

SALES & OPERATIONS PLANNING (S&OP) SURVEY REVIEW



The current global chemical industry landscape is one of volatility and risk due to continued instability in employment, financial markets, natural disasters and energy. As an industry, we are also faced with slow growth in mature markets, demand shifts in emerging markets, industry consolidation, increased regulatory compliance (REACH) and asset-utilization decisions. All of these elements contribute to the complexity and challenges associated with Sales and Operations Planning (S&OP) performance in the chemical industry.

Over the past 10 years, SCMchem attendees have asked what SCMchem and its partners could provide beyond the annual event. The response back from attendees has been consistent over the years: benchmarking data.

In partnership with Worldwide Business Research (WBR), the event organizer for SCMchem, Hitachi Consulting surveyed your peers in the chemical industry benchmarking key issues, initiatives, and technologies regarding S&OP.

Participants took a 17-question S&OP Survey which focused on areas such as S&OP Maturity, S&OP Ownership & Decision Making, S&OP Organizational Structure, Barriers to S&OP Success, S&OP Performance Management and S&OP Technology Tool Adoption.

Survey respondents were from chemical companies that ranged from less than \$1 billion in sales, to large, global industry leaders with sales in excess of \$20 billion. Participating companies included DuPont, EMD Chemicals, Tata Chemicals, W.R. Grace, Sika, Milliken, International Flavors & Fragrances, Nova Chemicals, Merck, Akzo Nobel, Rhodia, Momentive, SABIC, Syngenta, PPG, Huntsman, Honeywell and more. Survey respondents ranged from Managers to VPs of Supply Chain, Operations and Finance.

We would like to thank all participants for providing their perspectives on Sales & Operations Planning in the chemical industry.

 Hitachi Consulting

 SCMchem

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SURVEY SUMMARY - C-LEVEL EXECUTIVE SPONSORSHIP

Executive Sponsorship = S&OP Maturity

When the organization has Executive Sponsorship in place, more than 70% of the time they operate at a Mature or Expert Level. Executive Sponsorship was identified as the #3 barrier to S&OP success.

Hitachi Consulting's position is that Executive Sponsorship/Leadership is a prerequisite for a successful S&OP program. The CEO/COO must set the vision for the organization to embrace Sales & Operations planning as standard operating procedure.

CROSS-FUNCTIONAL TEAMS

Cross-Functional S&OP Teams = S&OP Maturity

When the organization has Cross-Functional Teams in place, more than 60% of the time they operate at a Mature or Expert Level. In organizations where one group does all the S&OP work, 60% are at Novice or Infancy level.

Hitachi Consulting's position is that the S&OP process that is optimized for performance is defined by collaboration. Inputs and outputs from Finance, Supply Chain, Manufacturing/Operations, Sales, Marketing, R&D are all critical to the success of the S&OP process. Active participation is not optional, it must be mandatory. The Sales & Operations Planning process relies upon internal collaboration. It should also extend to suppliers and customers in order to properly balance the demand with the supply capability in order to meet the business and market requirements.

S&OP PROCESS & DECISION-MAKING

In companies with sales in excess of \$1 billion, managing the S&OP process and making S&OP decisions are concentrated with the VPs of Supply Chain and Operations. Business Unit Leaders and General Managers at less of a concentration own S&OP decisions.

Hitachi Consulting's opinion is that the CEO/COO should assign the responsibilities for S&OP decisions to business executives such as a Business Unit Leader or General Manager with full profit & loss (P&L) responsibilities. The business and financial decisions made as part of S&OP will have both short- and long-term impact on the organization, therefore executives with P&L responsibility should be responsible for S&OP decisions.

EFFECTIVE S&OP TOOLS – S&OP BARRIER #1

Companies who rated themselves in the Novice or Infancy maturity levels were more likely to rate effective S&OP tools as a barrier to S&OP success. Companies with Mature or Expert processes generally rated themselves as Mature or Sophisticated in the use of S&OP Tools.

Companies Immature in S&OP tools typically have a planning horizon of only six months.

Companies that state the S&OP process takes the entire month are usually Novice in their S&OP process, find effective S&OP tools as a barrier and are Immature in the use of S&OP tools.

87% of companies that have implemented or are considering implementing Integrated Business Planning are either Maturing, Mature or Sophisticated in their usage of S&OP tools.

Hitachi Consulting's position is that if your organization is still using Excel for S&OP planning, as many are, you are now close to a generation behind in the deployment of S&OP technology and the business processes associated with world-class S&OP.

If you are interested in leveraging better S&OP tools, a mature cross-functional team and S&OP process are still needed to gain the true benefits. A solid foundation is critical.

KEY PERFORMANCE INDICATORS (KPIs)

The majority of respondents use 1-10 KPIs to manage the S&OP process. We find this surprising.

Hitachi Consulting's opinion is that S&OP should be incorporated as a key strategy of the organization with the appropriate strategic Key Performance Indicators (KPIs) set as a part of strategic corporate objectives. S&OP team KPIs must be tied directly to management compensation.

Our opinion is that for an immature S&OP team and process, it is appropriate to be measured against a maximum of 5-10 KPIs. The number of KPIs determined to optimize the success of the S&OP process is dependent on business complexity. The mature S&OP organizations from the survey are only measuring the S&OP performance at a level we consider minimum. For mature organizations, we recommend more than 10 KPIs.

For mature organizations, a balanced alignment of KPIs relating to income statement, balance sheet and capital utilization such as RONA will provide an integrated view of performance across the business operations.

There are many cause and effect relationships within S&OP KPIs. Each KPI has a primary owner with defined dependencies. When aligning KPIs with compensations, the dependencies must be identified, recognized and incorporated.

Hitachi Consulting has developed a list of more than 30 KPIs to manage the S&OP process.

OBSERVATIONS

Questions 2 & 3 - Does your company have S&OP as a standard part of your business processes?

- 39% of respondents reported Yes, it is a standard process throughout the company.
- 33% of the respondents reported Yes, but it is not a standard process throughout the company
- 17% of the respondents reported No, but considering it
- 10% of the respondents reported No, and not considering it.

- 72% of respondents who took the survey have some form of S&OP in place in their company. We would then consider the answers to the questions representative of respondents who understand S&OP.

■ **<\$1 billion in sales**

- 33% S&OP is a Standard Process
- 20% S&OP Yes, but not a Standard Process

■ **\$1-3 billion in sales**

- 46% S&OP is a Standard Process
- 31% S&OP Yes, but not a Standard Process

■ **\$4-5 billion in sales**

- 43% S&OP is a Standard Process
- 43% S&OP Yes, but not a Standard Process

■ **\$6-10 billion in sales**

- 50% S&OP is a Standard Process
- 50% S&OP Yes, but not a Standard Process

■ **\$11- 20 billion in sales**

- 30% S&OP is a Standard Process
- 30% S&OP Yes, but not a Standard Process

■ **>\$20 billion in sales**

- 25% S&OP is a Standard Process
- 25% S&OP Yes, but not a Standard Process

Question 4 - To what level does your company embrace S&OP?

■ **<\$1 billion in sales**

- 3% Expert
- 63% Mature
- 25% Novice
- 0% Infancy

■ **\$1-3 billion in sales**

- 0% Expert
- 60% Mature
- 20% Novice
- 20% Infancy

■ \$4-5 billion in sales

- 0% Expert
- 50% Mature
- 33% Novice
- 17% Infancy

■ \$6-10 billion in sales

- 0% Expert
- 67% Mature
- 17% Novice
- 17% Infancy

■ \$11- 20 billion in sales

- 0% Expert
- 0% Mature
- 100% Novice
- 0% Infancy

■ >\$20 billion in sales

- 50% Expert
- 0% Mature
- 50% Novice
- 0% Infancy

Overall: 11% - Expert; 51% - Mature; 31% - Novice and 11% - Infancy. The highest Maturity rating was with companies in the \$6-10 billion range with 67% Mature S&OP Processes.

Question 5 & 6 - Who owns the S&OP process in your company? Who owns the S&OP decision-making in your company?**■ <\$1 billion in sales**

- C-Level executive sponsors usually owned the S&OP process and decision making

■ >\$1 billion in sales

- Supply Chain VPs own the S&OP process 42%
- Supply Chain VPs' are also responsible for S&OP decisions 64% of the time they own the process
- The balance of the S&OP decision making is split between Business Unit Leader and General Managers
- C-Level Executive Sponsors own the S&OP process 16%. They are typically also the decision makers

- Operations VPs own the S&OP process 16%. They are typically also the decision makers
- A few Marketing & Finance VPs will own the S&OP process however S&OP decision making is made by the Supply Chain or Operations VP

Question 7 - What barriers do you see in your company to an effective S&OP process?

Effective S&OP tools is barrier #1. The lack of Effective S&OP tools was concentrated in the organizations from <\$1 billion to the \$3 billion range. The larger companies identified this less often as a barrier.

Data Accuracy and Integrity is barrier #2. Data accuracy and integrity was identified across all market segments as a barrier. There was a consistent pattern from small to larger companies with Data Accuracy and Integrity as a barrier.

Lack of Executive Commitment is barrier #3. Concentrated with companies in the \$4 to \$10 billion range. Lack of executive commitment was usually aligned to companies that replied: Yes to S&OP, however it is not a standard process throughout the company.

Question 8 - Does your company have a C-level executive sponsor for company-wide S&OP?

59% - Executive Sponsorship. Of those, 71% have Mature or Expert processes. Companies with Executive Sponsorship cut across all size companies.

41% - No Executive Sponsorship. Of those, 60% have Novice or Infancy processes. Companies with No Executive Sponsorship cut across all size companies.

Question 9 - Does your company utilize cross-functional teams as part of the S&OP process?

In organizations which have cross-functional teams as part of the S&OP process, 63% are at an Expert or Mature level.

In organizations where one group does all the S&OP work, 60% are at Novice or Infancy level.

Companies with cross-functional teams cut across all size companies.

Question 10 - At what level does your company manage S&OP?

6% - Plan at the Global, Regional, Business Unit and Plant level

23% - Plan at the Global & Regional level

26% - Plan at the Regional level

25% - Plan at the Business Unit level

Question 11 - The S&OP process is driven by which of the following actions?

Multiple answers were allowed for this question.

#1 - "Scenario planning to improve and optimize performance" had a concentration with companies from <\$1 billion to \$3 billion in sales with 64% reporting this as #1. All other sales categories rated "Scenario planning to improve and optimize performance" from 0% to 50%.

"Reducing inventory to free up working capital" had a concentration with companies in the \$4 - \$5 billion in sales with 85% reporting this as #1. "Reducing inventory to free up working capital" was consistent across all other sales categories. 50% are interested in "Reducing inventory to free up working capital."

"Improving demand forecasting and managing demand volatility" was consistent across all sales categories. 50% are interested in "Improving demand forecasting and managing demand volatility."

Question 12 - How often is your S&OP process plan prepared?

Monthly at 58% and Quarterly at 18% consistent across all sales range categories. There was not a discernable pattern between maturity levels.

Question 13 - Which timing scenario best describes your cycle of S&OP meetings?

Companies that state the process takes the entire month are usually Novice in their S&OP Process, find Effective S&OP Tools as a barrier and are Immature or Maturing in the use of S&OP Technology Tools.

Companies that state the process is spread over the first two weeks are usually Mature in their S&OP process, don't find Effective S&OP Tools as barrier and are Mature or Maturing in the use of S&OP technology tools.

Only a few companies above \$3 billion take the entire month and they are maturing in their use of S&OP tools.

Question 14 - How far into the future does your S&OP planning horizon cover?

Companies that are forecasting their S&OP time horizon at three months are at the Infancy or Novice stage of their maturity and use spreadsheets for the S&OP Planning. Companies planning at three months span all company sizes.

Companies that are forecasting their S&OP time horizon at 4-6 months state they are Mature in the S&OP Process, but most use spreadsheets. Companies planning at 4- 6 months span all company sizes.

For companies that are forecasting their S&OP time horizon at 7-12 months, 65% are Mature in S&OP processes. 80% are Mature or Maturing in the use of S&OP tools. Companies planning at 7-12 months span all company sizes.

For companies that are forecasting their S&OP time horizon at 13-18 months, 80% are Mature in S&OP process. All are Mature or Sophisticated in the use of S&OP tools and use no spreadsheets. Companies planning at 13-18 months span all company sizes.

For companies that are forecasting their S&OP time horizon for more than 18 months, 67% are Expert or Mature in S&OP process. All are Mature or Maturing in S&OP tools. Companies planning at over 18 months span all company sizes.

Question 15 - Does your company utilize Key Performance Indicators (KPIs) to govern S&OP Performance?

85% of the companies who have no defined KPIs or have yet to define KPIs are either in the Infancy or a Novice in the S&OP Process. Companies with no KPIs cut across all size companies.

67% of companies that use only 1-5 KPIs state that they are Mature in their S&OP Process. 73% state that they are either Mature or Sophisticated in their use of S&OP Tools. Companies with 1- 5 KPIs cut across all size companies.

73% of companies that use only 6-10 KPIs state that they are Mature or Expert in their S&OP Process. 91% state that they are either Mature or Sophisticated in their use of S&OP tools. Companies with 6-10 KPIs cut across all size companies.

One company that uses 11-20 KPIs stated they are a Novice in their S&OP process. They are Immature in their use of S&OP tools and are using spreadsheets. This company has \$11-\$20 billion in sales.

Question 16 - Integrated Business Planning (IBP)

67% of the companies indicating they have implemented or are planning to implement IBP are either Mature or Expert in their S&OP Processes. 87% are Maturing, Mature or Sophisticated in their use of S&OP Tools. 67% state they are aligning the Financial Plan with the Operations Plan. Companies interested in IBP cut across all size companies.

Question 17 - How would you rate your company's use of S&OP technology tools?

Maturing – 54% state that they are Mature or Expert in their S&OP process. Maturing companies cut across all size companies.

Mature – 82% state that they are Mature or Expert in their S&OP processes. Mature companies cut across all size companies.

About Hitachi Consulting

As the global business and IT consulting company of Hitachi, Ltd., Hitachi Consulting is committed to helping clients bring their business visions to life through industry-led services and solutions. The company is uniquely positioned with the agility and client-focused approach of a boutique firm combined with the stability and innovation that comes from the Hitachi heritage.

Hitachi, Ltd. (NYSE: HIT / TSE: 6501), headquartered in Tokyo, Japan, is a leading global electronics company with more than 100 years of innovation. As a world leader, the company is committed to creating richer lives and a better society by providing products and services with a new level of value and potential based on the latest advances in technology, especially knowledge and information technology.







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Here are the full results from each question:






2. What was your company's total revenue for the prior fiscal year?

		Response Percent
< \$1 billion		28.6%
\$1 billion to \$3 billion		26.5%
\$4 billion to \$5 billion		14.3%
\$6 billion to \$10 billion		12.2%
\$11 billion to \$20 billion		6.1%
> \$20 billion		12.2%







3. Does your company have S&OP as a standard part of your business processes?

		Response Percent
A. Yes, and it is a standard process throughout the company		38.8%
B. Yes, but it is not a standard process throughout the company		32.7%
C. No, but considering it		16.3%
D. No, and not considering it		10.2%
If you answer D why not considering S&OP? (Please select this check box to enter comments)		8.2%








4. To what level does your company embrace S&OP?

		Response Percent
We don't use it		8.3%
Infancy – Just beginning to investigate the process		22.9%
Novice – Processes in place but held in silos, etc.		22.9%
Mature – Defined and documented process driven by collaborative recurring planning sessions, etc.		39.6%
Expert – Mature level + defined KPIs, P&L tie-in, C-Level report-out, etc		6.3%






5. We would like to identify the difference between the S&OP process and S&OP decision making. Who owns the S&OP process in your company?

		Response Percent
C-Level executive sponsor		22.9%
Finance VP		10.4%
Marketing VP		10.4%
Operations VP		12.5%
Supply Chain VP		27.1%
Other (please specify)		16.7%



6. Who owns the S&OP decision-making in your company?

		Response Percent
C-level executive sponsor owns all S&OP decisions		25.0%
Business unit leader		13.6%
General Manager		9.1%
VP Supply Chain		20.5%
VP Operations		9.1%
VP Finance		0.0%
Director		9.1%
Other (please specify)		13.6%



7. What barriers do you see in your company to an effective S&OP process?

		Response Percent
ERP		14.3%
Effective S&OP tools		42.9%
Lack of executive commitment		28.6%
Data accuracy and integrity		33.3%
Other (please specify)		16.7%






8. Does your company have a C-level executive sponsor for company-wide S&OP?

		Response Percent
Yes		56.8%
No		43.2%




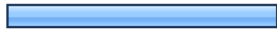


9. Does your company utilize cross functional teams as part of the S&OP process?

		Response Percent
No, one group does all the S&OP work		31.8%
Yes, we have cross functional teams as part of the S&OP Process.		65.9%
If no, which group? (Please select this check box to enter comments)	<input type="checkbox"/>	2.3%





10. At what level does your company manage S&OP? Select all that apply.

		Response Percent
Global		45.5%
Regional		50.0%
Business Unit		38.6%
Marketing		13.6%
Plant		18.2%
Other (please specify)	<input type="checkbox"/>	2.3%





11. The S&OP process is driven by which of the following actions? Select all that apply.

		Response Percent
Scenario planning to reduce risk		30.8%
Scenario planning to improve and optimize performance		61.5%
Reducing inventory to free up working capital		59.0%
Aligning financial plans with operational plans		48.7%
Improving demand forecasting and managing demand volatility		53.8%
Managing supply constraints in the plan		51.3%






12. How often is your S&OP process plan prepared?

		Response Percent
Weekly		7.9%
Monthly		57.9%
Quarterly		18.4%
Monthly, with weekly adjustments		15.8%

13. Which timing scenario best describes your cycle of S&OP meetings?

		Response Percent
Within the first 5 days of the month		16.2%
Spread over the first 2 weeks of the month		37.8%
Spread over more than 2 weeks of the month		18.9%
The cycle basically requires the entire month to complete		27.0%

14. How far into the future does your S&OP planning horizon cover?

		Response Percent
3 months		15.4%
4 – 6 months		20.5%
7 – 12 months		25.6%
13 – 18 months		23.1%
More than 18 months		15.4%





15. Does your company utilize Key Performance Indicators (KPIs) to govern S&OP performance?

	Response Percent
We have no defined KPI's and don't plan to develop KPI's	5.0%
No, we have yet to define our KPI's but we plan to do so	20.0%
Yes, 1 - 5	40.0%
Yes, 6 - 10	30.0%
Yes, 11 - 20	5.0%
Yes, more than 20	0.0%

16. Is your company utilizing Integrated Business Planning, IBP? (Integrated Business Planning (IBP) refers to the technologies, applications and processes of connecting the planning function across the enterprise to improve organizational alignment and financial performance. IBP accurately represents a holistic model of the company in order to link strategic planning and operational planning with financial planning.)

	Response Percent
Yes	43.6%
We are considering IBP	30.8%
We have no plans to implement IBP	25.6%

17. How would you rate your company's use of S&OP technology tools?

		Response Percent
Immature – We use spreadsheets		23.1%
Maturing – We are beginning to use S&OP tools		41.0%
Mature – We've been using an S&OP tool for a while with good results		30.8%
Sophisticated – The tools are imbedded into every aspect of our S&OP process		5.1%
Cutting Edge – We work with our S&OP tool vendor to develop enhanced functionality		0.0%

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