn't have an ERP solution in place:

- Look at all functionality required across the company, including financials, customer relationship management, supply chain, etc., to see if an ERP solution might make sense for you. If it does, include some of the supply chain functionality you desire in selecting the ERP solution. If the capability doesn't exist, then add best-of-breed solutions to your potential list. If you need multiple types of supply chain solutions, add supply chain suite companies to your list of potential vendors.
- If you don't have an ERP system already, it is rare that a company would buy a supply chain solution that is a part of an ERP vendor's suite. However, certain ERP supply chain solutions are starting to be configured so they can be "standalone" applications.
- If you need leading-edge functionality in a particular area, the best-of-breed solution will probably be best for you. If you need deep functionality in several supply chain areas, you should probably consider the supply chain suite because your total price for the software would be less than if you purchased individual solutions separately.

2. If you have an ERP solution in place:

- If you have implemented or definitely will implement an ERP solution and have found that you only need 60 to 80 percent of the functionality of a best-of-breed for particular supply chain solutions, you will probably be happy with the supply chain solution of the ERP vendor your company has chosen. Traditionally, the ERP players haven't put leading-edge functionality into their supply chain applications; however, this is also changing rapidly. As the ERP vendors have seen the need and importance of robust supply chain applications, significant investment has occurred to upgrade their functionality to compete with the best-of-breed and supply chain suite vendors.

In the confusing world of supply chain technology, solution selection should be easier if you enter into the decision-making process armed with some key factors to consider. This discussion covered some key issues regarding general supply chain IT decisions, and specifically the factors that will weigh in the balance when your company is trying to choose between best-of-breed versus supply chain suite versus ERP systems with supply chain applications. Remember, there isn't a single answer, but you can make your decision easier and your resulting implementation successful if you do your homework in advance. 



HOW TO BEGIN THE SELECTION PROCESS

Rank the following in terms of importance to your company's decision. Based on that ranking, you will be able to better decide which type of solution out of the three is best.

- Level of functionality desired in each functional area (transportation, warehousing, tracking, etc.) – Is your logistics spend significant in relation to company revenue or compared to other cost centers?
- Ease of integration
- Current hardware platform – Do you have a very experienced and sizable IT support staff?
- Current software platform
- Company risk factor – Are you a leading-edge supply chain company that implements new ideas before others (e.g. early adopter)?
- Competitive advantages of your business
- Budget availability
- Company growth plans

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