January 2005

Supply Chain Planning Technology – Making the Right Decision Between ERP and Best-of-Breed

A Research Report

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Table of Contents

Executive Summary

In the past two years, the market for supply chain planning software applications such as demand planning, inventory planning, and production scheduling has been roiled by the increasingly aggressive efforts of ERP providers, especially SAP and Oracle, into application areas that have been traditionally dominated by "best-of-breed" providers.

Users are caught in the middle, with a changing decision environment and a lack of clear information to help guide the decision process.

To help provide clarity to this critically important issue, SupplyChainDigest conducted a major study of the ERP versus best-of-breed supply chain planning market. This report is based on 79 detailed survey responses from many of the world's leading corporations. This survey data was supplemented by extensive one-on-one interviews with dozens of supply chain executives and industry thought leaders.

The result is the most comprehensive report and analysis of this issue that has been compiled to date. The results and recommendations are detailed in the main body of this document.

In summary, users clearly rate best-of-breed solutions substantially superior to ERP applications in such areas as functionality, ease of use, domain expertise and overall value. Ratings are closer in such areas as software quality, software support and software cost. Importantly, these ratings in best-of-breed's favor are actually magnified for those respondents that have fresh and detailed knowledge of the differences between each type of solution.

> *In developing its ERP versus best-of-breed SCP report, SupplyChainDigest surveyed 79 leading companies and spoke with dozens of supply chain/ logistics executives and industry thought leaders.*

It is also clear from the research that companies must recognize and address several critical issues related to this process:

- The continued misalignment of IT and operations/business functions around the ERP versus best-of-breed issue.
- Estimating the "true" costs of integration for both ERP and best-of-breed alternatives.
- The disconnect that often exists between corporate executives and supply chain leaders on the importance of logistics and supply chain execution.
- A failure to truly focus on the achievement of business objectives as the driver of the selection process.
- Frequently poor and frustrating software evaluation and selection processes.

As part of this report, SCDigest has developed an evaluation framework that we are confident can lead to substantially improved decision-making between ERP and best-of-breed. If followed, it will enable companies to make an improved evaluation between ERP and best-of-breed alternatives by: including a cross-functional perspective; focusing on true business objectives and actual ROI and TCO; using a more objective, fact-based approach; and having a bias towards vendors that have proven proof points of the capabilities and results the company needs.

Our research also found that:

- Integration costs are often not especially relevant to the total cost of ownership and return on investment over the lifecycle of the project.
- The greater importance a company places on supply chain management, the higher they tend to rate best-of-breed providers and the higher hurdle they place on ERP solutions to meet their needs.
- Users want best-of-breed providers to be more knowledgeable about their functional differences with ERP solutions and how those differences translate into results and value.
- Users want ERP providers to bring more domain expertise and experience to the table along with their planning modules.

This issue is simply too important not to get right. SCDigest is confident that the information and recommendations in this report will shed light on the current decision environment and improve the evaluation and selection process.

Supply Chain Planning Technology – Making the Right Decision Between ERP and Best-of-Breed

Market Scenario

For most companies, supply chain management continues to grow in importance. While there continues to be an intense focus on cost reduction, CEOs are also aggressively searching for strategies that can enable profitable growth. For most manufacturers, distributors and retailers, supply chain excellence will provide critical support for creating customer-satisfying market initiatives and ensuring that top line growth expands more rapidly than operating expenses.

A variety of other forces, such as brutal global competition, changing supply chain models, virtualization/offshoring, and rapidly shrinking product lifecycles are all contributing to the need for continuous supply chain improvement.

While supply chain planning applications have been around for nearly a decade, many companies are just now looking to add core support in such areas as demand planning/management, supply and materials planning, optimized shop floor scheduling, inventory deployment, and other areas that can help to improve operational performance. Other companies with more experience with SCP solutions are beginning to adopt newer solutions that support collaboration, multi-party order fulfillment, promotions and trade management, pricing optimization, multi-level inventory optimization and other newer capabilities.

Until very recently, the SCP market has been dominated by best-of-breed (BoB) providers – companies that focused specifically on one or more planning and related application solution areas such as demand planning, supply planning, production scheduling, network optimization, vendor managed inventory and other tools. In recent years, many best-of-breed SCP providers (companies such as i2, Logility, Manugistics, and Steelwedge) have developed even broader suites that provide integrated support for such processes as sales and operations planning, pricing optimization, order fulfillment, supply chain performance measurement and supply chain collaboration. With the increasingly short planning cycles and the need for truly integrated supply chain processes, many of these vendors are offering solutions that begin to blur the line between planning and execution.

At the same time, there has been an important change in the market, as a few ERP providers have placed increasing focus on delivering SCP solutions, entering the fray in some

cases with viable offerings. In particular, SAP, Oracle, and Peoplesoft/JDEdwards have made aggressive efforts to establish market positions across a variety of planning solutions. (We note that the ERP market itself is going through some turmoil, with Peoplesoft first buying JDEdwards, then Oracle taking over of that combined company, while Microsoft admits to having thoughts about buying SAP.) While we believe that functionally the ERP solutions are still well behind best-of-breed, ERP modules are clearly an option more and more companies are considering.

What this is that the software buying landscape has changed, often involving a new, different set of issues to consider in making a vendor selection. The old way of buying software systems has changed from the time when the only candidates were BoB players – now companies must often consider the ERP solution, using a different set of selection criteria and facing a new set of internal politic than may have been encountered in the past.

Increasingly, business and supply chain managers receive internal pressure to evaluate or select the ERP solution for supply chain applications. Many companies now have official policies to evaluate the ERP solution first before they are permitted to select a BoB software application. The reasons for this shift in the decision landscape include the following:

- Progress in the level of functionality of the ERP solutions over the past several years (progress is very much ERP vendor and solution area dependent, however).
- ERP providers are generally well wired into the company's C-level executives, especially the CIO/CFO, and are generally viewed as a strategic partner.
- There are perceived cost advantages to using the ERP solution (software costs, integration) – sometimes real, sometimes not.

As a result, supply chain managers are caught in a squeeze – and are actively looking for help and information to navigate this scenario.

To help companies in those efforts, SupplyChain Digest ™ conducted a major study of both the Supply Chain Planning and Supply Chain Execution software markets. This report focuses on SCP; the SCE report is also available from SCDigest at www.scdigest.com. The SCP report summarizes and synthesizes responses from 79 companies that completed a formal survey on the topic of ERP and best-of-breed SCP solutions. That data was then augmented with several dozen one-on-one interviews with both end user companies and industry experts.

Readers of both the SCP and SCE reports will find that many of the observations and recommendations are very similar for both types of applications – we found that the fundamental decision environment and politics, as well as the right approach to making this analysis, transcended the specific type of supply chain software area. However, the survey data in terms of company experience and perceptions is specific to SCP or SCE in each report, and where appropriate we note differences, examples, and the observations of

thought leaders and users specific to each application category.

The study was in part funded by sponsorships from software vendors. While each major ERP vendor was asked to participate, they declined, and in the end each of the sponsors was a best-of-breed provider. We did, however, speak with several major ERP vendors directly as part of the research, and a significant number of our survey respondents and one-on-one interviews were from customers using ERP solutions.

SCDigest believes the result is the most comprehensive study and analysis of the ERP versus best-of-breed issue that has been undertaken by anyone to date. The study had several important goals:

- Relay the facts about how end users are thinking about ERP and BoB applications.
- Share user experiences in using and evaluating these solutions.
- Put the decision scenario in the proper context.
- Provide recommendations for users in terms of how to make this evaluation most effectively.

Study Methodology

In 2004, SCDigest solicited responses to its formal surveys for both supply chain planning and supply chain execution.

In the end, 79 usable survey responses for the SCP survey were obtained. This represents the "net" number of surveys, after several responses were eliminated from the analysis due to questionable data quality (e.g. rating ERP a "1" and BoB a "10" in all categories), or the wrong company profile (e.g., we requested end users only, and several consultants completed the form).

In addition to these formal surveys, SCDigest conducted over three-dozen one-on-one interviews to gain further qualitative insight. The one-on-one interview pool included:

- Executives (CIOs, VPs of Logistics/ Supply Chain) from over 20 end users
- Leading supply chain consultants, analysts and other thought leaders

These interviews provided critical insight into the real challenges and best practices for both vendors and end users. As one would expect, there were a wide variety of opinions on this topic. Nonetheless, it was also possible to distill a core set of thinking, observations and recommendations that were consistent across most of these experienced end users and industry experts.

Companies that participated in either the SCE or SCP study are listed below. Note that several dozens of companies specifically asked not to be named as participants; also, approximately 30 companies actually took both surveys, though in every case there were

different individuals from those companies completing the survey. In total, it is an outstanding list of responding companies, including both ERP and BoB SCP users.

Figure 1

Example Participating Companies			
3M	Coldwater Creek	Land O Lakes	Sony
Abercrombie & Fitch	Colgate	Lanter Logistics Inc.	Stage Stores
Ace Hardware	Cooper Industries	Loreal USA	Starbucks
Acklands Grainger	Corning Incorporated	Malt-O-Meal	Sunbeam/Oster
AFC	Deereand Company	Mattel	Syratech
Alltel	Dell Inc.	MKI	Temple-Inland
American Power	Dept of Defence	Moen	Texas Instruments
ARAMARK Uniform	DFS Hawaii	Mueller Industries	The Charles Machine Works
Ashland	Doane Pet Care	National Oilwell	The Harvard Drug Group
Avery Dennison	Dolllar General	NIBCO Inc.	The Stanley Works
Banctec	E&J Gallo Winery	Nortek	Unica
Barilla G&R Flli	Engineering Serv Prod	Oce North American	Unisource Canada, Inc.
Belden Comm.	Enterasys Networks	OPD Logistics	United Distributors
Best Buy Company	Exel Logistics	PACCAR Inc.	Value City Furniture
BioLab, Inc.	Exel New Zealand	Parntellos	Ventura Foods
Black and Decker	Exxon Mobil	Procter & Gamble	VF Services, Inc.
Borders Group	Finish Line	Rayovac	Wacker Chemical
Bosch	Fiskars Brands	Roche Diagnostics	Walgreens
Bradford White Corp	Garden Ridge	Rockline Industries	Wells Dairy
Briggs & Stratton	Georgia-Pacific	Saks Incorporated	West Pharmaceutical
Campbell's	Henry A. Petter	Sanmina-SCI	Whirlpool
Canadian Tire Corp	Hewlett-Packard	Scipio International	White Rock Networks
Chanel, Inc.	Honeywell	SCJohnson	William Carter Company
Chef Solutions, Inc.	International Paper	Scott's	Wolf Distributing Company
Cintas Corporation	Int Truck & Engine	Shaw Industries	Wolverine World Wide
CMH	Jabil Circuit Inc.	Shell Chemical	Wyeth
Coach Inc.	Jenny O-Turkey Store	Shopko	xpedx
Coats North America	Johnson & Johnson	Solo Cup Company	

Study Data

Respondent Demographics

Survey respondents reflected a wide range of titles, functions and industries as can be seen in the following charts. 49% of SCP survey respondents were either at the VP or director level, with C-level and managers/others representing smaller percentages.

Functional responsibility was also well distributed, with respondents in supply chain, operations, demand planning, manufacturing and several other related disciplines. Importantly, 28% of study respondents were from the IT side of the house.

Figure 2

Respondent Title

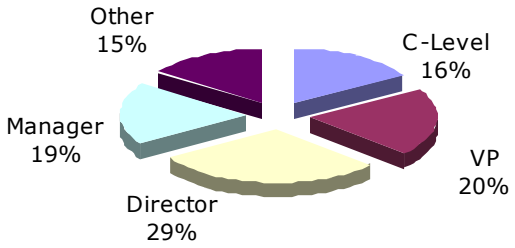


Figure 3

Respondent Function

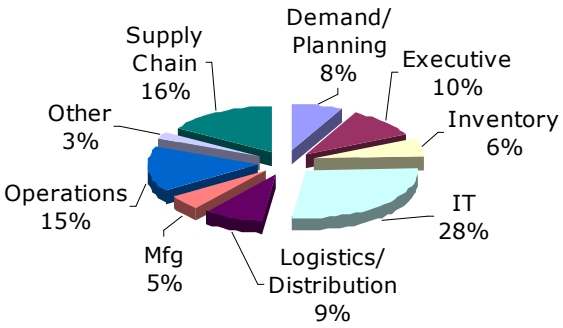


Figure 4

Survey respondents represented a wide range of vertical industries

Respondent by Industry	
Apparel	5%
Appliance/Tool/Consumer Durables	8%
Automotive	5%
Chemicals	5%
Consumer Goods Misc.	6%
Consumer Packaged Goods	15%
Food & Beverage	9%
Hi-Tech/Electronics	14%
Other	9%
Paper/Building Products	5%
Pharmaceuticals/Health Care	4%
Retail	6%
Whls Distribution (durable goods)	4%
Whls Distribution (non-durable goods)	1%
No Answer	4%

The survey also included respondents from a wide variety of vertical industries, with consumer packaged goods and high tech/electronics representing the largest individual segments, but with many other verticals included in the responses.

Respondents primarily came from large companies, with almost all companies having revenues greater than $100 million. 65% of respondents said they were answering from a corporate perspective, versus 35% answering from a divisional perspective.

Current Technology Environment

Not surprisingly, approximately half of our respondents cited SAP as their primary ERP system, versus 23% for Oracle and 9% for JDEdwards. Two-thirds of respondents had a single primary ERP, while one-third had multiple ERP systems in the corporation.

We also asked companies to identify their primary demand planning/ forecasting solution provider and also their primary overall supply chain planning vendor. The SCP market has historically been less fragmented in terms of dominant providers than is the SCE (WMS and TMS), and this was reflected in our survey. The vast majority of our respondents were using solutions from traditional leaders such as i2, Logility and Manugistics in both demand planning and overall supply chain planning areas. There was a variety of experience with these types of solutions among our respondents, as shown by the responses indicating a wide range of dates for when the applications in each areas were first installed at the respondent's company. (See Figures 7-10)

Figure 5

Primary ERP System

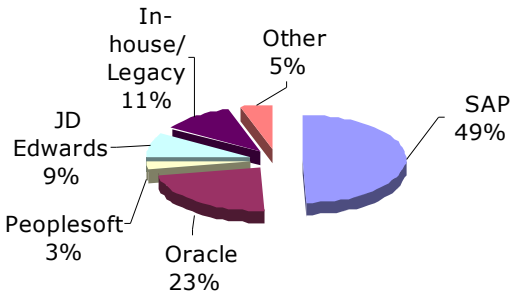


Figure 6

How Many ERP Systems are Running in Your Company?

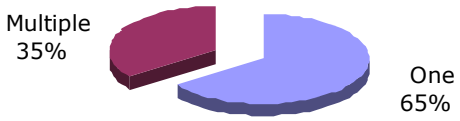


Figure 7

Primary Demand Planning Vendor

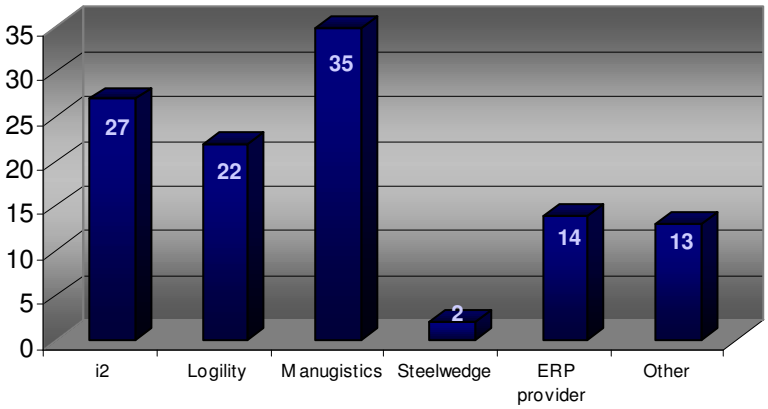


Figure 8

Year Primary Demand Planning System First Installed

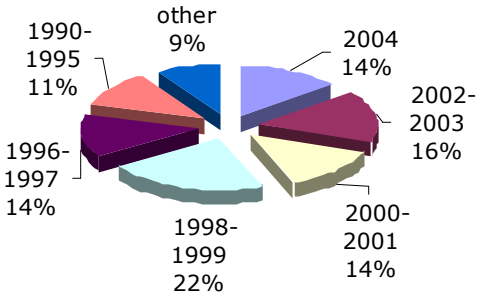


Figure 9

Primary Supply Chain Planning System

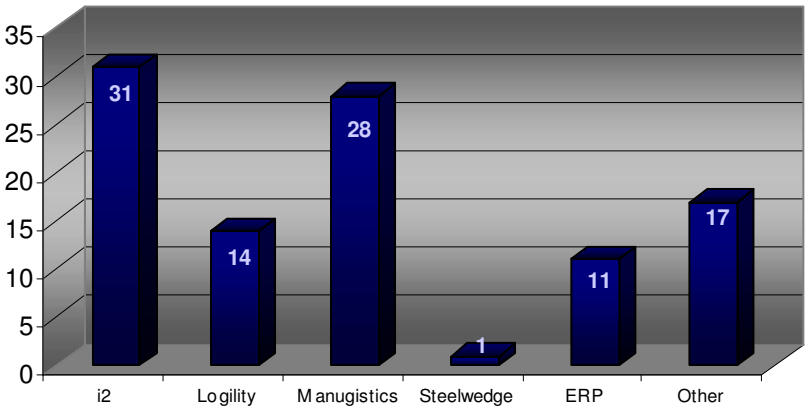


Figure 10

Year Primary Supply Chain Planning System First Installed

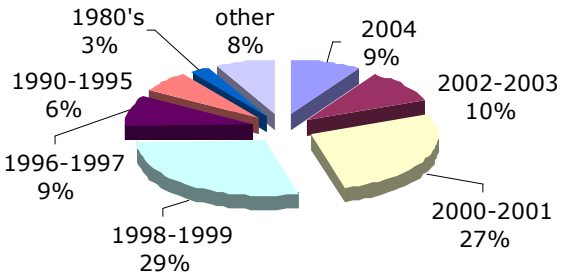
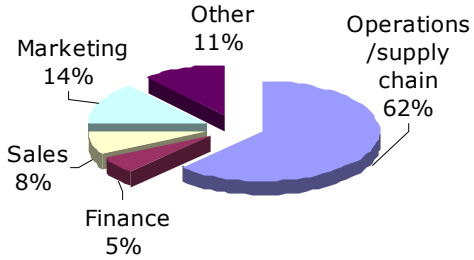


Figure 11

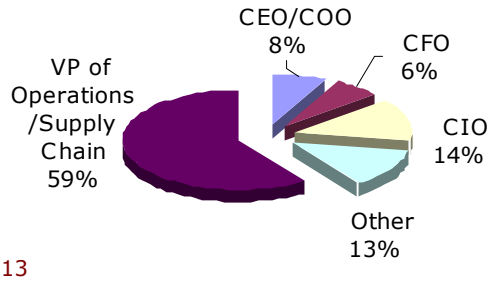
Which Group Owns Demand Planning/ Forecasting Process



We were also interested in knowing who was the primary functional owner of the demand planning process. Consistent with other research work SCDigest has done, supply chain/operations owned the process in just under two-thirds of our respondent companies.

Figure 12

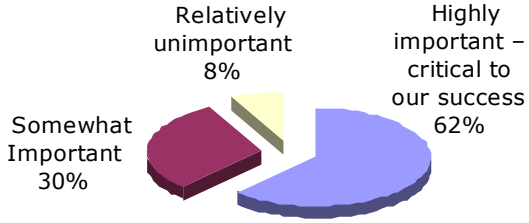
Decision Maker For Advanced Planning/ Forecasting Technology



We also asked respondents to identify who the final decision-maker was in their company for demand planning/supply chain planning systems. Perhaps interestingly, only 14% of respondents identified the CIO as the primary decision-maker.

Figure 13

How important is supply chain efficiency to the overall competitiveness of your company?



We also wanted to understand the importance of supply chain effectiveness to our respondent population. As you can see below, nearly two-thirds said it was very important, and 30% somewhat important.

Experience and Approach to Evaluating ERP versus Best-of-Breed SCP Solutions

53% of our respondents indicated they had evaluated ERP and best-of-breed demand planning solutions in the past two years. 56% indicted the same for overall supply chain planning applications. We think this is an important indicator of the freshness and validity of the data. As will be shown later in the report, there are differences (generally favoring best-of-breed) between those companies that have recently evaluated the solutions and believe that they "know the differences well" and those respondents that have less detailed/fresh knowledge.

We also asked respondents how their companies approach the ERP versus best-of-breed solution issue. We had an interesting mix of responses:

- 25% of respondents indicated that they looked objectively at both types of solutions.
- 15% prefer best-of-breed solutions, while 18% prefer ERP.
- 42% indicated that the default choice is the ERP module, meaning that they must first prove in some way that the ERP application is not able to meet their needs before they can go to best-of-breed. This is clearly a growing trend that puts extra challenges on both BoB providers as well as company decision-makers.

Figure 14

Evaluated ERP vs. BoB Demand Planning Solutions in Past Two Years

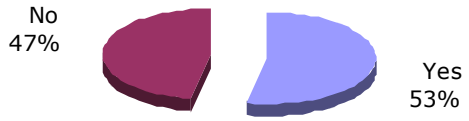
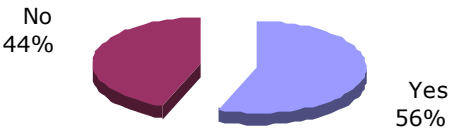


Figure 15

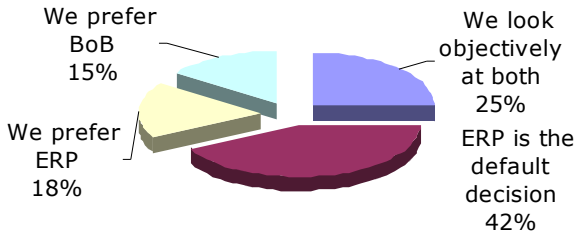
Evaluated ERP vs. Other SCP Solutions in Past Two Years



Approximately half of all respondents have recently evaluated ERP and BoB SCP software

Figure 16

When considering new applications how does your company think about ERP?



As indicted above, we believe that in aggregate our survey respondents were knowledgeable about the differences between ERP versus BoB. This point is illustrated in the nearby charts. This level of professed knowledge directly relates to the high percentage of companies that had made an evaluation in this area in the past two years. The number of respondents who said they knew the issue well was almost identical for both demand planning and overall supply chain planning applications, at 53% and 54% respectively.

Figure 17

How well do you understand the comparative capabilities of ERP vs. BoB Demand Planning solutions?

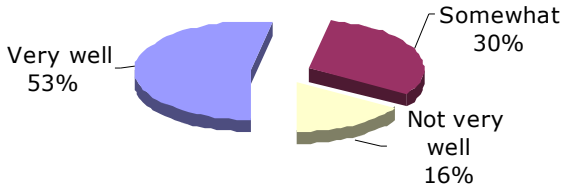
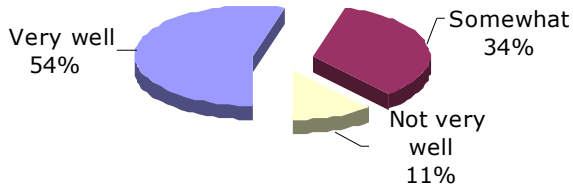


Figure 18

How well do you understand the comparative capabilities of ERP vs. Other SCP solutions?



Comparative Evaluation

The following chart sums up a fairly complex set of questions asking respondents to evaluate ERP versus BoB along a variety of dimensions, based on a scale of 1-10, with 10 representing the best fit or highest score that could be given.

Clearly, respondents overall rated BoB higher on nearly every category, generally by a significant margin. There was strong preference along such key dimensions as functionality, domain expertise, ease of use, external integration and importantly, overall value. Conversely, ERP had slightly higher ratings in the areas of support, and noticeably higher in the area of cost. There was little difference in the ratings between the two in the areas of software quality.

Figure 19

Respondents evaluated multiple criteria, with 1=the lowest score and 10 the highest

Area	ERP	BoB
Functionality	4.12	6.82
Focus on Needs of Your Vertical Industry	4.00	6.37
Flexibility to Adapt to New Business Requirements	3.80	6.29
Software Quality	5.43	6.10
Ease of use for end users	4.16	6.02
Domain Expertise	3.98	6.37
Support	5.96	5.43
Cost	5.71	4.34
Ease of integration to other enterprise systems	3.84	5.78
Ease of integration to external trading partners/systems	3.82	5.59
Ability to Provide You Competitive Differentiation	3.29	6.27
Overall Value	4.20	6.43

We also wanted to see how, if at all, these responses differed for IT personnel, and so we cross-tabulated responses from IT respondents against the overall results. As you can see from the chart, though BoB still had a superior rating in many key criteria over ERP from IT-oriented respondents, the gaps between the ratings for ERP and BoB are not as great as they were for the overall survey population. For example, IT respondents scored best-of-breed an average of 6.13 on functionality, while overall the survey group gave BoB an average score of 6.46. Conversely, IT respondents rated ERP providers slightly higher on the same functionality dimension, with an average score of 4.56, versus 4.17 for the overall survey population. We believe this simply reflects the fact that in general, IT personnel are somewhat less close to the detailed functional requirements of the business.

Figure 20

IT Respondents Rate Best-of-Breed Higher, But Less Strongly than Business/Operations Respondents

Area	ERP		BoB	
	Overall Average	IT Responses	Overall Average	IT Responses
Functionality	4.12	4.55	6.82	6.77
Focus on needs of your vertical industry	4.00	4.45	6.37	6.32
Flexibility to adapt to new business requirements	3.80	3.86	6.29	6.55
Software quality	5.43	6.05	6.10	6.68
Ease of use for end users	4.16	4.73	6.02	6.14
Domain expertise	3.98	4.45	6.37	6.55
Support	5.96	6.23	5.43	5.95
Cost	5.71	6.14	4.34	4.14
Ease of integration to other enterprise systems	3.84	3.68	5.78	6.00
Ease of integration to external trading partners/systems	3.82	4.09	5.59	6.00
Ability to provide you competitive differentiation	3.29	3.82	6.27	6.14
Overall value	4.20	4.86	6.43	6.09

We also wanted to understand how ratings from respondents who indicated that they knew the ERP/best-of-breed differences well compared with the overall survey pool. As you can see, the gap/preference for BoB providers is actually greater for the group of "knowledgeable" respondents. We think this is an important finding that reinforces the best-of-breed vendor's contention that they continue to enjoy a strong lead versus ERP in terms of functionality, domain expertise and other attributes. For example, the ratings gap between BoB and ERP on the category "functionality" for survey respondents as a whole was 2.7 points (6.82 – 4.12). However, for those respondents who know the topic well, the ratings gap on functionality extends to 3.34 (7.22 – 3.88). Similar deltas in gaps favoring BoB for those that know the topic well versus the overall population were seen in every other category.

Figure 21

Respondents Who Know Differences Well Express Even Greater Preference for Best-of-Breed

Area	ERP		BoB	
	Overall Average	Knows Topic Well	Overall Average	Knows Topic Well
Functionality	4.12	3.88	6.82	7.22
Focus on Needs of Your Vertical Industry	4.00	3.93	6.37	6.61
Flexibility to Adapt to New Business Requirements	3.80	3.93	6.29	6.44
Software Quality	5.43	5.78	6.10	6.39
Ease of use for end users	4.16	4.56	6.02	6.05
Domain Expertise	3.98	4.22	6.37	7.00
Support	5.96	6.80	5.43	5.76
Cost	5.71	5.78	4.34	4.44
Ease of integration to other enterprise systems	3.84	3.90	5.78	6.10
Ease of integration to external trading partners/systems	3.82	4.05	5.59	6.10
Ability to Provide You Competitive Differentiation	3.29	2.98	6.27	6.71
Overall Value	4.20	3.88	6.43	7.00

This strong overall preference for BoB solutions was extended as we drilled down into more specific product areas and attributes. We asked respondents to rate ERP versus best-of-breed along a number of key solution areas, such as demand planning, supply planning, VMI and so on. Again, there was a sizable advantage for best-of-breed in every category, with the exception of order management, which was rated higher for ERP. This is not surprising, as today ERP providers generally control the order management application; those not using ERP order management frequently use legacy systems.

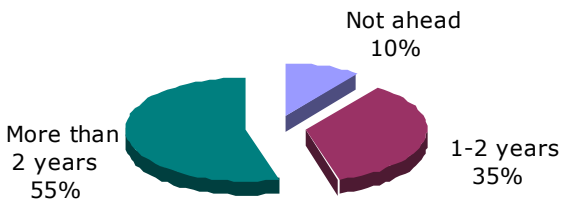
Finally, we asked respondents to rate how far ahead they believed BoB vendors overall were versus ERP solutions. As you can see, more than 55% believe the development gap is more than two years. 10% of respondents, however, said they did not believe best-of-breed vendors were ahead of ERP solutions at all. We suspect this represents users with less complex needs for which ERP solutions have a good functional fit.

Figure 22

Area	ERP	BoB
Demand Planning/Forecasting	3.57	6.39
Supply Planning	3.80	6.10
Materials Planning	4.33	6.12
Distribution Requirements Planning	3.73	6.00
Vendor Managed Inventory	3.55	5.47
Shop Floor Scheduling	3.82	5.29
Network Planning and Optimization	3.31	5.65
Pricing Optimization/Promotions Planning	3.37	7.18
Order Management	4.88	4.65
Supplier Relationship Management	3.78	5.43
Strategic Sourcing	3.35	5.22
Web-based collaboration with trading partners	3.49	6.65

Figure 23

How many years ahead do you believe leading BoB SCP providers are vs. ERP?



Integration Costs

Integration, of course, is generally perceived as the key barrier to best-of-breed solutions, and/or the primary reason companies decide to go with the ERP solution. We therefore wanted to understand customer perceptions on the cost to integrate best-of-breed solutions to ERP. These question asked respondents to estimate total integration costs – internal, consultants, and vendors.

As can be seen, 16% believe it costs more than $1 million to integrate best-of-breed to ERP, while another 16% indicated that it costs over $500,000.

23% responded less than $100,000, and the plurality (35%) placed the cost at between $100,00-$250,000.

This issue is obviously of critical importance, because as the chart below shows, even at $250,000, respondents indicate that integration costs can be a barrier to choosing BoB solutions.

"Integration" is an area where frankly there are very few established facts, and a variety of disinformation is provided on all sides. While SCDigest believes integration costs are an important evaluation component that needs to be accurately estimated as part of ROI and total cost of ownership calculations, our research also indicates that for SCP applications those integration costs are coming down, and that in most (but not all) cases they are not especially relevant to the business decision.

Figure 24

How much do you believe it costs to integrate ERP SCP Solutions to your ERP?

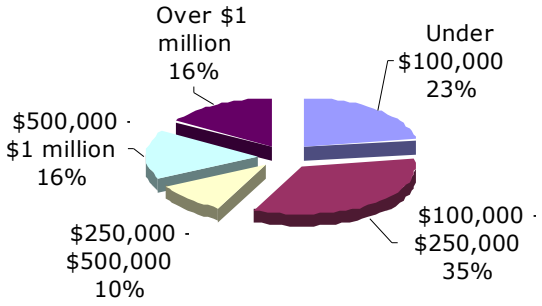
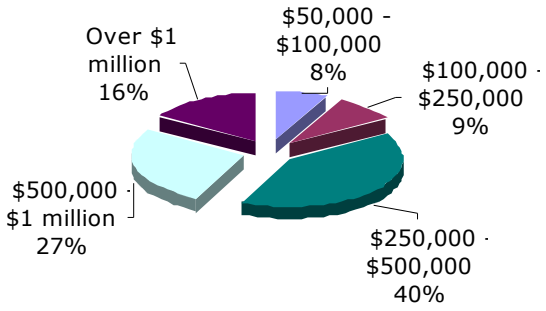


Figure 25

At what level of integration cost does it become a barrier to adopt SCP vs ERP?

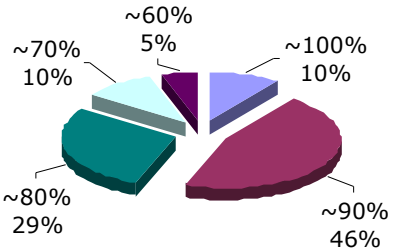


How Close of a Fit Does ERP Have to Be?

In terms of functionality, ERP solutions today generally have fewer capabilities than best-of-breed solutions. Obviously, the entire concept of "best-of-breed" becomes dubious should this situation ever change. We therefore wanted to understand how close a fit to functional requirements ERP SCP solutions have to be to be seriously considered by companies. As can be seen from the chart, a near majority of respondents (46%) indicated that the ERP solution needed to have a 90% fit with functional requirements. 10% said there had to be a perfect fit, while 29% indicated that an 80% fit was required.

Figure 26

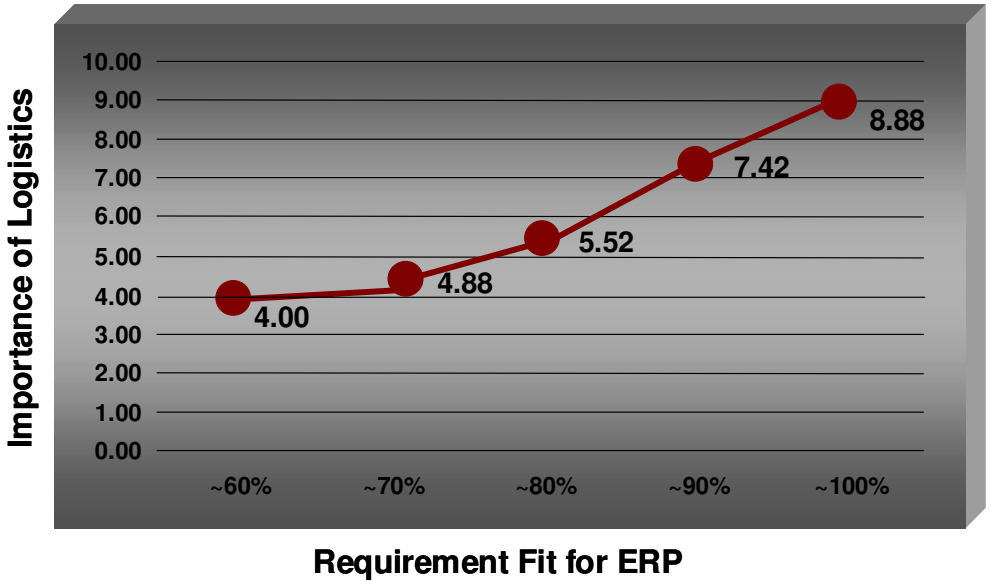
At what level of fit with your business requirements would you strongly consider ERP?



Importantly, we then wanted to see whether there was a correlation between this response and the importance of supply chain management to a company's overall corporate success. First, we asked companies to rate the importance of supply chain management in their companies on a scale of 1-10, with 10 being "highly important." As you can see from the chart below, the more important a company views supply chain, the higher the threshold they place on the requirement for ERP functional fit. For example, companies that said they required 100% fit with business requirements for ERP providers scored at the high end of the supply chain importance scale, with an average of 8.8. Conversely, those companies that said they required only an 80% fit had an average score for supply chain importance of only 5.52. The obvious conclusion is that the higher the importance of supply chain management to a company's organization, the higher standard they will set for an ERP solution in terms of meeting business requirements before selecting that solution over best-of-breed.

Figure 27

The higher the importance of logistics to a company's organization, the higher standard they will set for an ERP



Summing Up the Data

Clearly, our survey population ranked best-of-breed supply chain planning vendors higher on most evaluation categories, including multiple areas of functionality, domain expertise, ease of use, flexibility and overall value. The results were more mixed in such areas as software quality, and software support, while ERP scored more favorably in terms of cost.

The results were even stronger for best-of-breed from respondents who indicated that they knew the differences well. While IT respondents also rated best-of-breed higher across most functional areas, the advantage in ratings for best-of-breed was smaller than for ratings from operations/logistics personnel.

As always, there may be some sample bias in our survey population – for example, it is possible that individuals who felt more strongly about the issue in best-of-breed's favor were more likely to become a survey respondent than the average user. Nonetheless, SCDigest believes that the number and diversity of respondents, the strength of preference gap, and the fact that a high percentage of respondents had recent experience evaluating ERP and best-of-breed solutions and/or indicated they knew the subject means the results have a high level of validity.

Of course, there are many other factors that go into the decision between ERP and best-of-breed – and not all of them completely logical, as we'll discuss in the subsequent sections of this report. The results of our survey also indicate that the costs of integration for best-of-breed continues to be a concern, and that some companies, especially those for whom logistics and supply chain execution are not a critical or differentiated function, are willing to go with the ERP at a lower threshold of functional fit with their requirements.

The survey also supports SCDigest's belief that we will see an increasing focus on integrated logistics operations in the next several years. While two-thirds of our respondents believe best-of-breed vendors will be better equipped to deliver such integrated solutions, in the end SCDigest believes that vendors from either camp that are best able to deliver on this vision will gain marketplace advantage.

Analysis and Synthesis

The survey data provides a solid factual context in terms of how users perceive differences in ERP and best-of-breed solutions, and how they think about this decision. In this section of the report, we use a combination of that data and our one-on-one expert interviews to provide some additional context to this critical decision process. This analysis is followed by a recommended framework for end users facing this software decision, along with some of the key functional areas across supply chain planning applications that companies should evaluate closely in terms of functional differences between vendors.

There is an Important Gap in the Perceptions of IT and Non-IT Personnel

There is just no question that operations and IT see the world and this issue specifically through fundamentally different lenses. Logistics and supply chain managers clearly put a premium on functionality/capabilities, ease of use, and flexibility to meet change. We heard lots of comments like "functionality is what really drives ROI" and "I need the right tools to do the job" from the operations-oriented respondents.

It's not, of course, that IT doesn't care about these issues, but that they are generally of lesser importance to them than they are to the business side. IT will often put greater focus on such attributes as the "manageability" of the application and total enterprise solutions portfolio. At one level, it is the same perspective: operations people want their jobs to be made easier through improved functionality, while IT's job wants improvement in the work they have supporting all this technology. As a result, IT generally has a bias towards familiar vendors and technologies, and to ease the effort they have to put into integration.

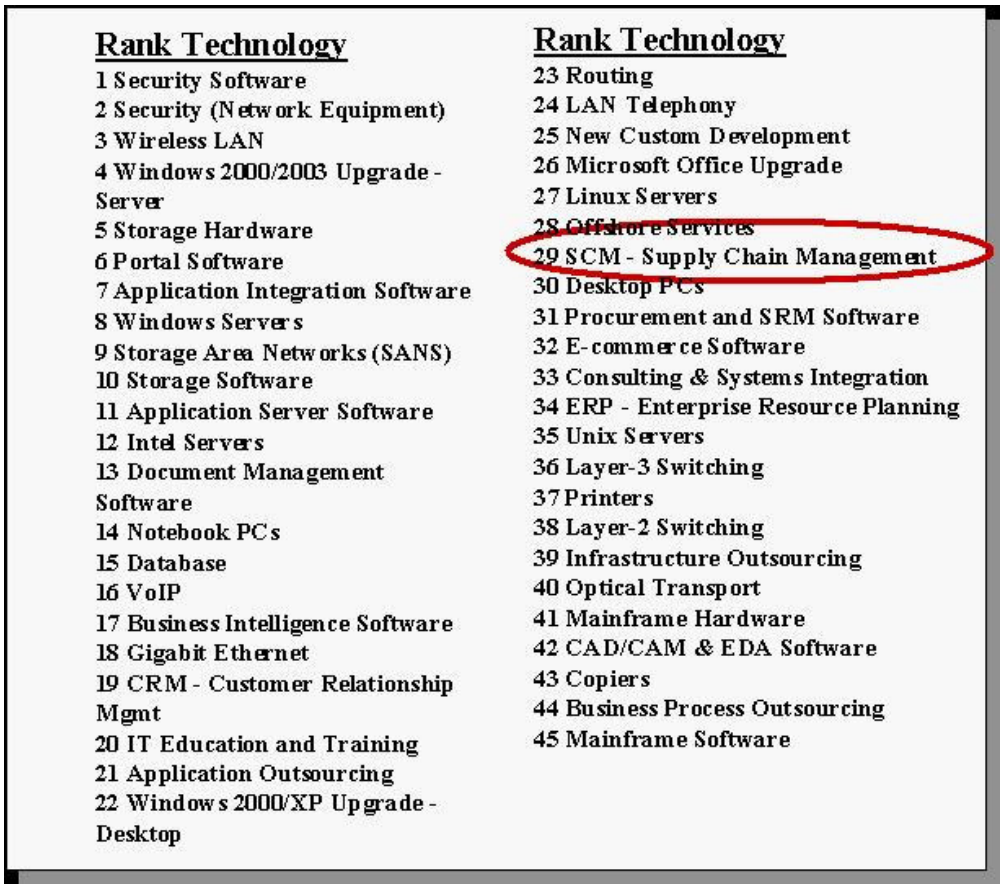
So, let's put it plainly: **Today, business/operations managers almost never want the ERP solution, while IT is much more likely to push for the ERP module.**

Unfortunately, this disconnect often leads to very poor decision processes, in which decision criteria are not really clear, with hidden agendas and "bad blood" between business and IT managers damaging the process.

As evidence of the misalignment between IT and the business, we note the chart nearby from Morgan Stanley's most recent semi-annual survey of CIO's. The chart shows that in terms of spending priorities, supply chain technology scored extremely low, only 29th out of 34 categories (though interesting, ERP scored dead last). But we thought it interesting that supply chain, one of the key process disciplines of most companies, still scored well below such things as voice over IP, gigabit Ethernet, and Microsoft Office upgrades in the CIO's mind.

Figure 28

Are IT and the Business Really Aligned?



Rank	Technology
1	Security Software
2	Security (Network Equipment)
3	Wireless LAN
4	Windows 2000/2003 Upgrade - Server
5	Storage Hardware
6	Portal Software
7	Application Integration Software
8	Windows Servers
9	Storage Area Networks (SANS)
10	Storage Software
11	Application Server Software
12	Intel Servers
13	Document Management Software
14	Notebook PCs
15	Database
16	VoIP
17	Business Intelligence Software
18	Gigabit Ethernet
19	CRM - Customer Relationship Mgmt
20	IT Education and Training
21	Application Outsourcing
22	Windows 2000/XP Upgrade - Desktop
23	Routing
24	LAN Telephony
25	New Custom Development
26	Microsoft Office Upgrade
27	Linux Servers
28	Offshore Services
29	SCM - Supply Chain Management
30	Desktop PCs
31	Procurement and SRM Software
32	E-commerce Software
33	Consulting & Systems Integration
34	ERP - Enterprise Resource Planning
35	Unix Servers
36	Layer-3 Switching
37	Printers
38	Layer-2 Switching
39	Infrastructure Outsourcing
40	Optical Transport
41	Mainframe Hardware
42	CAD/CAM & EDA Software
43	Copiers
44	Business Process Outsourcing
45	Mainframe Software

Source: Morgan Stanley CIO Survey – June, 2004

Clearly, to make this and any important decisions effectively, companies must achieve better alignment and dialog between IT and operations.

Integration Is *Not* Really The Issue

Or at least, integration is often not as big an issue for CIOs as it's made out to be.

This observation may be counter intuitive or difficult to believe, but our research indicates that integration cost per se is really not the reason in most cases why IT managers or CIOs argue for the ERP solution, though that is often the excuse that is used.

Their argument against best-of-breed based on integration issues generally takes one or two forms:

1. Costs: the costs of initial and on-going integration are simply not worth the incremental ROI of additional functionality.

2. Focus: "integration" is simply not a core competence or activity the company wants to staff for.

The costs and challenges of integration are of course not to be dismissed. On the other hand, SCDigest believes that companies often cite integration issues as the reason for going with ERP solutions without having really looked at the costs and total returns between both solutions in detail. While it is certainly possible that in many situations a full analysis of those costs and benefits will come down in favor of the ERP SCP module, we believe performing that analysis in a detailed and objective fashion is critical to making the right decision.

> *"You're right, it really isn't integration [why CIOs generally prefer ERP]…that's just an excuse we know it's hard for anyone to argue with. The cost differences really aren't that great. It's more a matter of staying with a vendor and technologies we're the most comfortable with."*
>
> *CIO*
> *Major Consumer Goods Co.*

It is frankly difficult to get to the truth around integration differences, costs and challenges. Based on our research, here is what we believe:

- In general, integration costs are coming down. Most evidence indicates that they are both coming down as a percentage of total project costs for SCP implementations, at a time when in general those project costs themselves are declining. For example, SCDigest research indicates that in general, total integration costs have declined over the past five years from 20-35% of the total project for SCP implementations to an average of 10-25% of most projects today. The impact of this percentage reduction is magnified by the fact that the overall costs of SCP projects have also declined during this time.

- There are several drivers for the reduction in integration costs. These include improved ERP "adapters" available from best-of-breed providers, increased use of EAI or middleware solutions by both best-of-breed vendors and their customers, and greater experience by companies and vendors in integrating with ERP.

- The reality (often misunderstood) is that there are many "integration" costs that have to be incurred for both ERP and best-of-breed solutions. The level of this cost overlap depends on several factors, such as how the SCP solution is deployed (centralized, decentralized), how much of the integration is to non-ERP applications (e.g. legacy apps, trading partners), the level of modification to the core ERP system, and the level of modification to the SCP module. Generally, many of the activities and costs associated with the "discovery" process, testing of the interface, etc., **are incurred regardless of which solution type is selected.**

- Especially with SAP, integration methods between ERP and best-of-breed are often the same. For example, APO uses the same production interfaces that a best-of-breed application does.

- In most companies, a significant amount of the integration effort is still to non-ERP applications. Obviously, these costs will therefore be incurred for both ERP or BoB solutions, and BoB may in fact have greater experience/skill in achieving these integrations to either legacy systems or other third party applications.

- Integration costs/efforts for BoB may be an issue for mid-sized companies with very small IT shops. This is especially true if their operating requirements are not complex, meaning that both the cost of the integration effort for the ERP module will be low, as will the incremental value from increased BoB functionality. However, these scenarios are also where the standard best-of-breed adapters will be the most "plug and play."

- SCDigest believes that integration costs will continue to decline. These decreases will be driven by technical developments such as "service oriented architectures" (SOA), which promise to make integration much easier across any applications that have adopted SOA standards. SAP's own NetWeaver platform is one example of this. While still evolving, NetWeaver promises to make SAP integration with any third party application even easier.

Perhaps most importantly, in a number of our one-on-one discussions, corporate CIOs indicated that integration costs were not really the issue in favoring ERP solutions. As the CIO of a major consumer goods company told us: *"You're right, it really isn't integration [why CIOs generally prefer ERP]…that's just an excuse we know it's hard for anyone to argue with. The cost differences really aren't that great. It's more a matter of staying with a vendor and technologies we're the most comfortable with."*

> *"I generally estimate that it takes about one-half of a full-time IT equivalent to support a best-of-breed application integration over time, and that's generous."*
>
> *CIO*
> *Industrial Manufacturer*

Said another CIO: *"I generally estimate that it takes about one-half of a full-time IT equivalent to support a best-of-breed application integration over time, and that's generous."* While this may be a real cost, is it enough of a cost that the company should not select best-of-breed if it is truly the better fit for business requirements and objectives? SCDigest does not believe the answer can be *Yes* for many companies. The business imperative is to get a true estimate of the actual integration costs for both ERP and best-of-breed, and factor that into lifecycle TCO and ROI calculations.

The reality is that integration costs are all over the map, for both best-of-breed and ERP. SCDigest has developed a framework for considering what condition can impact integration costs for both ERP and best-of-breed.

Factor	Impact on ERP SCP Integration to Its Own Solution	Impact on Best-of-Breed Integration Costs
Scope of SCP Deployment (number of modules)	Modestly Higher	Higher
Modifications to core ERP	Higher	Higher
Modifications to Best-of-Breed SCP	Not Applicable	Higher
Modifications to ERP SCP	Higher	Not Applicaple
ERP Data Entities Not Well Understood	Higher	Higher
Integration to other legacy/ third party applications	Higher	Higher
EAI/middleware software in place	Lower (to legacy/third party apps)	Lower

We spoke specifically to a number of customers about their integration efforts. For those with a relatively little amount of modifications to the core ERP and best-of-breed solution, the standard BoB ERP adapters appear to generally work well. Companies could expect total integration costs (in-house, vendor, consultants) in the $150,000-$250,000 range.

Modifications to ERP or BoB, integration to several legacy applications, a poor understanding of ERP data tables and entities, multiple instances of ERP with different metadata, etc. will all add to integration costs – for both ERP and best-of-breed providers.

One major process industry customer with a modestly modified version of SAP provides a reasonable case study. This company implemented several modules from a leading best-of-breed provider (demand planning, master planning, DRP). Their estimate of integration costs is as follows:

- Internal personnel/consultants: 3-4 for FTEs for 3 months (estimated cost: $100,000)
- SAP adapter from best-of-breed provider: $50,000 (we will note this fee can sometimes be negotiated away)
- Other services costs to best-of-breed providers (discovery, mapping, testing, etc): $100,000
- Total estimated costs: $250,000

While not an unsubstantial number, is it enough to change the decision to ERP? Companies must evaluate how much of those costs would also be incurred with the ERP solution, any additional costs for modifications or implementation of the ERP solution, and most importantly then factor any cost delta for best-of-breed into long-term total cost of ownership and return on investment.

SCDigest believes that for many companies, true integration cost differences alone, when viewed from a long term TCO and ROI perspective, are not particularly relevant, especially for companies who have large supply chain improvement or differentiation opportunities.

Aggressive ERP Pricing Strategies Do Make the Choice Harder

Unquestionably, ERP vendors have used price as a weapon in their market battles with best-of-breed providers. As they have released new supply chain planning solutions, ERP vendors have often "given away" the solution to gain experience and market presence.

> *Companies must evaluate sometimes "give away" software prices from ERP vendors in terms of total project costs and ROI.*

Ultimately, of course, ERP providers cannot afford to make investments in solutions for which customers are not ultimately compensating them. Nonetheless, if either the ERP vendor offers a significant "deal" for their module, or your company has banked seats that can be used for purchase (although keep in mind that there is a real cost even for this unless a total enterprise license is in place), it can serve as a financial incentive for going with ERP. However, we believe this incentive is very modest for most companies, and often outweighed by benefits from superior BoB functionality and other costs associated with the ERP solution.

Specifically:

- In general, best-of-breed license pricing continues to decline from levels of a few years ago. This means that even at "give away" prices, the impact of the savings in software license for the ERP provider in terms of total project costs on a 5-7 year TCO and ROI is often insignificant.

- Any "savings" from ERP license deals obviously must be evaluated in terms of any additional costs for modifications to the ERP module required to meet business requirements.

- Given these facts, best-of-breed vendors must obviously be able to demonstrate that in total, any costs (license, integration) that are higher for their solution than for ERP, less any extra costs for ERP (modifications, extended deployment), in turn generates additional savings/benefits above that additional cost.

Best Of Breed Vendors Need To Do a Better Job Defining Differences And Value

In our research, we continually heard complaints from companies that best-of-breed vendors were not as knowledgeable as they should be in terms of the functional differences with ERP solutions and their value. For example, one supply chain executive that has been evaluating both best-of-breed and SAP's APO solution told us: "It has been very difficult for us to get information from the best-of-breed vendors about where they really differ from APO, and how that turns into dollars for us."

> *"It has been very difficult for us to get information from the best-of-breed vendors about where they really differ from APO, and how that turns into dollars for us."*
>
> *VP Operations*
> *Consumer Hard Goods*
> *Manufacturer*

Similar comments were offered by a number of other managers and executives interviewed by SCDigest.

Business and operations decision-makers, caught in this tough spot between what they want (which for now is almost always best-of-breed) and other corporate pressures favoring ERP, need BoB vendors to bring much stronger facts about functional differences and how those will clearly manifest themselves in terms of better operating results.

ERP Vendors Need To Bring More Domain Expertise To The Table

Conversely, our research indicated that companies wish ERP providers were capable of bringing more supply chain execution and industry expertise to the table.

As one respondent noted: *"A module is not a solution. SAP is too reliant on consultants to bring the domain expertise to deliver a total solution. This to me is actually a bigger weakness than the product gaps."*

As the market increasingly understands the role of process, people and change management in achieving success, SCDigest believes ERP vendors must increase consulting staff with expertise in network design, demand planning, replenishment, production scheduling inventory management, and related supply chain skill sets to increase their total value proposition to end users.

Consultants May Have Conflicting Agendas

SCDigest spoke with a number of consultants – both current and former – about the internal conflicts that the ERP supply chain offerings sometimes create.

Given the increased interest and adoption of ERP solutions, many if not most SCE-related consultants have and should develop implementation practices around ERP solutions. However, companies considering ERP (or for that matter best-of-breed) should be aware of the potential biases that may impact consulting recommendations.

To be blunt, the consultant's ERP team, especially if they are already on-site, may have an incentive for the client to use the ERP solution. If the client selects the ERP solution, the choice may enable the consultant to keep its ERP team in place, contribute "volume" to agreements for business with ERP providers, and possibly to increase the size of the engagement by leading efforts at modification of the ERP solution to meet functional requirements.

This quote, from a former associate partner at a very large consulting firm, summarizes the potential for conflicting objectives: *"The overriding goal of the consultant's SAP team is too stay on at that client. Does that impact their recommendations? Of course it does."*

> *"The overriding goal of the consultant's SAP team is too stay on at that client. Does that impact their recommendations? Of course it does."*
>
> *Former Associate Partner*
> *Major Consulting Company*

Sometimes, this even causes tensions within the consulting companies themselves. The large consultancies are generally organized in a matrixed fashion. "Industry" groups (e.g., high tech or consumer goods) and partners generally control the end client, and this often has been the group that has led the ERP deployment at the client over several years. These same consultancies also usually have a "horizontal" group focused on supply chain planning applications across industries, work that would include performing detailed evaluations across vendors. These horizontal supply chain groups are often frustrated when the industry/client teams nudge or push the client towards the ERP SCP solution without a full review of requirements and cross vendor capabilities by their subject matter experts. Said a current consultant at another major consultancy: *"Are we at times frustrated that we aren't brought in to do a true evaluation between ERP and best-of-breed solutions? Of course."*

There are many excellent consultancies out there, and most have their clients' best interests at heart. But they also have additional pressures, including the need to extend client engagements and please ERP (or specific best-of-breed) relationships. Companies need to be aware of those possible sources of bias when evaluating what consultants to use and analyzing their recommendations. This last point is true of course even when the evaluation is only between best-of-breed vendors, and ERP providers believe that the horizontal supply chain groups are sometimes biased in favor of specific best-of-breed providers.

ERP Versus Best-of-Breed: A Decision Framework

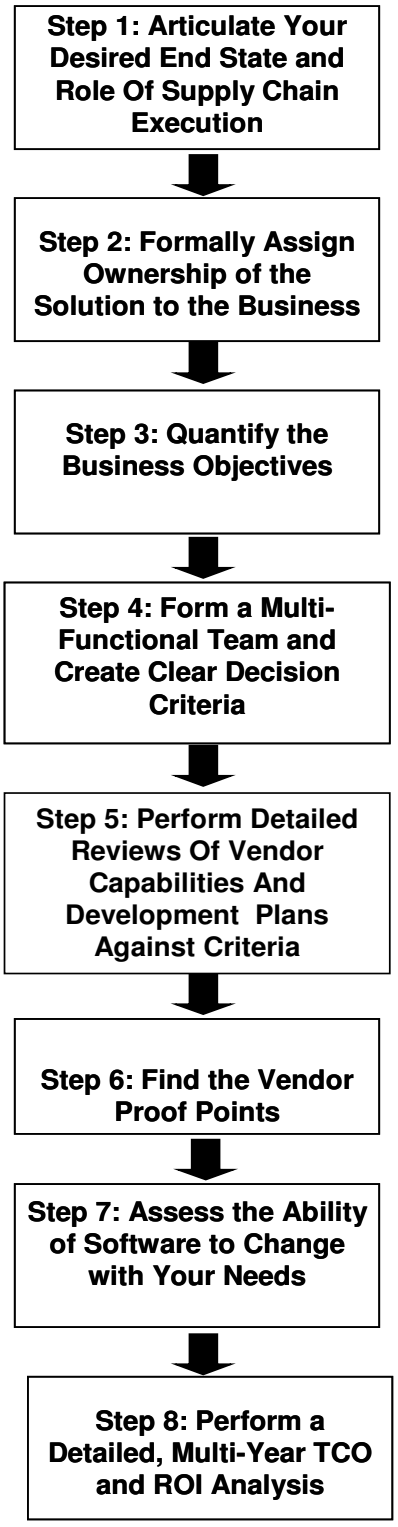
Based on our research, SCDigest believes that a small percentage of companies are actually making the ERP versus best-of-breed decision in a well-considered, logical, and objective fashion.

It is not possible for this or any other research to identify for any individual company what the right choice is between ERP and best-of-breed. This choice is dependent on many factors, including the specific application area, the specific ERP and best-of-breed vendors under consideration, the company's business requirements and complexity, and many others.

What is possible, however, is to develop an evaluation and decision framework that companies can use to make the decision that maximizes the chance it is the best one for their specific business scenario.

SCDigest offers such a framework below, summarized in the accompanying illustration. It's an eight-step model that was developed as a composite of the many excellent opinions and recommendations we heard during the course of this research from a wide variety of supply chain executives and consultants. Many of our interviews were with companies that have been through the process recently and were able to contribute "lessons learned" that can benefit others facing this same decision.

Supply chain is the lifeblood of many manufacturing, distribution and retail companies, and supply chain planning software is often critical to the effective



performance of that supply chain. Given that companies typically use the selected supply chain planning software for 7-10 or even more years, **this issue is simply too important not to get right.**

Step 1 – Articulate Your Desired End State and Role Of Supply Chain Execution

The foundation for successfully selecting the appropriate supply chain execution vendor and technology for your company is to have a crystal clear, written description of how you want your supply chain or an individual function to operate and perform over the mid- to long-term.

Too often, we see companies trying to make technology decisions without really defining what it is they are trying to accomplish in the end. As one supply chain consultant told us: *"Too often we see clients focused on a specific point problem without really understanding where they are trying to take their supply chain, and how that drives value to the company."*

Of course, a company must be able to clearly define the end state it is trying to achieve to understand both the processes and technology that are required to get there. This is more than just a checklist of capabilities – it's really about what kind of supply chain performance you are trying to reach, over what time frame. This principle applies to both individual functional areas, as well as across execution processes, and must be articulated not only from an internal perspective but how the proposed improvements will support the corporation strategies for differentiation and success in the marketplace. As Rick Blasgen, Vice President of Supply Chain at ConAgra recently put it, *"The role of supply chain is really about supporting our corporate growth strategies and supporting our brands."*

A critical component of this process must be an assessment of the role of logistics and supply chain within your company. Is it a commodity function, for which basic automation is enough, or is it an area where you can differentiate, create customer value, and drive out significant cost? How you answer that question will go a long way towards guiding your ERP versus best-of-breed decision – and be prepared that you may have to make your case with execs who don't see the opportunities that you see.

An increasing number of companies believe supply chain excellence is critical to overall corporate performance. As one supply chain executive in the high tech industry told us: *"If forecasting and inventory planning for a manufacturer with complex product lines and short product lifecycles isn't a core competence, what is?"*

But executives might not see it that way. If supply chain management is viewed as a commodity function with limited ability to contribute to market share growth or improvements to the bottom line, they may view aspire only to "functional sufficiency" in a process area, not functional superiority.

The supply chain organization's vision for its end state – and the benefits to the overall company and its shareholders – must be communicated and "sold" to senior executives.

Every organization is different, but as the CIO of a major consumer goods

company who told us: *"We think with [the ERP vendor] there is about an 80% fit with our requirements. For us, though, we think it is in the last 20% where we can really drive differentiation and increase market share."*

> *"We think with [the ERP vendor] there is about an 80% fit with our requirements. For us, though, we think it is in the last 20% where we can really drive differentiation and increase market share."*
>
> *CIO*
> *Consumer Goods Company*

Step 2: Formally Assign Ownership for the Solution to the Business

In our research, we were surprised at how often it is unclear within a company who really owns the technology initiation - IT or the business. While companies that proactively identify the owner almost always assign ownership to the business or functional leader, in companies where this is not clearly articulated ownership in practice if not in name often falls more over to IT side. As one respondent commented: *"Who owns the initiative – well, that's a good question. At this point, I'd say it's a combination of logistics and IT."*

Of course, we want partnerships between the business and IT, and indeed believe cross-functional teams are essential to an effective process (see below). But lack of clear ownership of the initiative, process, business and results by someone – generally the business – will almost always lead to flawed decision-making processes.

Step 3 - Identify Business Objectives

This is a critical but frequently overlooked step. In the end, adoption of any new technology is not really about gaining additional capabilities, but achieving improved business results.

SCDigest believes the key to making the appropriate decision around ERP or best-of-breed is to focus primarily on the specific business results the project is going to achieve. By starting with targeted results, typically to be achieved over several years and multiple phases, companies can then align the process changes and technology requirements needed to meet these expectations.

We spoke with a few companies that had in fact used an approach based on business objectives. The VP of Supply Chain for a major consumer durables/appliances company put it this way during a one-on-one interview: *"We base all our decisions around business objectives. What are the specific goals we set over time in terms of inventory reduction, operation cost reduction, and cycle time improvement? The business owns these targets and is responsible for meeting them. We base our technology choices around which alternative offers the best promise of meeting or exceeding those targets."*

Sounds logical doesn't it? Alas, in practice few companies actually think or operate in this way. When we discussed this approach with the VP of supply chain with a major food manufacturer that was currently evaluating ERP and best-of-breed alternatives, his response was: *"Did they really do it that way? If they did, my hats off to them. Our decision process is too wrapped up in internal*

politics and other factors to say we are really focusing on business objectives."

> *"Our decision process is too wrapped up in internal politics and other factors to say we are really focusing on business objectives."*
>
> *VP Global Supply Chain*
> *Food Manufacturer*

Putting the focus on business objectives is a best practice in software selection that must be adopted by companies that wish to get their technology decisions right.

Step 4 - Form a Multi-Functional Team and Create Clear Decision Criteria

Selecting technology is not easy, even before the ERP versus best-of-breed wars. Our research indicates that far too many companies are entering this process without clear decision criteria that are accepted both by the project team and upper management.

Our evidence? We spoke with a few companies who spent literally 4-6 months evaluating and selecting best-of-breed planning vendors, only to have the selection of best-of-breed vendors overruled in favor of the ERP solution at the end of the process by executives.

What a waste of time and dollars for both the company itself and the BoB providers. If the decision is just going to be to go with the ERP solution for any number of reasons, then that decision should be made early in the process before wasting significant time and causing frustration for company personnel involved in an evaluation.

The decision teams should be cross-functional, and include representatives from operations, IT, customer service, maybe even finance. This will generate a balanced perspective, and enable each group to better understand the needs and issues of the other.

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Just as importantly, this group needs to be clear about what the evaluation process and criteria really. Documenting these criteria early in the process and getting upper management blessing is key – for example, how will the team and evaluation process balance between software capabilities and potential integration/support issues, and specifically how they will the differences between the alternatives be measured?

Too often, these issues are not brought forth and reconciled upfront, and instead lay submerged as IT and operations pursue different agendas. This is a mistake. As one respondent told SCDigest: *"This is not about making life easy for IT."* Maybe not, but on the other hand IT does have costs, standards, and concerns that should also be considered.

Get the issues and criteria on the table and agreed to from the top to the bottom of the organization early in the process, and the resulting decision will

be much improved and in the best interests of the company and its stakeholders.

Step 5 – Perform Detailed Reviews Of Capabilities And Development Plans Against the Criteria

Based on clear understanding the key business objectives and a cross-functional view of requirements and decision criteria, the next step is to perform granular reviews of the capabilities of both ERP and best-of-breed providers.

The key word is "granular" – this means going beyond "checklist" sorts of evaluations to understand the real capabilities of each solution and how they will work in your business. In general, this means doing detailed "scripted demos" that require vendors to demonstrate, using real data, the capabilities you require.

At the same time, focus on what really adds value and drives achievement of business objectives. Often, companies spend too much time on minutia or features that are either just "paving over cow paths" or which are peripheral to results achievement.

It is also critical to use this process to really understand how the solution will actually work in your business. This means moving beyond just raw capabilities to understanding how the software will support your work flow and how users will actually use the tool to do their jobs.

In planning, for example, it is not uncommon for companies to find out only after they have selected a software solution that it cannot adequately model their planning environment, often due to the inability of the vendor's core "data model" to support the company's needs. Companies must do the work – using true outside experts as appropriate, to understand how well the solution will really be able to solve their problems once its deployed.

By taking this approach (scripted demo, real data), you have maximized the chance that you will identify the functional fit with your requirements and business objectives and that the solution is usable in your business environment.

SCDigest recommends using the "day in the life" approach to scripted demos, using the software to demonstrate how key users will actually perform their jobs (inventory planners, forecasters, etc.). Importantly, whenever possible these scripted demos should be performed using some subset of your company's own data. By taking this approach (scripted demo, real data), you have maximized the chance that you will identify the functional fit with your requirements and business objectives and that the solution is usable in your business environment.

Step 6 - Find the Vendor Proof Points

All the demos and powerpoints in the world don't mean much unless the vendor has shown that these capabilities actually work and deliver the promised results in other companies like yours. Unfortunately, many companies really don't put a lot of effort into answering these questions. Instead, site visits and

reference calls generally ask question about of general satisfaction, how long the process took, etc.

> *Site visits and reference calls too often don't focus on linking vendor capabilities to results.*

These are good things to know. But more important is asking questions about the use of the specific capabilities your company has defined as critical to achieving the business results that formed the basis of the project. Are you planning on improved replenishment planning to reduce inventory costs and out-of-stocks? Then ask prospective vendors for examples of companies with profiles that have achieved strong results using the vendor's capabilities.

These reference checks should also focus heavily on **time-to-value**. SCDigest research indicates that time-to-value is an increasingly important criterion for many companies. Extended deployment times also substantially increase risk and a variety of other pitfalls.

Relying on proven capabilities to deliver results as a key basis for your selection of any vendor, whether ERP or best-of-breed, substantially reduces risk and moves the decision process to a much more fact-based approach.

> *Companies should also focus on time-to-value. SCDigest research indicates this is an increasingly important decision criterion, and extended deployment times substantially increase risk and other pitfalls.*

To date, we believe that ERP vendors lack many actual proof points of advanced capabilities, so this approach for now may tend to favor best of breed. But this approach is forms also a challenge to best-of-breed vendors to make sure they can demonstrate the link between capabilities and results, which sometimes they cannot do.

Step 7 – Evaluate How the Software Will Adapt to Meet Changing Requirements

We are in an era of constant supply chain change, change which seems to be accelerating.

A big issue of dissatisfaction with ERP and in some cases BoB solutions is that they are too hard or costly to change. Make sure you require both vendors to demonstrate how they can adapt based on specific scenarios that are potential or likely in your business.

For example, if you change strategies around product postponement, how will the software be able to support those changes? Planning and collaboration if key components are moved offshore?

This should not be a "stump the vendor" exercise, but should encompass some reasonable scenarios that could be encountered. The idea is not so much to understand support for that specific process change, but rather to get a feel overall for how flexible the software solution will be over time and include that as part of your decision criteria.

Step 8 - Calculate a Detailed, Multi-Year TCO and ROI

Common sense says that in making a selection between best-of-breed and ERP vendors, understanding the total lifecycle costs and benefits of each alternative should be a critical input to the decision. Yet, our research shows that relatively few companies perform detailed total cost of ownership (TCO) and return-on-investment (ROI) analyses across both ERP and best-of-breed solutions over a 5-7 year horizon.

Of course, this takes time and effort, but will yield incredibly important insight, including:

- What are the true costs that will be incurred over time (5-7 years) between ERP and best-of-breed?
- What are the expected time-phased returns from each investment?
- What is are the comparative ROI for each solution, and what is the impact on profits and cash flow?
- Which solution will provide a quicker "time-to-value?"

To perform this analysis, critical assumptions will have to be made, often based not only on facts but also in part on educated guess work. SCDigest believes it is critical to have all the assumptions about costs and returns clearly stated and understood by the project team and upper management, and also **to share these projections about TCO and ROI with ERP and best-of-breed vendors for their respective solutions.** Why? Both to test assumptions and estimates, and also because each vendor may have ideas, especially in the TCO area, about how to drive improve numbers.

It is critical to have all the assumptions about costs and returns clearly stated and understood by the project team and upper management, and also to share these projections about TCO and ROI with ERP and best-of-breed vendors.

As one CIO told us: *"Assumptions about TCO can have a huge impact on the numbers."* Unfortunately, the assumptions that underlie both TCO and ROI are often unclear and/or unchallenged.

Self-Analysis Model

One final way to think about this is to consider your supply chain and what you are trying to achieve in context. While going through the detailed process steps summarized above is the right way to make this decision, SCDigest has also created for this report a simple model that can help companies quickly assess where their company may fit in terms of ERP versus best-of-breed by considering their placement on two dimensions: operational complexity and the strategic versus tactical nature of the project.

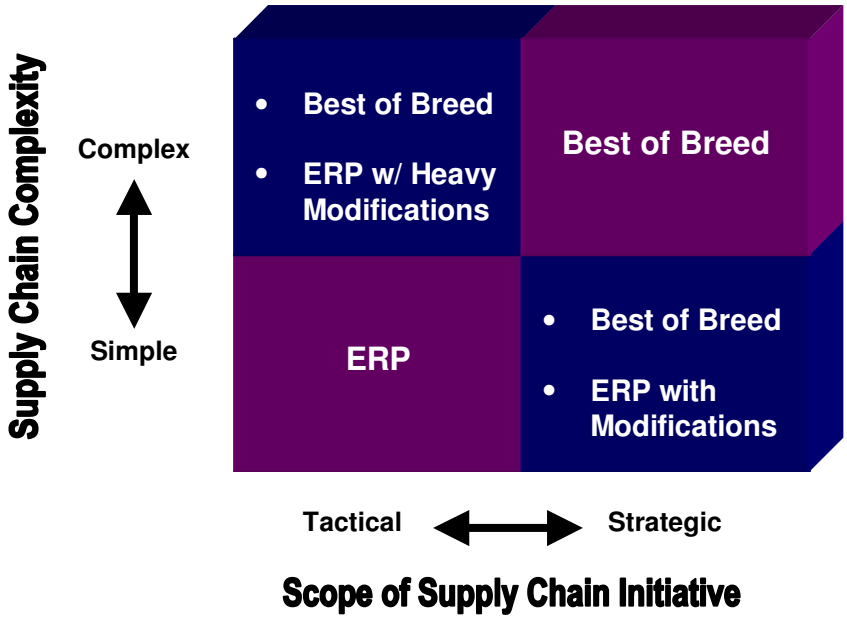
For companies with a simple supply chain or a simple operation or function, and very tactical goals for the project, the ERP solution may well be the best fit.

Conversely, if you have a complex supply chain and you have truly strategic goals for improvement, for now at least, best of breed is really the only choice.

> *If you have a hybrid scenario (either supply chain requirements are not complex or the initiative is not strategic, ERP is an option but may involve perhaps heavy modifications to meet the business goals and process requirements.*

If you have a hybrid scenario (either supply chain requirements are not complex or the initiative is not strategic), ERP is an option, but is likely to require heavy modifications to meet business goals and process requirements. Those modifications will add to the total cost of the ERP solution, and potentially to the risk, though in fairness it is still common in some cases for best-of-breed solutions to require custom modifications as well.

What is Your Decision Scenario?



Summing It Up

SCDigest is the first organization to comprehensively address the ERP versus best-of-breed supply chain planning software decision environment. Based on substantial and detailed survey data and one-on-one interviews, we have provided what we are confident is the most thorough analysis of this issue to date.

There is no single correct answer or simple tool that can be used to make this decision. Our research shows that companies are using a wide variety of approaches to this analysis, and that many of those decision processes could be improved.

While it is clear that a company cannot prosper with "application chaos", or an overwhelming collection of disparate software vendors and technologies, we are also unsure that companies can maximize success with a single vendor approach. We believe that having one or two core supply chain vendors on top of an ERP backbone is unlikely to cause unaffordable integration costs and effort, and that today this approach is more likely to deliver the capabilities that companies need to achieve business objectives. This perspective would be tempered by the complexity of the company's supply chain requirements, and the importance of its supply chain functions. The level of advancement in capabilities by both ERP and best-of-breed vendors over time will of course also impact this analysis.

We have offered an eight-step approach that we believe offers a solid model for making this software decision. If followed, it will enable companies to make an improved evaluation between ERP and best-of-breed alternatives by including a cross-functional perspective, focusing on true business objectives and actual ROI and TCO, using a more objective, fact-based approach, and having a bias towards vendors that have proven proof points of the capabilities and results you need.

We welcome your comments and questions regarding the material in this report. Please email SCDigest at feedback@scdigest.com.

Supply Chain Planning Vendor Profiles

i2 Technologies

Logility

Manugistics

Steelwedge

i2 Technologies

Variability: The Only Constant

Today's business world is more complex than ever. The traditional view of the supply chain as a straightforward path from suppliers to end consumers has become obsolete. Facing mounting competitive pressures, companies are forced to increase product assortments exponentially to meet customer needs; to speed new product introductions to seize fleeting opportunities; and to ship through multiple distribution channels to reach diverse end users.

There is only one constant in today's business world: Variability. The new measure of success is how well executives can deal with the continuous change that has become a reality of business. Today's executives have an important ally in their struggle to manage—and, in fact, *master*—variability. That partner is i2.

The i2 Advantage

Founded in 1988, i2 has helped more than 900 customers—leaders in their respective industries—view supply chain variability not as an obstacle, but as a competitive advantage.

i2's approach is taking supply chain management a step further—by using advanced technology and a broad underlying architecture to enable a *real-time* reaction to change. The performance of i2 solutions—their ability to gather data almost immediately, as well as conduct root-cause analyses of plan deviations—is enabled by i2's web-based Supply Chain Operating Services (SCOS) architecture. SCOS makes it easier to gather and consider data from across the supply chain—from multiple departments, trading partners and information systems—thus creating shared focus an inherently achievable goal.

This ability to close the loop between planning and execution can help enable companies to transform into agile enterprises. To be agile, companies must eliminate the walls between different silos within their own business—as well as the boundaries between their organization and many trading partners -- to improve decision-making, access essential data, and coordinate interaction with suppliers and customers. Executives can finally respond to demand fluctuations, competitor moves, delivery obstacles, and other unforeseen changes almost immediately, based on real-time intelligence.

i2 offers solutions to better manage key business processes: Sourcing and Procurement; Supply and Demand; Order Fulfillment; Transportation and Distribution; and Service & Parts Management.

By gathering information from across the entire supply chain, i2 solutions can enable customers to implement a closed-loop cycle of "planning, doing, checking, and acting" that enables them to achieve their plans by making constant adjustments that keep the entire supply chain on track.

Contact Information:

www.i2.com

877.926.9286

Logility

Comprehensive, collaborative supply chain planning solutions

Financially stable and debt free, Logility delivered its first collaborative supply chain planning solution to the market in 1996. Today, the company has over 1,100 customers in distribution-intensive markets such as consumer goods, apparel, specialty retail and aftermarket service parts, and the largest installed base of active supply chain planning users.

Logility's robust solutions for collaborative demand, inventory, replenishment, sourcing and manufacturing planning make them industry favorites. Voyager Demand Planning generates forecasts at multiple levels across a business and then communicates the forecast to Logility Voyager Inventory Planning and Replenishment Planning, which balance the trade-off of inventory investment and desired customer service levels to dynamically set time-phased inventory targets based on specific customer, safety stock and order quantity rules. Voyager Global Sourcing automates the sourcing process to collaborate with production partners worldwide and improve quality and on-time receipt of inbound goods. Voyager Manufacturing Planning enables planning and scheduling for constrained production facilities to reduce changeovers, lower costs and increase product availability.

Logility supply chain planning customers include Bissell, Huhtamaki UK, Katun Corporation, Pernod Ricard, Rand McNally, Sigma Aldrich and VF Corporation. Most Logility customers realize substantial bottom-line results in record time, with typical benefits including increased revenues, reduced inventory costs, improved forecast accuracy, decreased order cycle times, optimized production scheduling, streamlined logistics operations, reduced transportation costs and improved customer service.

In addition to comprehensive supply chain planning, Logility offers transportation and warehouse solutions to optimize warehouse operations, improve perfect orders, and reduce transportation costs. Overall, Logility Voyager Solutions™ address supply chain challenges with performance monitoring capabilities in a single Internet-based collaborative framework and deliver supply chain visibility; demand, inventory and replenishment planning; supply and global sourcing optimization; manufacturing planning; transportation planning and execution; and warehouse management. The products can function independently or as an integrated solution to address a wide range of global supply chain challenges. Logility Voyager Solutions integrate easily with most ERP or other supply chain management systems.

For more information about Logility and its ability to help companies improve demand, inventory, replenishment and manufacturing planning for dramatic financial and operational improvements, please call 404-261-9777 or visit www.logility.com.

Contact Information:

www.logility.com

404-261-9777

Manugistics

Manugistics offers the industry's most proven demand and supply chain solutions, including enterprise applications and infrastructure products, strategic consulting, and implementation services. Around the world, Manugistics solutions are helping companies grow revenue and profits by enabling them to improve customer service, lower costs, source more efficiently, reduce inventory, and price optimally. Working seamlessly on the foundation built by ERP and legacy systems, Manugistics solutions optimize strategic and planning decisions, drive flawless execution, and help companies wring exponential value from their existing systems.

In a world of increasing uncertainty, our solutions also provide essential capabilities for planning and executing rapid responses to disruptive events and for maintaining supply chain integrity to safeguard products, assets, employees, and the public. Our customer base of more than 1,200 clients encompasses large, multinational enterprises - including six of the FORTUNE 10® and eleven of the FORTUNE 20®.

Manugistics Supply Chain Management solutions are designed to help take supply-side planning, execution, and collaboration to new levels of effectiveness by providing control over the activities required not only to source, make, store, and move goods but also to service and maintain a company's assets and those of its customers.

Manugistics Demand Management solutions help companies not only offer the right product to the right customer at the right price, but also manage the entire order and inventory fulfillment process.

By understanding the requirements of each client's industry and the specific demands of their business, we provide the right solutions and implement them rapidly to shorten the time to value.

Combining the strength of our Web-WORKS architecture with the expertise of Manugistics Consulting Services, our solutions help drive better business decisions throughout the demand and supply chain.

Contact Information:

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Steelwedge

Enterprise Planning and Performance Management

Steelwedge Software is the leading innovator in the emerging field of Enterprise Planning and Performance Management (EPPM), helping manufacturing companies to create, validate, and synchronize functional plans, align them with business and financial targets, and gain executive visibility and control over enterprise performance.

Facilitate Planning, Execution and Performance

Maintaining sales force effectiveness, ensuring strong margins, supporting high order fill-rates, avoiding large inventory write-offs, and managing regulatory compliance requires manufacturers to formulate strategic, tactical and supply plans based on a realistic view of demand. That's why in today's uncertain economic environment, enterprise planning processes have become business critical.

While millions of dollars in SCM, ERP and CRM system investments have helped improve efficiencies within each area of the organization, these systems were not designed for improving business performance and facilitating cross-functional business planning. As a result, most companies still rely on spreadsheets to support executive-level planning, while source data remains buried in enterprise systems. Yet spreadsheets lack the data management, analytics and process automation needed to reconcile and align functional plans and drive executive decision-making.

Create an Enterprise Plan of Record

Steelwedge Software does what spreadsheets and enterprise systems cannot - we enable business planning for the demand-driven enterprise by providing visibility, collaboration and performance management across sales, marketing, finance, and supply chain operations. Our Enterprise Planning and Performance Management solution helps manufacturers accurately assess market demand, clearly align their customer, product, inventory, production and business plans and closely monitor operational, financial, and sales performance.

Steelwedge solutions allow you to leverage your existing enterprise infrastructure to create an Enterprise Plan of Record that can vastly improve your sales plans, demand plans, sales forecasts, new product introductions, revenue and margin plans and Sales and Operations Planning (S&OP) processes. Steelwedge gives you the visibility, control and accountability you need to quickly respond to changes in the marketplace, as well as regulatory compliance and Sarbanes-Oxley requirements. Furthermore, Steelwedge enables you to improve sales force effectiveness and enforce accountability across you sales organization.

Steelwedge understands that its customers require simple, powerful, easy-to-use, high value, low risk solutions. Therefore, we have developed break-through technology which marries the power of Excel and Web Servers with the strength of a centrally-served solution. Steelwedge offers quick-to-implement hosted, on-demand solutions, and traditional server-based enterprise solutions.

Product Modules

Steelwedge product modules leverage our breakthrough EPPM technology platform to address the specific planning and performance management challenges faced by sales, marketing, operations, and finance executives. The Steelwedge solution is deployable on-premises or OnDemand. Modules include:

- **Sales Pipeline Intelligence**
- **Sales Opportunity Planning**
- **Product Lifecycle Planning**
- **Consensus Demand Forecasting & Planning**
- **Product Configuration Planning**
- **Sales & Operations Planning**
- **Revenue & Margin Planning**
- **Performance Management**

Blue-Chip Customers and High ROI

Steelwedge customers in the discrete manufacturing industries, such as AFC, Enterasys and Tellabs, report significant ROI. To learn more about how Steelwedge can help your company, contact us at 925 249 3400.

> *"Steelwedge's breakthrough Enterprise Planning and Performance Management solution solves the core challenges faced by companies today – I would highly recommend that any executive responsible for corporate strategy or planning seriously consider Steelwedge"*
>
> *- Dr. Tom Mentzer, August 2003*

Contact Information:

www.steelwedge.com

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About SupplyChainDigest

SupplyChainDigest™ is the industry's premier interactive knowledge source, providing timely, relevant, in-context information. Reaching tens of thousands of supply chain and logistics decision-makers each week, our flagship publications - SupplyChainDigest and SupplyChainDigest – Logistics Edition, and web site (www.scdigest.com) deliver news, opinions and information to help end users improve supply chain processes and find technology solutions.

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