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Advanced Planning System Implementations

A Four-Year Analysis of Results and Benefits

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After a series of negative articles in the press, we decided to find out what the true story was - were Advanced Planning Systems (APS) a good investment for most companies? To answer this question, ChainLink Research analyzed the results of over two thousand APS projects.

The bottom line: customers have been satisfied overall, and a significant majority would buy again from the same vendor. Only about 10% of companies are dissatisfied with the software, which is about average for the software industry. The renewed and real focus by APS vendors on customer satisfaction, combined with avoidance of the common end user and consultant pitfalls that contribute to project problems, mean companies will drive real value from the vast majority of APS projects.

This article is a synopsis. The full report is available from ChainLink Research.

Advanced Planning System Implementations

Executive Summary

ChainLink Research has directly talked to hundreds of Advanced Planning System (APS) users. That experience, combined with unique access to multiple software vendor performance data, was used to generate the content in this report. This core data was supplemented by working with software vendors to engage in more detailed discussions with leading implementers of APS solutions. This report will not be the last word on this subject—but it is the *most definitive to date.*

Key findings from this research includes the following:

- APS implementations did suffer from a period of declining success around the 1999-2001 time frame, due to a variety of factors, many of them related to the overall overheated technology climate in users and vendors during that time.
- Since then, APS module-by-module implementation times among the top APS vendors has become streamline and predictable.
- Software vendors are playing a more active role in the implementation of their solutions than in the past. Frequently today, vendors are implementing the whole program without use of outside consultants.
- The roles and engagement of the implementing company's own users and its vision for how the system will be used, remain the key factors for APS deployment success—as it always has and will be.

- Best-of-breed APS vendors still are driving the majority of supply chain transformation, and have the preponderance of the installed base.[1] At this point, they are also most willing to talk about their successes —we were not able to gain participation by most ERP vendors.[2]

- Most users are driving significant operational benefits from APS implementations.

Business Scenario

APS is implemented at some level in most of the major Fortune 1000 firms today. Despite the drive to reduce the number of active vendors by many enterprises, the larger corporations still often have multiple APS vendor solutions across the enterprise. However, because of this penetration of APS systems within the largest companies, new implementations in the top tier have become less common; when new deals are made, they are often major financial wins for the selected APS vendor. Even in this market, there are still seven figure deals, usually repeat business at an existing customer, which demonstrates customer confidence in a successful outcome.

The major APS vendors, in spite of a down market, have made significant architectural and functional improvements in the last two year, adding additional capabilities such as improved collaboration works flows, pricing optimization and analytics, and adding web services platforms to improve inter-enterprise access and improved ease of integration. Despite these strong functional improvements, the skepticism that arose in some quarters over the past few years is hurting the growth of these companies. Without an objective look at yesterday, it will be hard for customers to move ahead to tomorrow with confidence in these firms and their solutions.

[1] Total implemented projects in the several thousand range.

[2] Most of the analyst firms have reported this same issue. ERP players overall have not been able to produce consistent numbers of references.

Research Framework

ChainLink was given an unprecedented view into a large amount of data by APS technology firms[3]. We reviewed vendor customer data and implementation data, supplemented by conversations with several hundred users of APS systems. Much of this data was made available under NDA. ChainLink acted as a neutral third party; reviewing data from technology firms that agreed to participate in the research. The data is therefore aggregated across customers and vendors, and provides significant insight into trends and reality about the APS sector.

Assessing performance across many different firms is quite challenging. Although we asked for specific data over a four-year period from 1999-2002, we had to reconcile different methods of data collection and reporting. However, combining this data with interviews with customers about these issues has enabled construction of an accurate picture of the history of APS implementation success, and what is happening today.

There are many modules included under the APS umbrella. For this research, we decided to look at the four most commonly deployed solution categories:

- Production Planning/Scheduling
- Demand Planning
- Transportation Planning
- Supply/Master Planning

There are 2937 implementations of these modules from the vendors included in this research.[4]

[3] Adexa, i2, Manugistics, Logility, JD Edwards (now PeopleSoft), and webplan were the top case study contributors.

[4] The number of APS projects reviewed over four thousand, but we could not reconcile to all the data.

Implementation Data

We looked at the implementation picture for a four-year period, from pre-hype, through the boom period, through 2002. Figure1 illustrates this history. APS implementation times were long on average from 1999-2001, peaking in 2000, which not coincidentally was the year with the most APS individual projects. Deployment times (which often are closely linked with perceived business results and user satisfaction – the longer the implementation, the less satisfactory are the perceived results, and generally the higher the total project costs) began declining in 2001, and dropped sharply in 2002.

The long implementation times (and related decrease in customer satisfaction) during the 1999-2001 time frame, led to many of the negative market perceptions created regarding APS solutions. It is important to remember, however, that significant investments were being made at that time not just in APS systems, but in virtually every software category (ERP, ecommerce, etc.) As a result, there was more spending on software and IT than most organizations had the capacity to successfully absorb.

During these peak years, there were large numbers of both software vendors and consultants in the market. It is clear now, however, that there was at the same time, a shortage of the right expertise - the seasoned consultant (from the vendor or separate consulting firm) who could clearly understand business processes and their relationships to software capabilities. The ability of both vendors and users to maintain focus was also constrained. As a result, often a lot of perceived “pain” was involved in getting projects implemented. A number of companies needed to “restart” previously initiated projects. A few overly publicized, and not always accurate “failures”, were reported by the press.

Many companies played “musical chairs” with their consultants, but despite this environment, in reality very few companies actually dumped their incumbent APS vendors. The biggest problems from a vendor perspective was that new projects – with existing or new customers, declined significantly due to these sub-par results during these times.

As ERP players entered the market, their users also encountered problems. In fact, the introduction of new APS software was a great challenge to vendors and users. One user’s Demand Planning project

provides an example, based on the following numbers: 18 months and a large staff of consultants. Compared with the statistics from our research (Figure 1), this deployment time was *well above the average*. But, not much information was available on ERP APS deployments, and some firms felt it was better to try this path based on long term perceived value in a single vendor strategy.

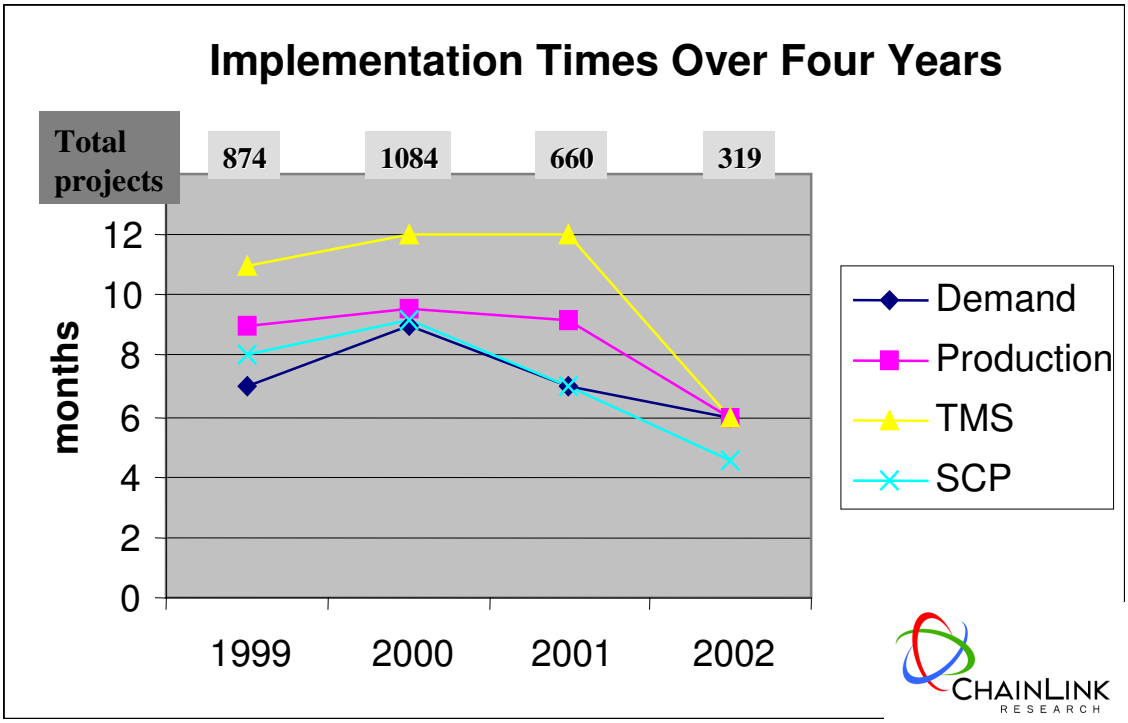

Figure 1

Importantly, starting in 2001 and then accelerating in 2002, APS implementation time frames started dropping across the board. For example, in 2000, a production planning/scheduling solution on average took almost 10 months to implement. By 2002, this cycle had dropped to only six months - a 40% reduction in total project time. This reduced project time translates into lower project cost and faster time to benefit, and therefore higher project ROI. In general, faster deployments also translate into higher levels of perceived project satisfaction.

Although this research does not include 2003 data, evidence and experience from the past year indicate this is a permanent trend – implementation times for APS solutions continue to decrease. This is a result of several factors, including improved functionality (and therefore better functional fit) in APS solutions, improved staffing and focus on implementation success by APS vendors, improved tools and

experience in integrating these tools with other enterprise applications, and better understanding by users on how to improve implementation processes (see next section below).

Less Successful Projects Show Consistent Themes

Based on discussion with many users as well as software firms, it is clear a combination of several factors led to poor declining implementation results and some sense that not enough value was gained. In forming our opinions, we weighed the opinions of real users more heavily than vendor project data —since that's what really counts.

Many of the delayed or failed projects had certain elements that were consistent. The most important of these factors included the following:

- The deal was signed based on not yet developed software.
- Similarly, companies found important gaps in the out-of-the-box fit of the software to business model. It was expected that these gaps would be addressed through consulting and custom software development.
- Operational results were dependent on high-risk business process changes that it was expected would be enabled by the software.
- These deployments were characterized by changes in project teams, business management, or company ownership/structure, with the turmoil causing projects to flounder.

Vendors of course also played a role in the implementation issues. Some of the key vendor factors included:

- Late delivery of key resources to projects.

- Creating additional project complexity. Many users complained that vendors pushed additional functions or modules beyond the original scope. The push to use many modules sometimes made sense, but frequently pushed users above their "digestion point", as one user called it.

The above lists represent the most prominent factors that led to declining APS project results. There were also a series of secondary issues than can impact project success that are worth mentioning to provide guidance to project managers/sponsors, technology providers, and consultants, to avoid potential issues on future APS deployments.

User Issues:

- Project management resource or skill set limitations
- Lack of organizational alignment
- Resistance to adapt to best practices in Supply Chain Management. One user told us: "We had an 'exotic approach' that was built up over years. We were looking to model the software to that. Well, these guys don't really sell software that does that. Nobody did. One of us should have changed. In this case, it was *us*. Now that our company has been sold, we have been forced to readdress the process. We recently started a new project, which went pretty smoothly."

Vendor Issues:

- Late delivery of promised software components
- Push for users to try "early releases" of the software, which often was "buggy" (this was mostly applied to SCP modules).
- Poor turn-around time on responding to software issues

Consultants:

- Lack of sufficiently knowledgeable and experienced staffing generally, especially for large projects. Several companies told us that consultants positioned themselves as possessing knowledge in constraint-based planning, but did not actually know much. One company

humorously noted: “Every consultant who came here would tell us, ‘I worked with Eli Goldrath on his book’”.[5]

- Lack of knowledge of the specific software modules being deployed

As always, the reality is that many factors are involved in a software project not going as well as expected. One CIO we spoke to stated, “Anyone who blames the vendor for the lack of implementation doesn’t know what he is doing. *You* have to manage the project well. Implementing these systems is not a nine to five job. You have to take care of the people, get consultants who really have the correct knowledge by modules.”

Another stated, “You have to bring them on (consultants) module by module, resume by resume”.

In general, the deployment problems were the result of a lack of attention to key details by all parties involved (users, vendors, consultants). The good news is that in the current market, vendors now have a much more focused approach — fewer projects and more attention to their customers.

APS Solution Benefits

After looking at the factors that led for a short period to declining results for APS implementations, we also studied actual user benefits from deploying these solutions. The good news – despite some of the implementation challenges in the 1999-2001 period, most companies in the end still realized significant operational improvement. Figure 2 shows a ranking of the key benefits achieved by companies deploying APS solutions, as measured by key traditional supply chain metrics (inventory improvements, reduction in cycle times, etc.).

Beyond these significant traditional benefits, many users also reported the APS software as being key to more fundamental results and

[5] Eli Goldrath, author of “The Goal”

business transformation: significantly increased market share, capturing and keeping customers and segments; achieving significant process improvement, such as Sales & Operations Planning processes; globally integrating their supply chains; and increasing collaboration and "intimacy" with customers.

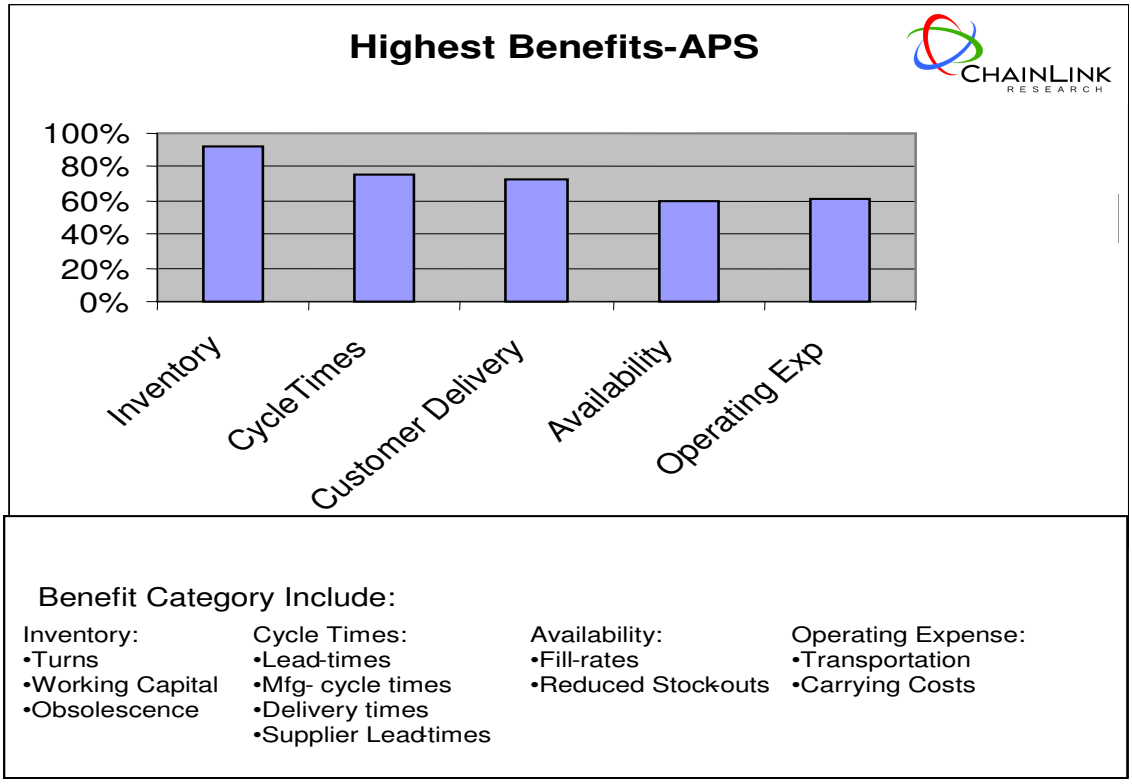

Figure 2

Conclusions

The most important conclusion from this research is that the noise about APS system implementation problems – some real, some imagined - are mostly now behind us. There is still significant new business activity in improving supply chain performance (outsourcing, channel integration, increased collaboration, "lean" approaches, creating real-time, wireless networks to support global chains, etc.).

Many users are looking to leverage their investments in their relationships with their APS vendors to enhance their business processes and support these new initiatives. To some extent, market

perception of APS solutions and vendors at an aggregate level is a "hangover" of the boom years, even though most of those issues have been substantially addressed.

The APS software firms across the board have significantly increased their focus on customer satisfaction. Customers are buying more products from their existing Supply Chain Management vendors, indicating they must be seeing real value in the results. In fact, in the rough technology-buying climate of the past few years, many firms have reported repeat business with up to 70% of their customer base.

Figure 3 shows the customer satisfaction across all implementations. 81% were satisfied or mostly satisfied with the results of their implementations. Of the 19% that were mostly dissatisfied (dissatisfied or needs remedial action), 11% were optimistic that existing issues could be resolved.

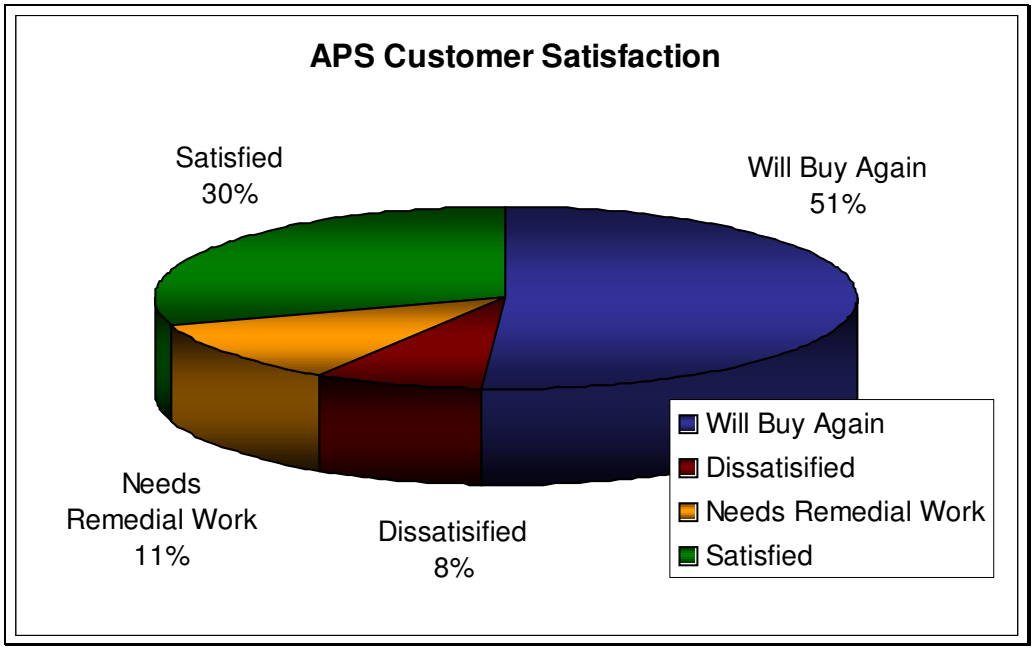

Figure 3

Summary

After the boom years of 1991-2001, APS solutions were tarnished in the press and more generally as not delivering the expected results. This research, involving analysis of literally thousands of projects, shows that while for a variety of reasons many users and vendors did experience an increase in project implementation cycles and some resulting dissatisfaction, but that nevertheless in the end real business benefits were realized, both in traditional supply chain metrics, and in serving to enable broader supply chain initiatives.

It is also true that since that time, users and vendors have gained experience in how to successfully implement these types of solutions, and avoid some of the factors that led to elongated and unfocused projects. At the same time, APS vendors have made functional and technical improvements in their solutions that also make system implementation easier and less expensive.

Understanding the factors summarized in this report that lead to poor project results – and proactively taking management action to avoid them – will result in the vast majority of users to experience successful APS projects with high ROI. The continued purchases by existing APS customers of additional solutions (new capabilities, or adding existing capabilities to new business areas) is evidence that users still see significant value from leading APS solutions.

About ChainLink Research

ChainLink Research is a Supply Chain research organization dedicated to helping executives improve business performance and competitiveness through an understanding of real-world implications, obstacles and results for supply-chain practices, processes, and technologies. The ChainLink Inter-Enterprise Model is the basis for our research; a unique, real-world framework that describes the multi-dimensional aspect of links between supply chain partners.

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