2014 SUPPLY CHAIN PLANNING BENCHMARK STUDY

An overview of strategies, practices, and trends

SupplyChainDigest™

Your First Stop for Supply Chain Information

Study Overview

The focus on supply chain planning excellence has never been higher.

Companies now well understand that aligning planning and execution across the company has moved from competitive advantage to competitive necessity, and that closed loop, integrated planning and execution processes can be achieved.

Planning technology is also changing rapidly, with improved modeling capabilities, dramatically faster processing times, better integration across modules, Cloud-based technology, and more.

This report is based on the findings of a major study of supply professionals conducted in late summer 2013. More than 300 responses were obtained, across virtually every industry.
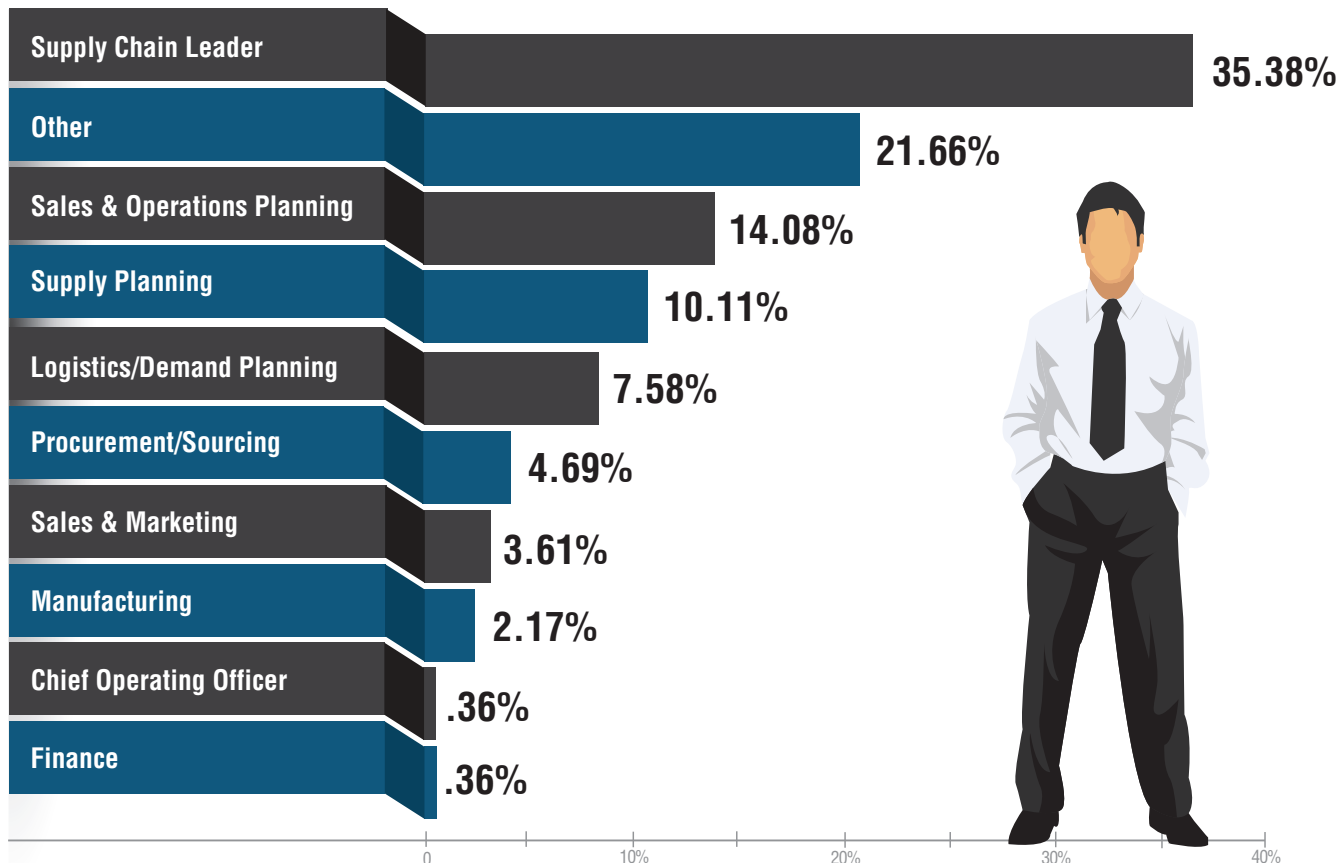
Here, we provide a detailed look at those responses, and identify key trends that are currently driving the industry. We believe this is the most detailed study of supply chain planning that the industry has seen to date.

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Survey Demographics

Participants come from a wide variety of roles, including a high response from executives.

What best describes your Supply Chain role...

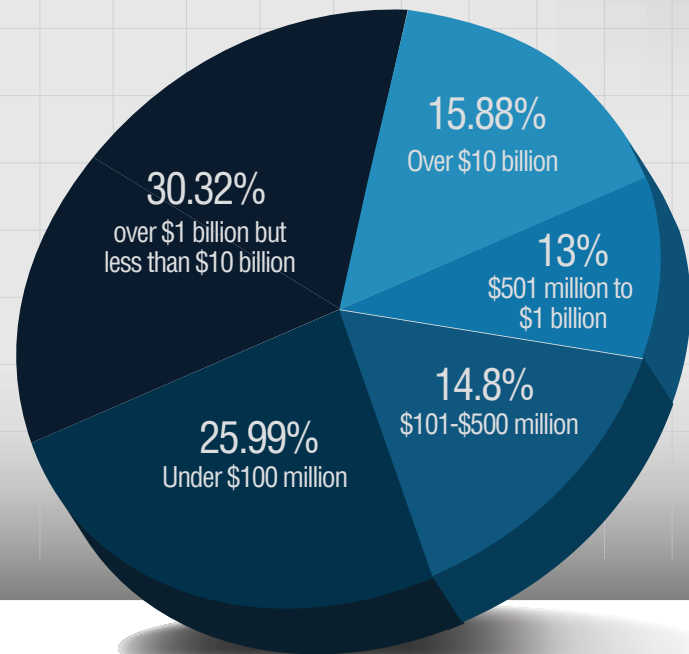| Role	Percentage
Supply Chain Leader	35.38%
Other	21.66%
Sales & Operations Planning	14.08%
Supply Planning	10.11%
Logistics/Demand Planning	7.58%
Procurement/Sourcing	4.69%
Sales & Marketing	3.61%
Manufacturing	2.17%
Chief Operating Officer	.36%
Finance	.36%

Are your answers relative to an entire company or a division/SBU?

Just over half were answered from an entire company perspective, while 45% were commenting from a division/SBU view.

Entire Company — 54.15%

A Division/SBU — 45.85%
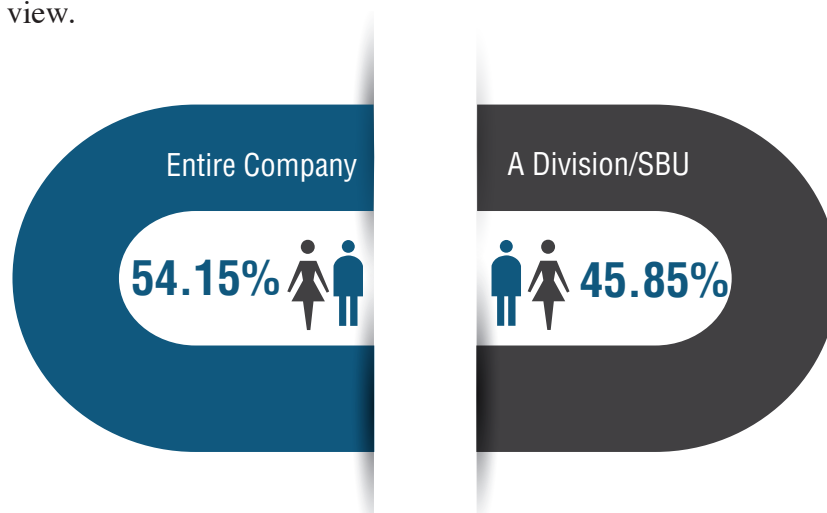
There was a good balance across different sizes of companies. Keep in mind the 45% answering from an SBU-perspective are by definition actually from larger companies, so that the actual company size pool is in reality shifted up a bit from these results.

We performed some analysis on companies by size across the different metrics we tracked, and did not find a noticeable difference across size levels.

Approximately what size are the revenues of the relevant company or business unit?

- 15.88% Over $10 billion
- 13% $501 million to $1 billion
- 14.8% $101-$500 million
- 25.99% Under $100 million
- 30.32% over $1 billion but less than $10 billion

Example Survey Respondents

We received survey responses from many well-known companies, as shown below:

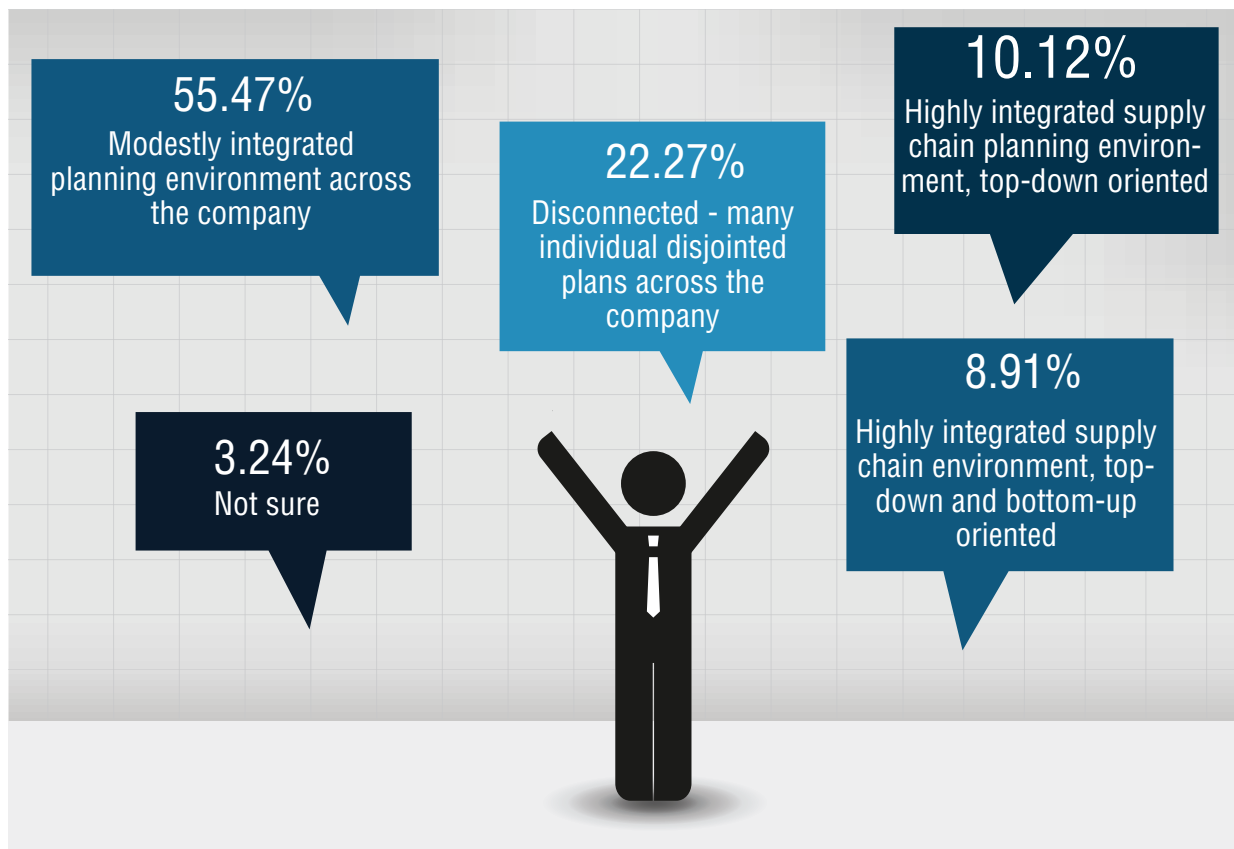|				
Johnson & Johnson	Air Products & Chemicals	USG	Home Depot	General Mills
Dupont	Eaton	Target	Caterpillar	Dentsply International
Eastern Produce	Jacobson Companies	Ferguson Enterprises	Teva Pharmaceuticals	Agilent Technologies
Intel	Whirlpool Corporation	Springs Window Fashions	Intuit	Dow Corning
Air Liquide	Raymond Corp.	Albèa	Flextronics	Diageo
Campbell's Soup	Agripac	Hitachi	Phillips Electronics	Kimball Electronics
Li & Fung	Colgate-Palmolive	NCR	Schneider Electric	L'Oreal
Evonik Corp.	Celestica	Pfizer	Unilever	Dell
Procter & Gamble	Emerson Electric	HP	Ingersoll Rand	Grainger

Survey Results

As can be seen, few companies see themselves as having a highly integrated planning environment. Under 10% see themselves as having mastered top-down and bottom-up planning, while almost three times that many say they have largely disjointed planning environments.

That said, we suspect these results are much better in 2013 than they would have been five years ago, as many companies have done a good job of better integrating planning processes driven from "one number" forecast.
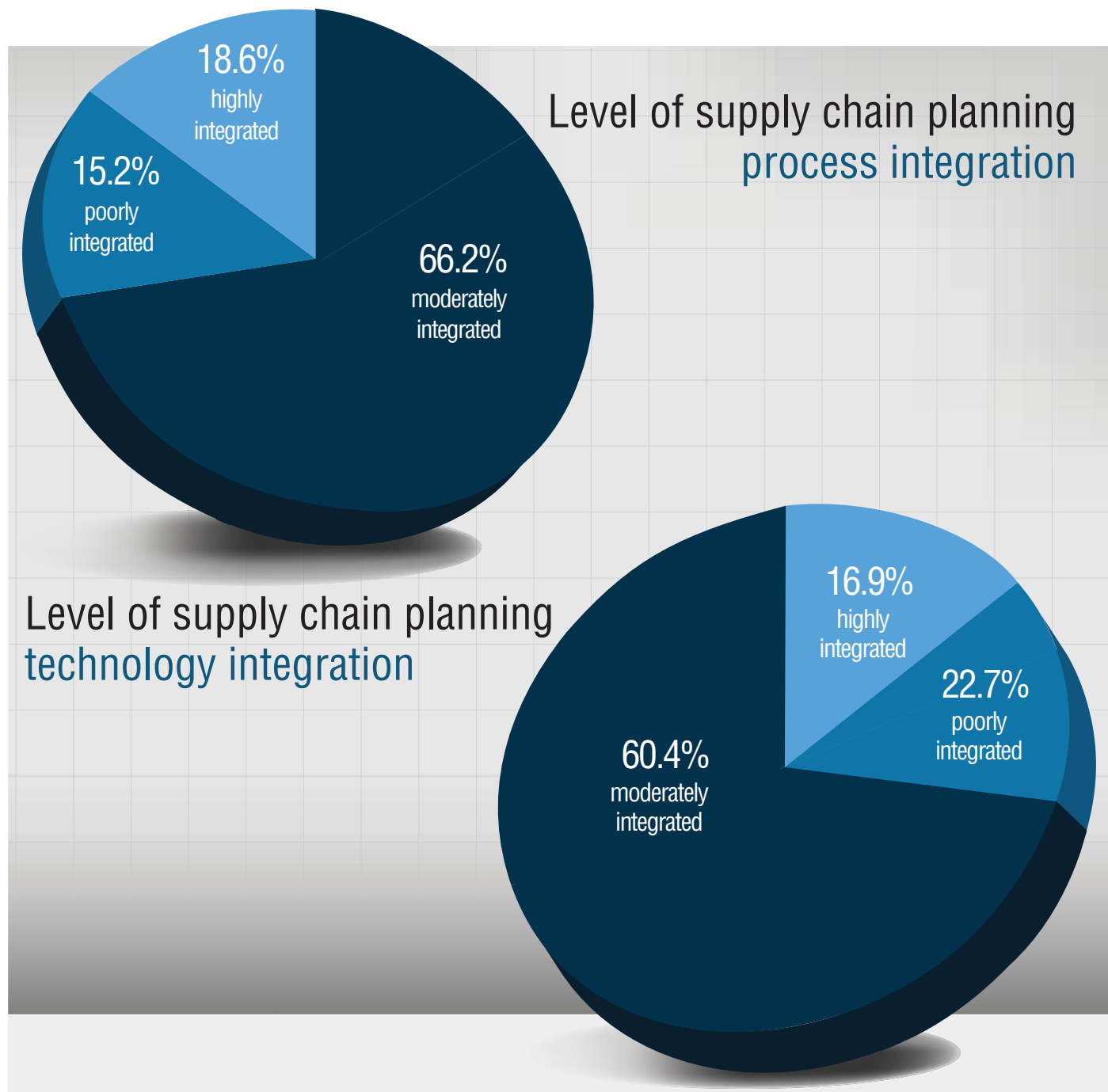
What best characterizes your internal supply chain planning environment today?

55.47%
Modestly integrated planning environment across the company

22.27%
Disconnected - many individual disjointed plans across the company

10.12%
Highly integrated supply chain planning environment, top-down oriented

8.91%
Highly integrated supply chain environment, top-down and bottom-up oriented

3.24%
Not sure

The Bottom Line...

Very few companies have well mastered the art and science of supply chain planning, while a sizable percentage are in very early stages of maturity.

Just how integrated are planning processes and technologies? The strong majority believe they are only moderately integrated in either area.

Level of supply chain planning process integration

- 18.6% highly integrated
- 15.2% poorly integrated
- 66.2% moderately integrated

Level of supply chain planning technology integration

- 16.9% highly integrated
- 22.7% poorly integrated
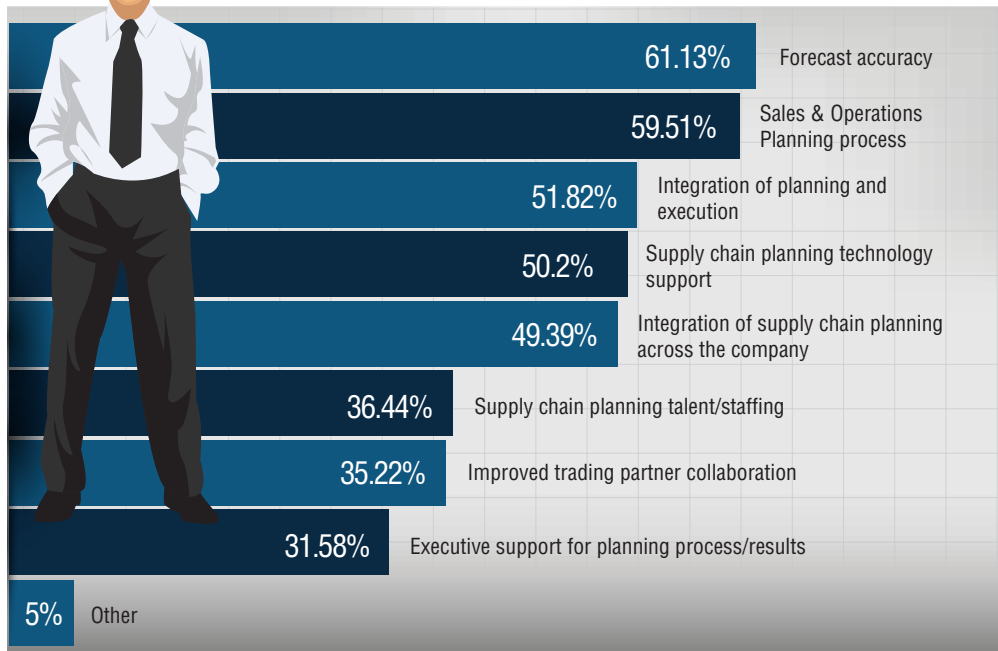- 60.4% moderately integrated

The Bottom Line...

Most companies, not surprisingly, are just moderately integrated in planning processes and technology – but a sizeable group that has made it shows that companies can become highly integrated.

Opportunities for Significant Improvement

In which areas do you believe your company has significant opportunity for improvement, which would lead to better supply chain planning results?

Category	%
Forecast accuracy	61.13%
Sales & Operations Planning process	59.51%
Integration of planning and execution	51.82%
Supply chain planning technology support	50.2%
Integration of supply chain planning across the company	49.39%
Supply chain planning talent/staffing	36.44%
Improved trading partner collaboration	35.22%
Executive support for planning process/results	31.58%
Other	5%

The single best opportunity? It was a tie between improved S&OP and better integration of supply chain planning and execution, as shown below. We believe the former will be easier to achieve than the latter.
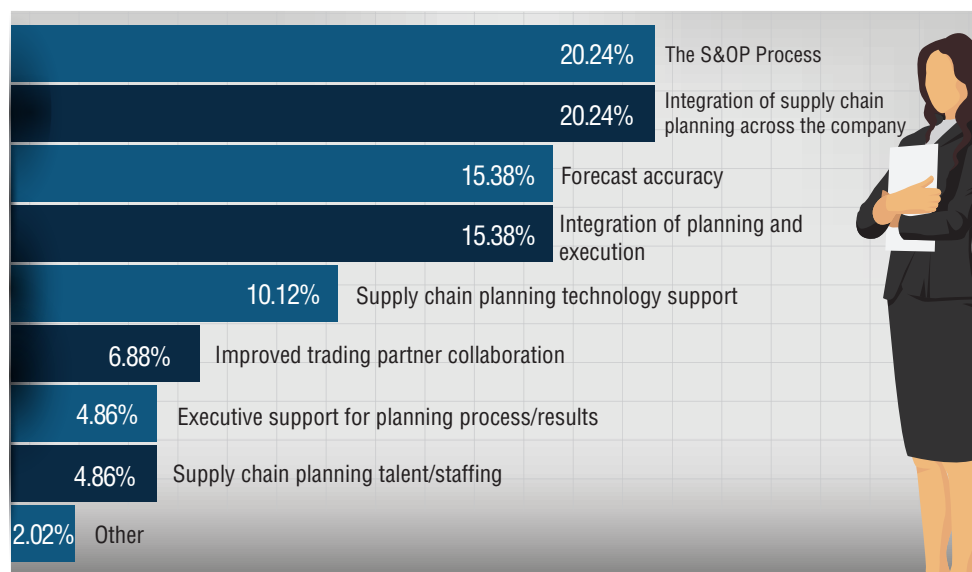
In what areas do companies see major opportunities for improvement in planning results?

Most companies hope for the questionable possibility of improved forecast accuracy, which was followed by more realistic potential for improved Sales and Operations Planning processes.

We were surprised by how many other categories also scored highly: better integration of planning worldwide, better integration of planning and execution, better planning tools – also scored highly. This tells us that there are tremendous opportunities to achieve better planning results from improvements in some or all of these areas.

Largest Single Opportunity for Improvement

Which area do you believe provides the single most significant opportunity for improvement, which would lead to better supply chain planning results?

Category	%
The S&OP Process	20.24%
Integration of supply chain planning across the company	20.24%
Forecast accuracy	15.38%
Integration of planning and execution	15.38%
Supply chain planning technology support	10.12%
Improved trading partner collaboration	6.88%
Executive support for planning process/results	4.86%
Supply chain planning talent/staffing	4.86%
Other	2.02%

The Bottom Line...

Companies seem to well understand where the best opportunities are.

Improving S&OP is not that hard – with the right executive support.
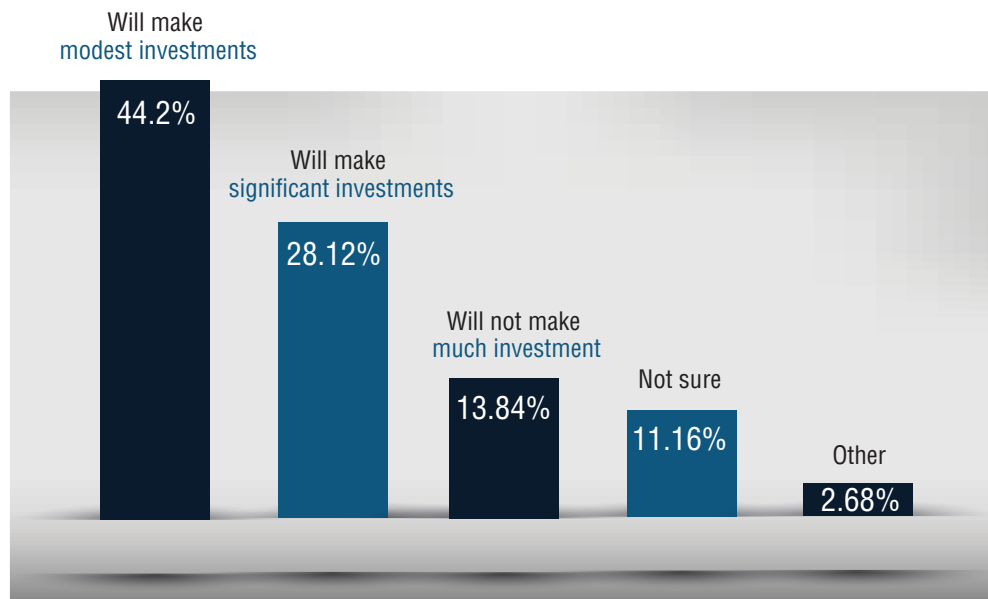
Visibility Matters

A very strong **53%** see better supply chain visibility as driving significant improvement in planning results. However, visibility usually comes from internal execution systems, as well as from planning and execution with trading partners.

In the end, we believe, high levels of near real-time visibility will cause operational planning and execution to merge into a single dynamic process.

Impact of More Granular Visibility on Planning

What do you believe the impact of more granular or real-time supply chain visibility would be on improving your planning results?

36.44%
Modest improvement

53.04%
Significant improvement

6.48%
Not much improvement (we already have a high level of visibility)

2.43%
Not sure

1.62%
Not much improvement

Expectations for Investments in Planning Next 2-3 Years

Will make
modest investments
44.2%

Will make
significant investments
28.12%

Will not make
much investment
13.84%

Not sure
11.16%

Other
2.68%

Investments Expected

Meanwhile, almost **30%** of companies say they are going to make significant investments in supply chain planning over the next 2-3 years. This number exceeds our expectations and seems quite high. Add that number to the **44%** with at least modest investment plans, and that adds up to a lot of spending in total.
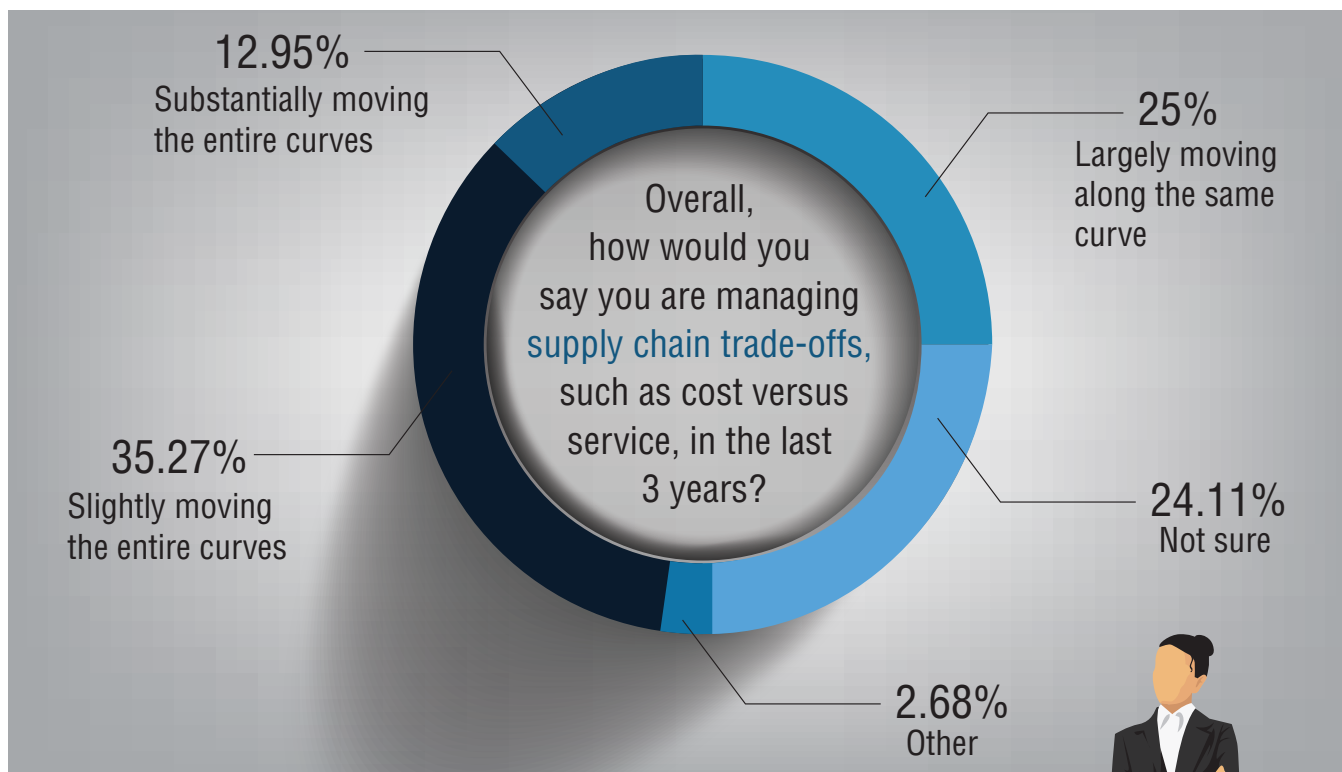
The Bottom Line...

Companies need to assess whether their expected investments in visibility and planning processes and technology are consistent with the goals for planning excellence.

Companies appear to be aware of the difference between moving along a trade-off curve and actually shifting a curve, which might mean, for example, being able to have both lower inventories and higher customer service. Thirteen percent (13%) of respondents say they have been able to substantially move the curve, and from our view that improvement almost always comes from upgrades to the supporting technology.

Maybe most interesting of all is that 24% do not know the answer to this question – that's almost one-quarter of respondents.

How Well are Supply Chain Trade-Offs Managed?

12.95%
Substantially moving
the entire curves

25%
Largely moving
along the same
curve

Overall,
how would you
say you are managing
supply chain trade-offs,
such as cost versus
service, in the last
3 years?

35.27%
Slightly moving
the entire curves

24.11%
Not sure

2.68%
Other

Planning Team Skill Sets vs. Needs

The good news from the chart to the right is that very few companies see their skill sets as not well suited for demands. On the other hand, just one in six believe they have a high level of match between skills and needs. We wonder: How much training are these companies doing to close the gap?

75.5%
Medium
Match

16.9%
High
Match

7.6%
Low
Match
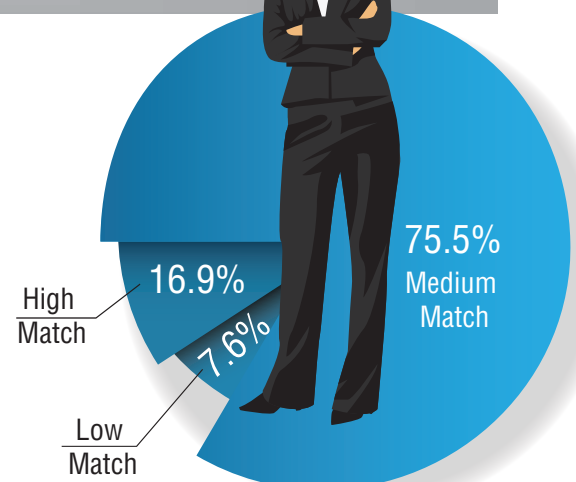
The Bottom Line... Shifting existing trade-off curves is at the heart of real planning improvements. Many companies need to be more proactive in closing their planning skills gaps.

Surprisingly, more companies say they are technology "followers" rather than "mainstream.

Just 12% say they are "aggressive" adopters – that sounds about right.

It is interesting to see the vast majority agreed with all our statements on the future of supply chain, with more than 20% "strongly agreeing" with all but the last possibility. An overwhelming 83% agree that planning cycles will accelerate and move towards a more real-time paradigm. There was also significant support for the notion that planning will become more global.

Where is Supply Chain Planning Headed?

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree	Total
Velocity of planning will accelerate, move to real-time	4.02%	12.5%	50.89%	32.59%	100%
Closed-loop/adaptive planning becomes commonplace	5.8%	16.52%	54.46%	23.21%	100%
Big shift coming in planning technology capabilities	4.91%	21.88%	46.43%	26.79%	100%
Globalization of planning function is coming	5.8%	18.75%	45.98%	29.46%	100%
Greater use of new data source (social) into planning	7.59%	28.12%	48.66%	15.62%	100%

44.7% Follower

36.41% Mainstream

12.44% Aggressive

6.45% Other

Overall Approach to Planning Technology

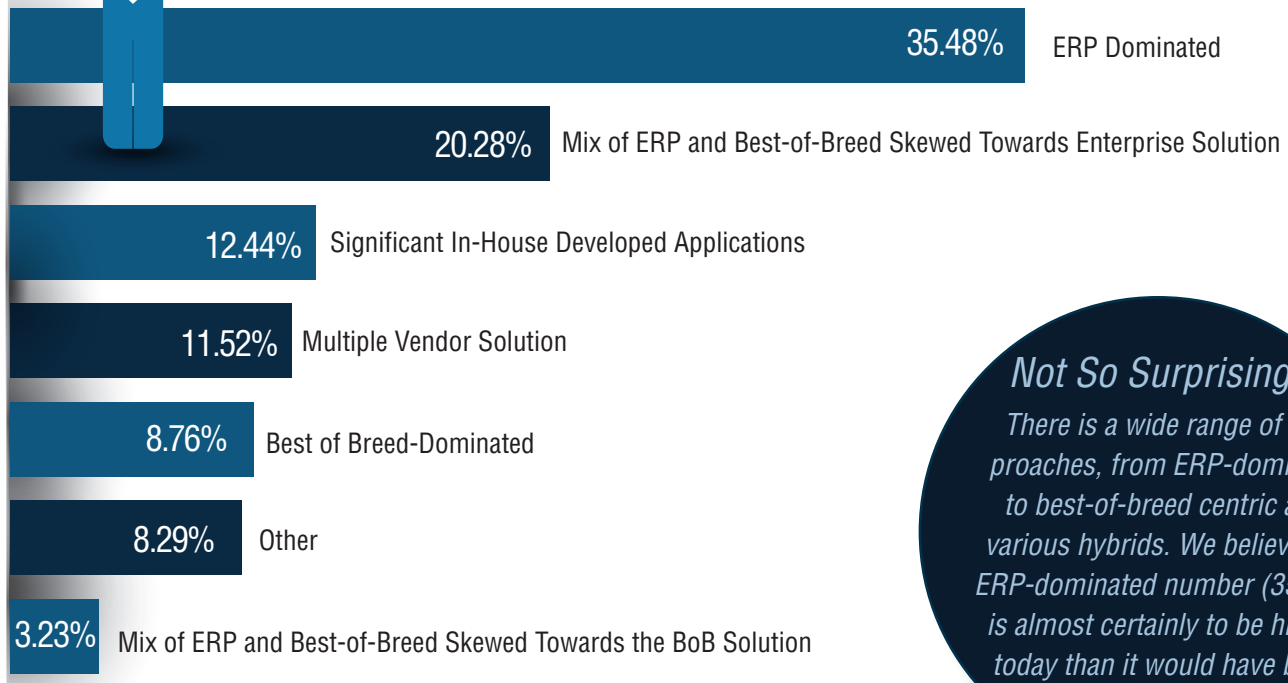What best describes your company relative to supply chain planning software deployment and use?

The Bottom Line...

Companies see a lot of changes coming to supply chain planning processes and technology. Do aggressive adopters of technology do better than laggards? We'll look at that question later.

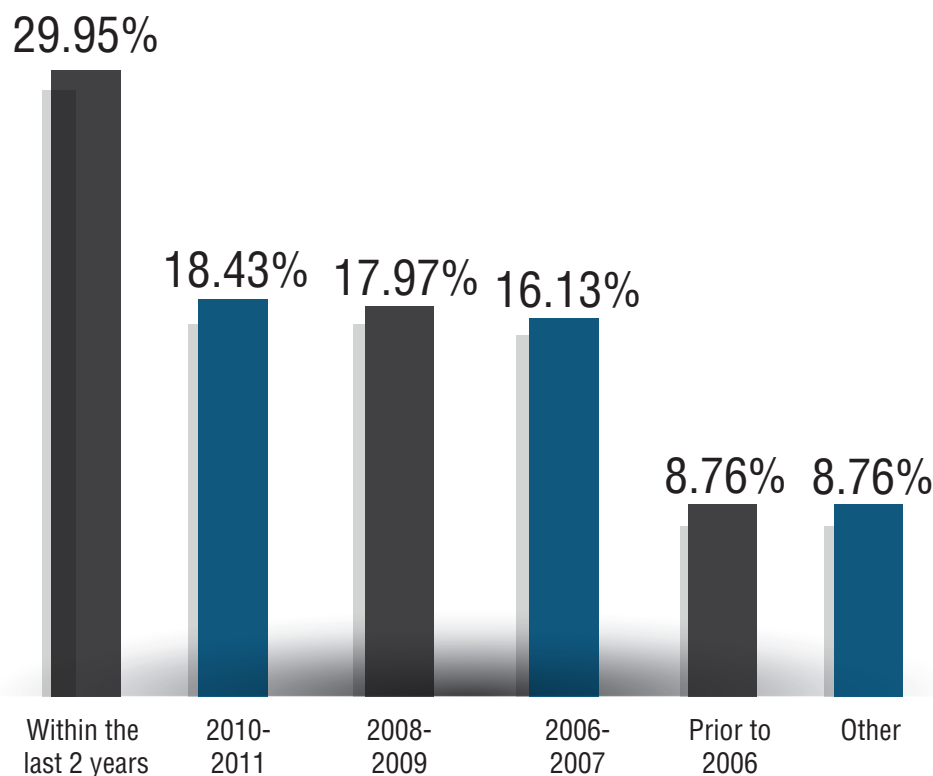# Supply Chain Planning Technology Platform

What best describes your planning technology platform?

- 35.48% ERP Dominated
- 20.28% Mix of ERP and Best-of-Breed Skewed Towards Enterprise Solution
- 12.44% Significant In-House Developed Applications
- 11.52% Multiple Vendor Solution
- 8.76% Best of Breed-Dominated
- 8.29% Other
- 3.23% Mix of ERP and Best-of-Breed Skewed Towards the BoB Solution

Not So Surprising...
There is a wide range of approaches, from ERP-dominant to best-of-breed centric and various hybrids. We believe the ERP-dominated number (35.4%) is almost certainly to be higher today than it would have been 5 years ago.

When was current planning technology platform last upgraded?

- Within the last 2 years — 29.95%
- 2010-2011 — 18.43%
- 2008-2009 — 17.97%
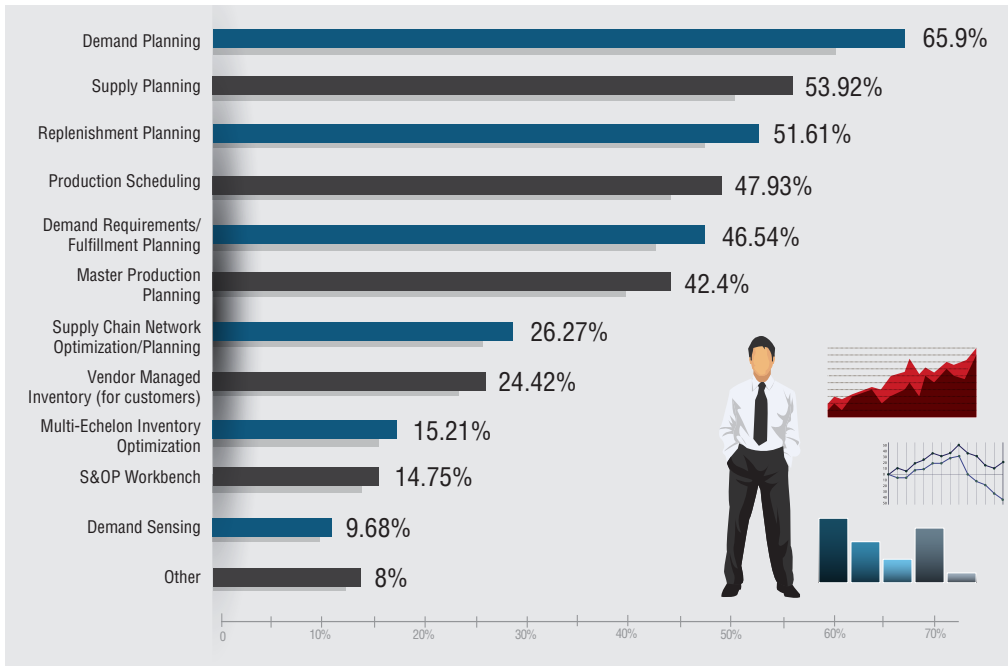- 2006-2007 — 16.13%
- Prior to 2006 — 8.76%
- Other — 8.76%

Upgrades can be difficult to cost-justify.
We were also a bit surprised at how current companies are keeping their technologies, as upgrades can often be hard to cost justify. Almost 30% say they have made a major upgrade to their planning technology platform (new software or major upgrade) in the last two years. Still, some 25% have a technology platform that dates from 2007 or even earlier. We believe these companies are at risk of falling behind in planning performance.

What Planning Modules are Companies Using?

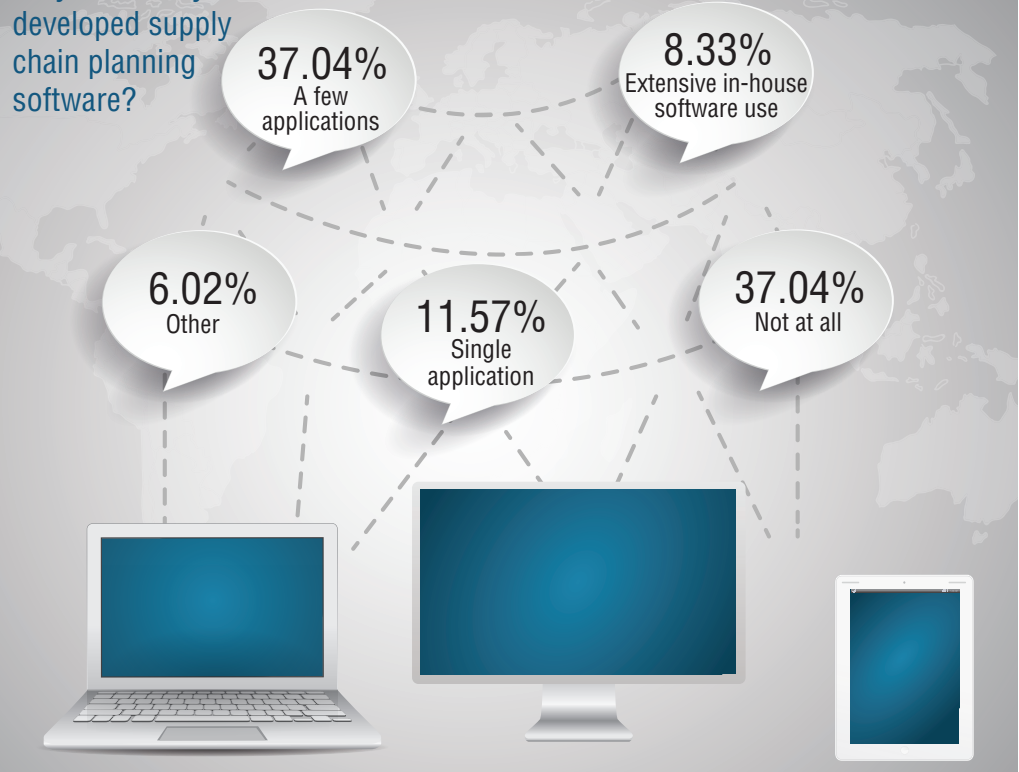### What applications/modules do you currently use (check all that apply)?

Module	Percent
Demand Planning	65.9%
Supply Planning	53.92%
Replenishment Planning	51.61%
Production Scheduling	47.93%
Demand Requirements/ Fulfillment Planning	46.54%
Master Production Planning	42.4%
Supply Chain Network Optimization/Planning	26.27%
Vendor Managed Inventory (for customers)	24.42%
Multi-Echelon Inventory Optimization	15.21%
S&OP Workbench	14.75%
Demand Sensing	9.68%
Other	8%

Not all planning modules make sense for every company. The chart on the left has to be taken in that context. Clearly newer planning technologies like demand sensing, S&OP Workbenches, and multi-echelon inventory optimization naturally have lower levels of adoption – yet that may mean that is where the opportunity is.

Use of In-House Developed Planning Software

Despite the wealth of packaged software out there, many companies still rely on home grown tools. Forty-five percent (45%) either rely extensively on home grown tools or have more than one in-house developed applications.

Why? Respondents indicated either they had special needs not well accommodated by packaged tools, or they believe they could save money by going in-house. Can they really? History shows in-house supply chain projects generally have much higher failure rates.

Do you use any in-house developed supply chain planning software?

37.04%
A few applications

8.33%
Extensive in-house software use

6.02%
Other

11.57%
Single application

37.04%
Not at all

Match Between Planning Technology and Business Needs
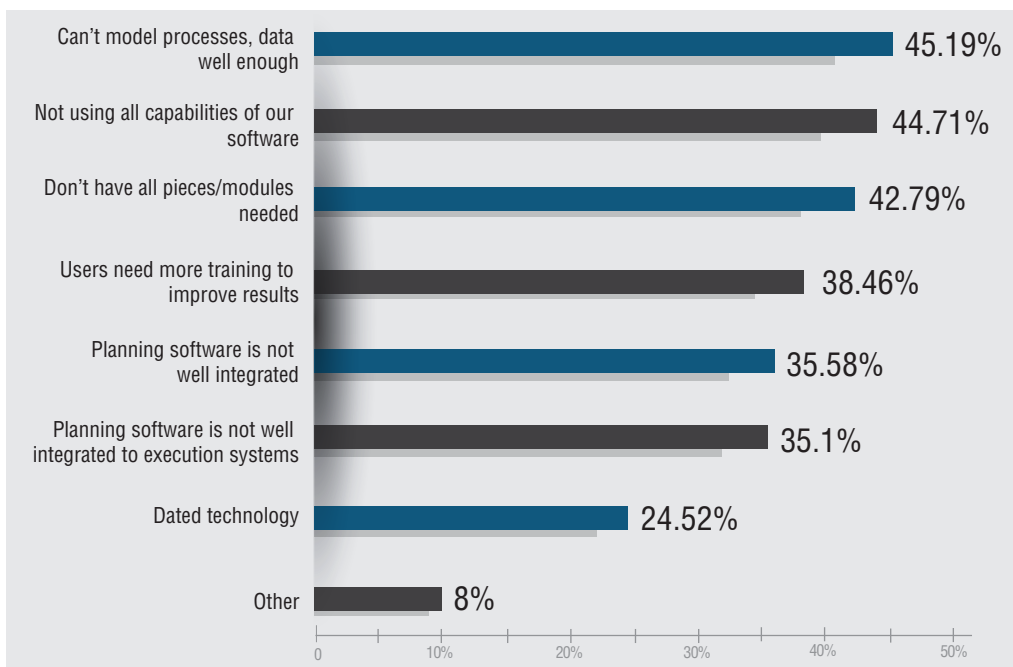
In general, would you say overall your supply chain planning software fits your current supply chain and overall business needs?

40.38% Somewhat well

28.85% Not very well

23.08% Well

4.33% Other
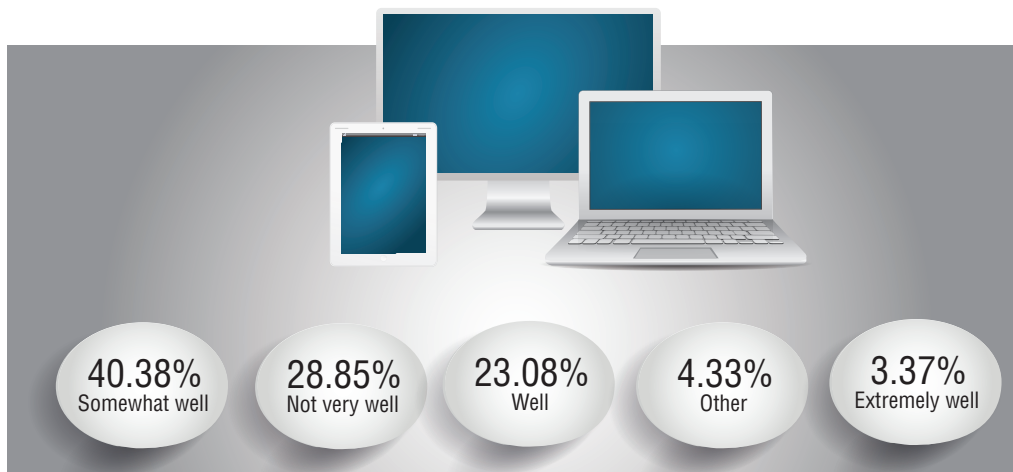
3.37% Extremely well

Regardless of the source of their planning software, we would say companies believe their current tools have a good but not great fit with their business needs. Just over 3% say the fit is "extremely well" – a disappointing level, really. Just another 23% say the fit is "well," meaning together just about one in four companies believe their fit is above the mid-mark. The plurality, about 40%, say the fit is "somewhat well."

Supply Chain Planning Technology Challenges

What important challenges do you have with current supply chain software?

Challenge	%
Can't model processes, data well enough	45.19%
Not using all capabilities of our software	44.71%
Don't have all pieces/modules needed	42.79%
Users need more training to improve results	38.46%
Planning software is not well integrated	35.58%
Planning software is not well integrated to execution systems	35.1%
Dated technology	24.52%
Other	8%

Digitally modeling a supply chain or process is often at the core of a planning application. This is a challenge, as every sector and company is different, and therefore hard to handle in packaged solutions, as we just noted, and as the data supports.

Supply chain software offers real opportunities, the data also says for companies to get more out of what they have. They might start by performing an assessment of unused but present capabilities.

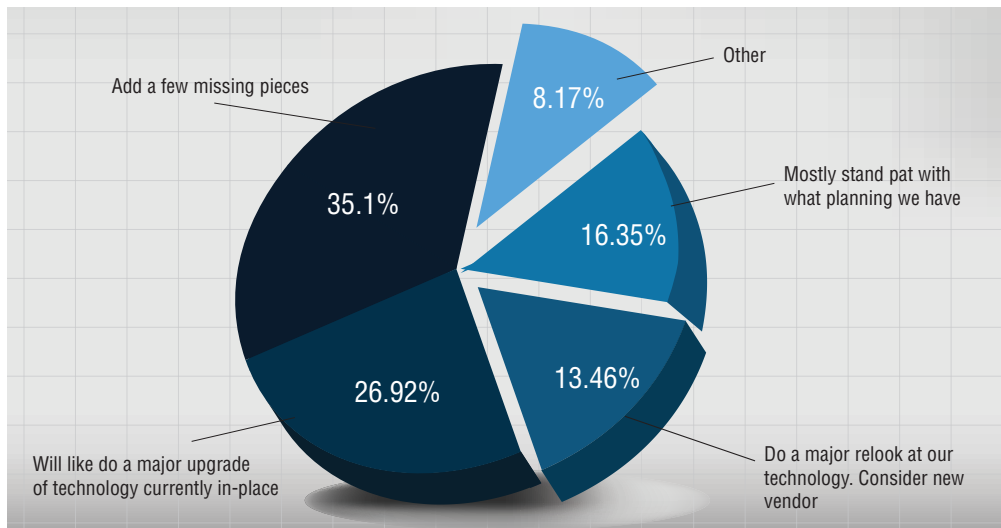More than 40% believe they need additional modules to get the job done.

The Bottom Line...

We believe the data showing just average fit between planning software and business needs in part comes from the fact that as planning solutions become more packaged and built to support multiple industries, some of the functionality that gets at detailed sector needs is sacrificed.

A medium level of activity for planning technology improvement is expected, which sounds about right, since many upgraded in the past two years. Still, 26% expect to upgrade current systems – maybe the same 26% who have technology dating from 2007 or earlier. About 1 in 7 companies indicate they will look for a whole new supply chain planning platform, while 16% say they are likely to stand pat.

Supply Chain Technology Planning

What best characterizes your company's likely path over the next 2-3 years with regard to supply chain planning technology?

Add a few missing pieces — 35.1%

Other — 8.17%

Mostly stand pat with what planning we have — 16.35%

Will like do a major upgrade of technology currently in-place — 26.92%

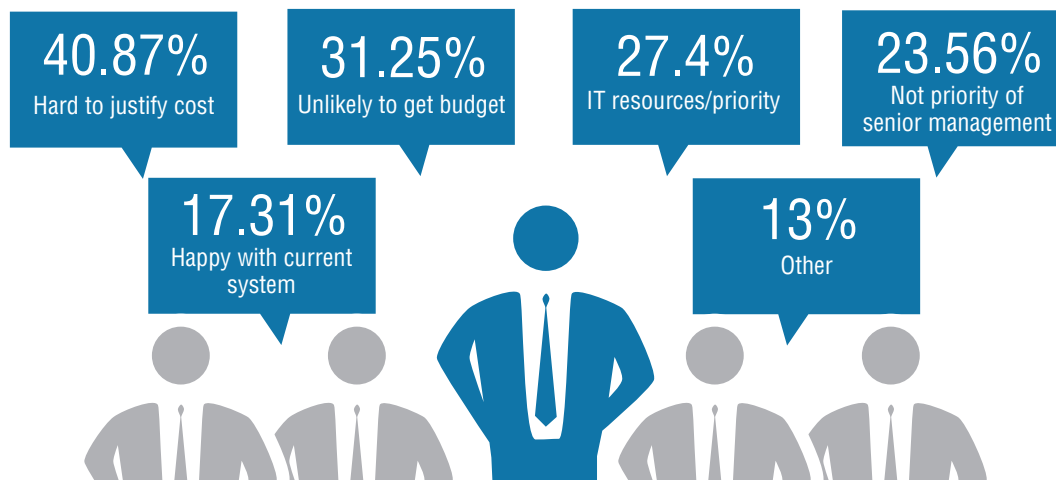Do a major relook at our technology. Consider new vendor — 13.46%

The Bottom Line...

In total, the majority of companies plan moderate to substantial activity in adding to supply chain planning technology capabilities – but they should first ensure they are getting the most out of what they already own. The ROI for a technology refresh might be there, but may take real work to uncover it.
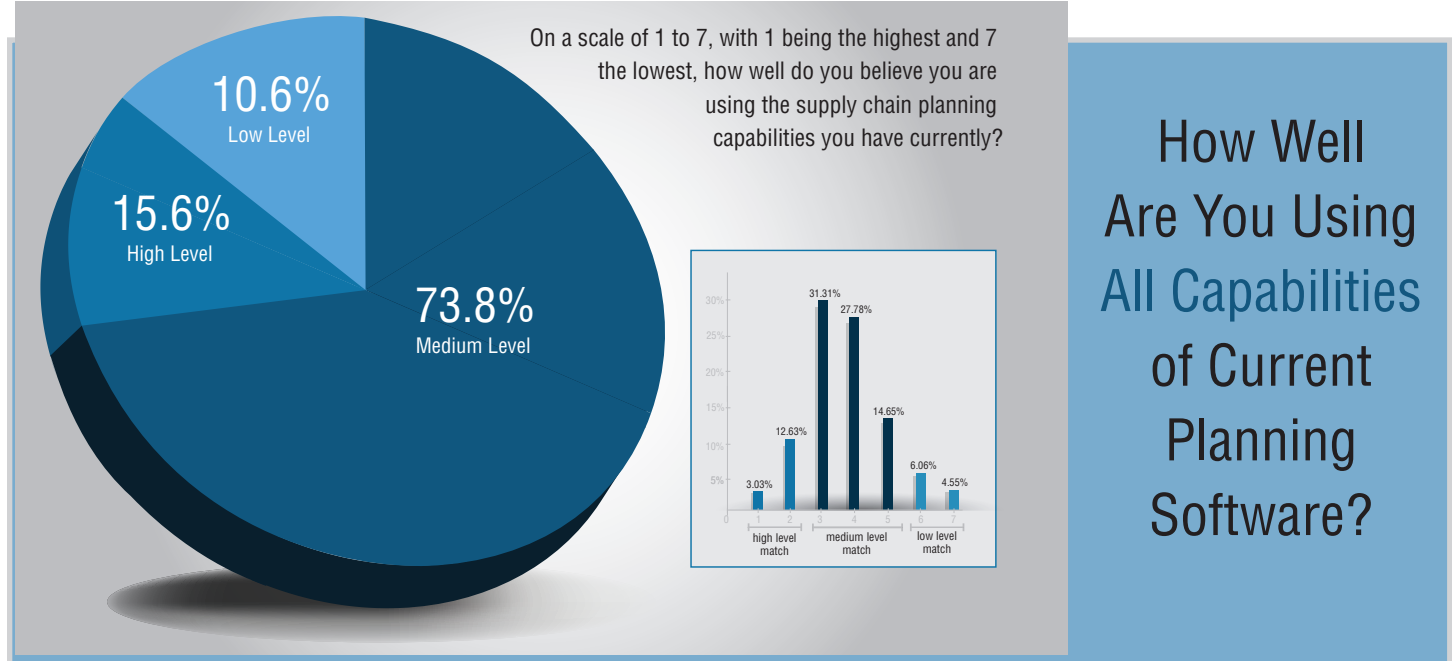
As always, budget and cost justification are the biggest obstacles for refreshing current technologies. Companies should consider getting outside help in this effort. Planning vendors need to do a better job of helping customers justify upgrades – in part by lowering the cost of the upgrades.

Reasons for Not Looking at New Planning Technology Platform

Main reasons you would not look at a new supply chain planning platform (including a major upgrade for current systems)?

40.87%
Hard to justify cost

31.25%
Unlikely to get budget

27.4%
IT resources/priority

23.56%
Not priority of senior management

17.31%
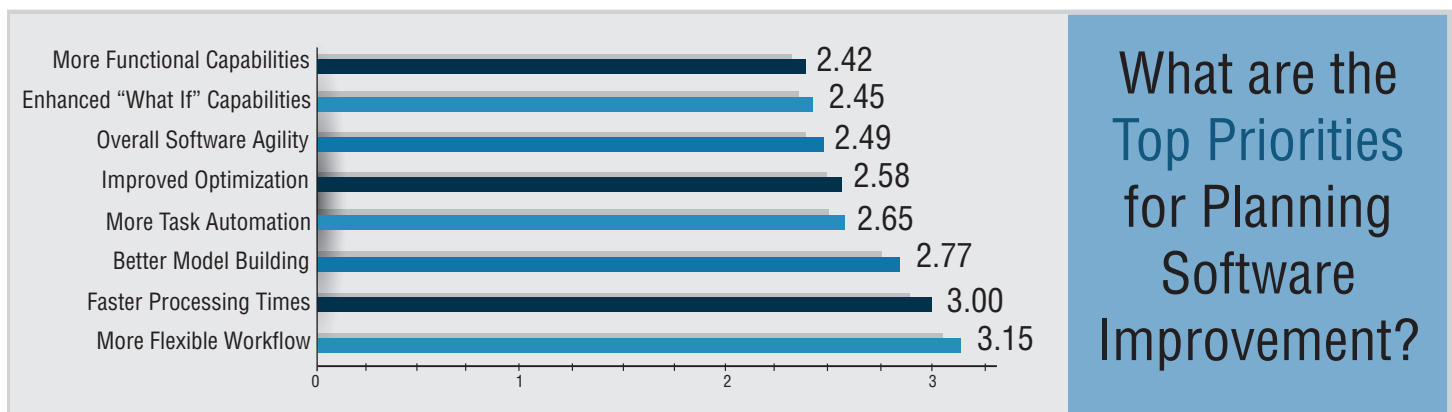Happy with current system

13%
Other

We wanted to explore the question of how well companies are using the planning technology capabilities they already have in more detail. As shown below, just 15% say they are using current capabilities at a high level. How many dollars might be associated with moving from medium levels to high levels? That is a key question – along with what is keeping companies at medium levels of usage. Processes? Training? This is a topic worth exploring internally.

On a scale of 1 to 7, with 1 being the highest and 7 the lowest, how well do you believe you are using the supply chain planning capabilities you have currently?

10.6%
Low Level

15.6%
High Level

73.8%
Medium Level

31.31%
27.78%
12.63%
14.65%
3.03%
6.06%
4.55%

high level match   medium level match   low level match

How Well Are You Using All Capabilities of Current Planning Software?

The chart below reflects answers to a question on value of specific supply chain planning functional enhancements being added, on a scale of 1 to 7, with 1 being the highest. The lower the average score, the higher the priority. Companies still want more functional capabilities, as requirements change. They also want better "what if" capabilities. Every area was below the midpoint of 3.5. This shows there is still a lot of work for software developers to do.

Not unexpectedly, processing times scored relatively low, as advances in hardware and software have made this much less of an issue than in years past.

More Functional Capabilities	2.42
Enhanced "What If" Capabilities	2.45
Overall Software Agility	2.49
Improved Optimization	2.58
More Task Automation	2.65
Better Model Building	2.77
Faster Processing Times	3.00
More Flexible Workflow	3.15

What are the Top Priorities for Planning Software Improvement?

The Bottom Line...

Very few companies maximize the software capabilities they already have. Supply chain planning technology users clearly see many areas where software can be improved.

Supply chain planning software has matured over the past decade, to the point where some believe it has reached a plateau and it will be difficult to see much additional progress. But a clear majority, 53%, does not agree, predicting a "powerful new generation of planning software" is on its way.
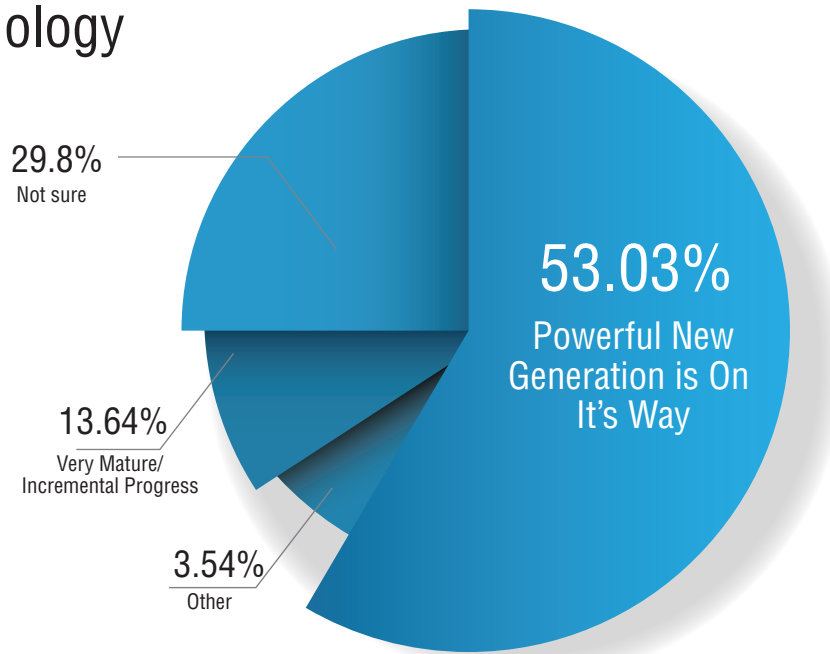
Just 13% believe planning technology has hit a plateau – much less than the almost 30% that just aren't sure.

We firmly believe that one future change in supply chain planning technology and process is that there will be tighter integration of planning and execution, with much shorter feedback cycles into planning, and ultimately a blurring of operational planning and execution. As shown in the graphic at right, very few companies feel they have made substantial progress in integrating planning and execution to date.
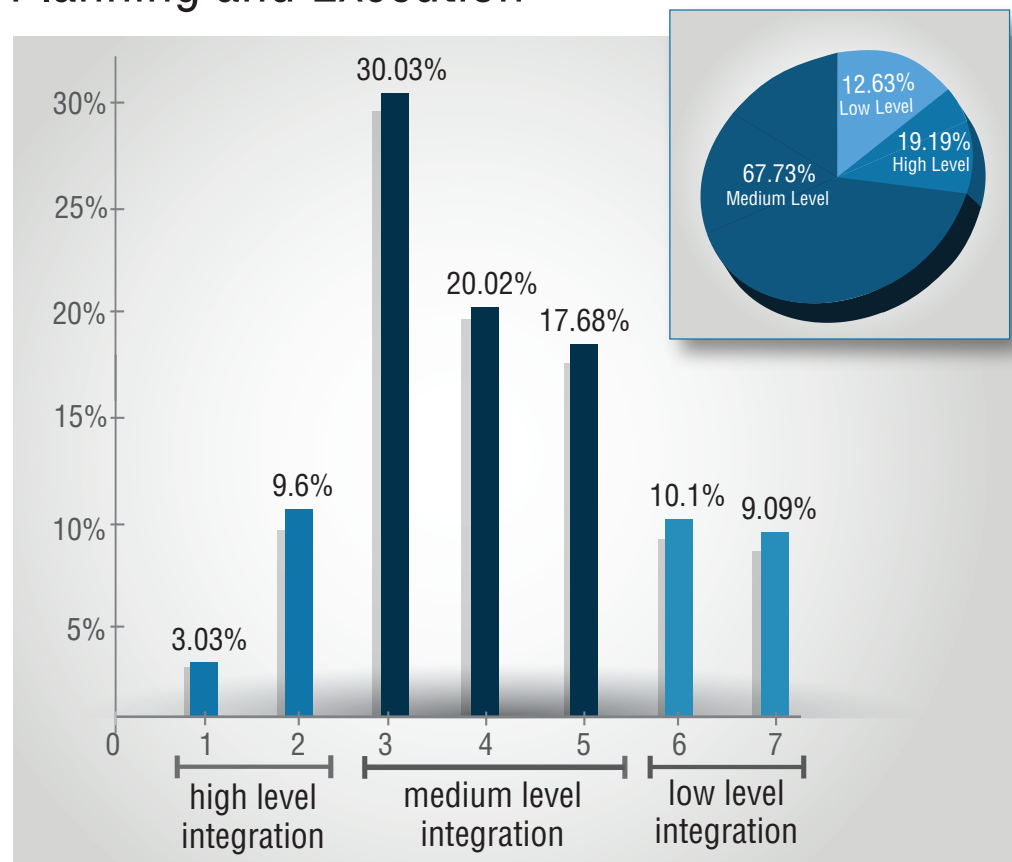
The Bottom Line...

It is good to see a majority of companies believe supply chain planning software will improve substantially in coming years. We predict much tighter integration with execution will be part of that evolution.

Future View of Supply Chain Planning Technology

- **53.03%** Powerful New Generation is On It's Way
- **29.8%** Not sure
- **13.64%** Very Mature/Incremental Progress
- **3.54%** Other

Current Levels of Integration between Planning and Execution

high level integration: 3.03%, 9.6%
medium level integration: 30.03%, 20.02%, 17.68%
low level integration: 10.1%, 9.09%

- **12.63%** Low Level
- **19.19%** High Level
- **67.73%** Medium Level

Do aggressive adopters of supply chain planning technology perform better than others?

Follower

Mainstream

Aggressive

We also took cross tabs on the dataset. Do aggressive adopters of supply chain planning technology perform better than others? As shown previously, we asked companies if in the past few years they have been able to shift entire trade-off curves, slightly shift curves, or remain moving along the same curves.

By assigning a score of 1, 2 or 3, respectively, we developed an average score for each group of supply chain technology adopters, with the lower the score, the more effective a company's supply chain planning could be said to be.

The more aggressive a company is with technology, the lower the average score.

2.1

1.9

1.7

Supply Chain Planning Technology, By Industry

Sector	Mostly Disconnected	Modestly Integrated	Integrated, Top-Down Oriented	Integrated, Top-Down and Bottom-Up
High Tech	8.3%	58.3%	12.5%	20.8%
Consumer Goods	13.9%	58.1%	11.6%	16.2%
Chemicals	29.4%	52.9%	11.7%	5.8%
Pharma/Life Sciences	33.3%	55.5%	11.1%	0.0%
Retail	37.5%	56.2%	6.3%	0.0%
Industrial	16.6%	66.6%	11.1%	5.5%

The high tech sector appears to the most integrated, followed by consumer goods. Retail, pharma/life sciences, and chemicals are at the back of the pack, with general industrial manufacturers in-between.

Key Takeaways from the Data

Opportunity

For all the maturity of planning software, there is still much opportunity for companies and vendors to improve: Across the board, the vast majority of companies see opportunities to get more out of what they have, add new capabilities, and improve planning process.

Integration

Integrating planning and execution is a key current focus area: Several data points indicated that making tighter connections between supply chain planning and execution is an important priority for companies today. We agree.

Investment

Strong levels of investment in planning technology are expected: Even after two strong years of upgrades or new systems coming out of the recession, respondents overall indicated more investment was coming in planning processes and technology.

Flexibility

Companies aren't highly satisfied with current planning systems: They see need for better fit with business needs, and more flexibility in modeling. It's a tough job for vendors to support detailed needs of many industries.

S&OP

After all these years, improving S&OP still remains a major opportunity: Few companies even today are highly satisfied with their S&OP processes. As improving S&OP is almost totally in a company's own control, this should be a high priority, not settling for just "good enough."

Visibility

The best opportunity to improve planning may be through enhanced visibility. Companies recognize the role supply chain visibility can play in improving planning results. Visibility generally comes from execution not planning systems. Companies need to work to clearly link improved visibility with better decision-making.

Four Key Planning Trends

Centralization/ Globalization	Real-Time Planning	Task Automation	Planning & Analytics
1	2	3	4
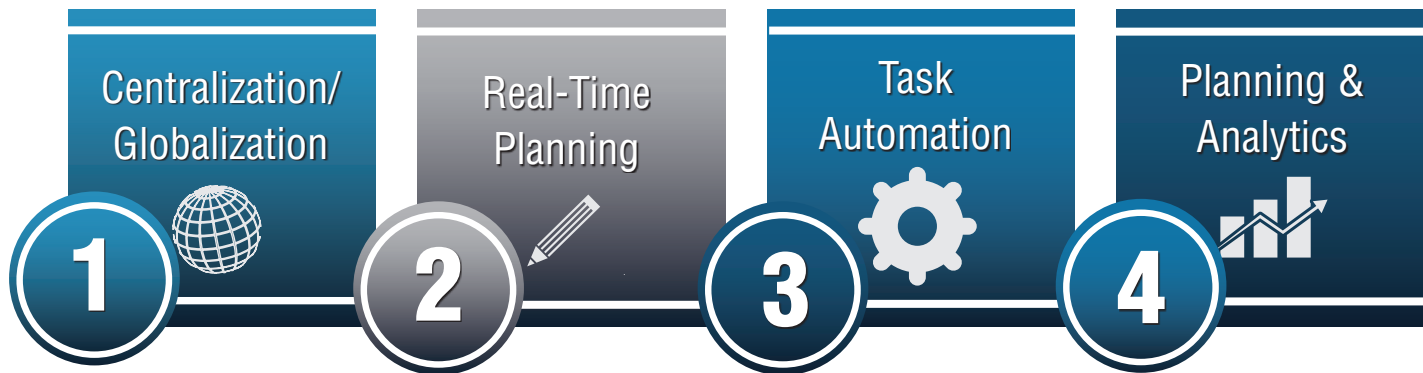
Transition from S&OP to Integrated Business Planning:

Whatever name you want to use, it is clear leading companies are moving past traditional S&OP (supply-demand balancing) to a process that is more tightly connected to a company's financial performance and which more specifically makes decisions relative to target inventory levels. This more comprehensive approach is often called Integrated Business Planning (IBP), though clearly the majority of firms still use the term S&OP even after they have reached this more advanced state. That notion is captured in the S&OP maturity model below, in the Leader category across the different performance areas.

Stage	Planning Process	Organization Alignment	Information Availability	IT Integration
Leader Real Time & Fully Integrated	Demand & Supply reconciled both Internally and with Trading Partners. Demand Planning Excellence sustained.	S&OP culture in place with ownership by the organization's top executive. Linkage to financial performance/ metrics: NPI/PLM	Dashboards in place. Real-time alerts regarding operations and event results enable quick decision making and plan adjustments.	Web enabled trading partner linkages for data exchange & transactions. Best of Breed ERP & S&OP modules fully integrated.
Established Consistent & Aligned	Consistent with full accountability. Reconciled Demand & Supply. Single view of demand. Demand forecasting improvement program.	Sr. Management provides leadership. All Functional process roles well understood. Targets and Performance metrics aligned.	Scoreboards in place to monitor results. Consistent data is available organization wide and plans are synchronized.	Internal integration of multiple systems. Single system for Supply & Demand with good linkage to ERP & other systems.
Fundamental Minimally Integrated	Some elements in place such as a Demand Forecast Consensus process. Planning & Execution not fully integrated	Middle Management responsibility for process. Supply chain is the process leader.	Information available but in multiple systems. Reporting inconsistent and not visible organization wide.	Good system integrity but network not fully linked. Insufficient analytical tools.
Laggard Execution Failures	Lack of clarity throughout business.	No alignment. Disparate performance metrics. Reliance efforts of a few experts.	Insufficient Supply & Demand linkage. Many reporting and data gaps.	Separate inadequate systems requiring duplicate entries and data manipulation.

It is interesting to note, however, that of late some companies, such as Whirlpool and Hershey Foods, have moved away from the "one number" consensus forecast to more of a range approach.

Move Towards More Real-Time Planning Environments

For decades, supply chain planning has operated under a model that moved from strategic planning down through tactical and then operational planning, with the time frames for the planning horizon shrinking as the process moved down that hierarchy.

The process was often characterized by a lot of latency from execution processes and systems, with consumer goods companies, for example, often not understanding how well a promotion actually went until 2-3 months after it was over. That is changing rapidly, as near real-time feedback on execution results drives continuous replanning, blurring the line between operational planning and execution.

Part of this is due to significant advances in supply chain software and especially hardware processing power. This has now, for really the first time, allowed companies to forecast every item at every store on a daily basis.

It goes further – Procter & Gamble often now reschedules factory product lines multiple times per day based on new data from so-called "demand sensing" capabilities. This trend will enable companies to be a lot more responsive and agile in reacting to changes in supply or demand conditions.

Real-Time Planning

2

"...near real-time feedback on execution results drives continuous replanning, blurring the line between operational planning and execution."

Increasing Task Automation

In many areas of planning, notably demand planning, there is a key trend to letting the system drive the work, so that planners focus more on exceptions and outliers.

This is both driven by and perhaps plays a role in the related trend of planners being asked to do more with less. A number of studies continue to show, for example, that the number of SKUs a demand, replenishment, or supply planner must manage continues to rise, and that many feel stretched very thin.

Many demand planning systems now, for example, can identify the specific forecast techniques that are most appropriate for a given SKU automatically and tune specific parameters associated with that technique. Flexible and automated workflow capabilities not just within a module such as demand planning but across modules, enables additional process automation.

In the end, this means that supply chain planners will become more true business managers and internal collaborators than detailed number crunchers, as the software takes on more of the work.

Task Automation

3

"...supply chain planners will become more true business managers and internal collaborators than detailed number crunchers, as the software takes on more of the work."

Marriage of Planning and Analytics

There has always been a tie between planning and related "analytics," but that somewhat loose connection of the past is now becoming something joined at the hip.

That is for several reasons. First, a number of supply chain planning software vendors have released solutions that provide what might be called "embedded analytics" – relevant analytic tools built right into the planning applications to provide planners additional insight they need to make better decisions without going to other analytics systems that may not have the most current data.

Second, "big data" and so-called advanced analytics that offer the promise (if not always quite the reality yet) of providing insights at a deeper and different level than has ever been achievable in the past.

For example, Kraft Foods among others is working on a big data project that it hopes will enable it to better understand how social media outlets impact consumer behavior.

Such advanced analytics are also being used to provide insights across functional areas in companies that may have simply been invisible before. Now, these new tools provide information that can be used to improve total supply chain performance and enable a platform for collaboration across the supply chain and the business.

"...these new tools provide information that can be used to improve total supply chain performance and enable a platform for collaboration across the supply chain and the business."

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