

SIOP (Sales Inventory Operations Planning): **Creating Predictable Revenue and EBITDA Growth**



Lisa Anderson, President
Diane Garcia, Consultant

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(Sales Inventory Operating Planning)

Creating Predictable Revenue and EBITDA Growth

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Foreword

As I look at the chaos that has occurred in the supply chain the last few years and its negative impact on service, growth, and profitability, I see a need for a proven process. The SIOP (Sales, Inventory and Operations Planning) process, also known as S&OP, is the answer. It shines a light on what is needed, engages all departments across the organization and proactively aligns demand with supply to enable growth and profitability. SIOP creates predictability in revenue forecasting and builds an operational rhythm that ensures the appropriate strategic and tactical decisions are made to drive EBITDA growth and working capital improvements.

You need SIOP if you have ever said, “Why is all this inventory on the shelf yet we don’t have what we need?”, “How will we ever make this sales plan?”, or “Will our customers trust us to deliver?”. These are clear signs that Sales and Operations are not aligned.

SIOP provides the playbook to avoid pitfalls, navigate changing conditions, and grow the business. For example, recent SIOP wins include a rapid 40% increase in business growth, a drastic on-time-in-full (OTIF) improvement of 54%, and a 50% reduction in inventory (which made Finance happy) while maintaining customer service levels (which made Sales happy).

As I believe manufacturing and supply chain will be cornerstone to success in the decades to come, I wanted to share this exciting guide and associated best practices. A special thanks to my co-author Diane Garcia and to the entire LMA team especially Liz Cruz, Jesse Dalton, and Cindy Orshonsky who have been instrumental in helping clients implement SIOP programs to successfully navigate supply chain chaos, achieve bottom line results, and, most importantly, engage their employees.



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About the Authors



Lisa Anderson, President, LMA Consulting

Lisa Anderson is the founder and president of LMA Consulting Group Inc. Known for creating bold customer promises and profits, she is experienced in working with closely-held, private-equity backed and large, complex organizations in industries ranging from aerospace and defense, building and industrial products to food and beverage and healthcare and medical devices.

If it relates to improving the performance of a manufacturer, Lisa has done it. Her expertise encompasses the full scope of end-to-end supply chain business processes from creation to customer. Her unique talent resides in taking a holistic view of the business encompassing human capital, business systems, technology and finance to identify the priorities and plans that will have the greatest impact and accelerate bottom line business results.



Diane Garcia, Consultant

Diane L. Garcia, Lorraine Consulting, LLC, is an end-to-end supply chain management expert who helps manufacturing and distribution companies improve their businesses. Always on the cutting edge, Diane takes a hands-on approach to deliver best practices from around the world.

Diane specializes in the design and implementation of Sales, Inventory & Operations Planning (SIOP), which enables proactive decision-making, growth, and profitability. With a mechanical aptitude and years of technical automotive expertise, Diane can unravel business complexities into segments, categories and processes that drive progress.

Why SIOP Works

“We enjoyed millions of dollars of increased cash flow due to reduced inventory levels and improved material availability on our highly configurable, made-to-order, short lead-time product.”

Jim Cenname – President, US Aluminum

“We achieved quantitative and qualitative results within 6 months! Lisa successfully partnered with our team to implement SIOP/MPS process. She is responsive, prepared and ready to make progress at every juncture.”

Bob Ellithorpe – General Manager, Aerospace Dynamics International

“We achieved all of the goals that we defined from the outset, especially On Time In Full (OTIF). We started with 38% and ended with an average of 87% reaching 92%. The tools that were put in place were sustainable and are working.”

Ciro Ahumada – Vice President Americas, Armacell, LLC

“Lisa came in and used her best skill which is listening and evaluating, only second to her knowledge of supply chain. Lisa met with all of our key supply chain people from scheduling to warehouse, inventory, and production then put together a solid plan for us to execute. Lisa brought in the SIOP process which allowed us to increase our visibility from two weeks to a month to two months to three months – then built the processes around SIOP so that forecasting was in place along with long-term production scheduling which led to proper MRP planning and tied all those aspects together. SIOP was one of the key things that helped all of the metrics get better – because visibility of data is king in any business – ending in a more consistent production schedule which is the key to overall equipment effectiveness, efficiency, and ultimately, labor costs and productivity.”

Craig Young – Senior Director, Nellson LLC

“We needed a business ‘rhythm’ for how we balance overall demand against our capacities and how we ensure that we have the right inventory. The theme behind this is how to make the company more predictable, how to get in front of the demand of the customers and how does that translate into a sustainable operation. That way you become more adept at revenue, margins and on-time delivery for customers. The answers was the SIOP process – balancing sales, inventory and operational planning. SIOP is not a one-time thing. It is something you do week in and week out requiring the engagement of everyone in the organization. We worked with LMA to help us understand the data, the sources of the data and how to cleanse it so that it is meaningful, look at gaps in processes and systems and how to manually build the connectivity and provide the systems process discipline to create our own SIOP operational discipline.”

Rick Moroski – Chief Operating Officer, Schenck Process LLC

Transformative Strategies

No one business unit/department/group is a silo.

In order to support growth and deliver bottom line results, an interconnection of disciplines must occur. They must be aligned, committed to the same goal and open to evolving to support the greater good.

Processes drive growth.

Top-line and bottom-line growth must be driven by processes that will drive consistency. By standardizing processes, departments and individuals will understand the goal and their contributions.

Data must be king.

To make informed decisions, accurate, reliable data is critical. Connecting, assembling, filtering, analyzing, predicting and, ultimately, reporting data that points to strengths, weaknesses and opportunities is key to making sound business decisions.

Accountability and responsibility will strengthen the organization.

Every link in the supply chain is critical to its success. Being accountable and taking responsibility for understanding how each link interconnects will set the foundation for success.

The SIOP process will fuel transformative strategies for growth.

When SIOP aligns demand with supply it fuels transformation strategies along the entire supply chain. By powering visibility, SIOP opens the door to examine every link in the chain. From enabling margin analysis by product groupings, customers, markets and regions to examining the customer experience, the SIOP process provides for holistic as well as departmental strategies.

Results from actively engaging a SIOP process can help set pricing, expand product offerings, discontinue items and design the appropriate manufacturing and supply chain footprint to support growth and EBITDA plans.



EXAMPLE:

When producing products from multiple production facilities (internal and external) in different regions, lead times and costs will vary. By having a robust SIOP process, information can be extracted to evaluate the reallocation of internal production, make vs. buy options, and capital requests to expand capabilities and improve operational performance.

The SIOP Methodology

Before implementing SIOP, core processes typically function in silos. For example, **SALES** develops a forecast in dollars and expects it to be fulfilled. However, **OPERATIONS** does not know how to easily translate dollars into products and units. This results in their inability to purchase materials that have long lead times and prepare the appropriate staffing.

This causes the two functions to be misaligned, resulting in service delays to the customer. When using the SIOP methodology, SIOP connects those processes, creating predictability in the revenue plan, efficiency in operational execution, and stability in business planning.

SIOP: SALES, INVENTORY & OPERATIONS PLANNING

Also known as S&OP
(Sales & Operations Planning).

Although identical processes, SIOP emphasizes the equal importance of inventory.

Note: Most SIOP processes include financial planning elements of the business addressing profitability, margins, etc.

SIOP Integrates Core Processes

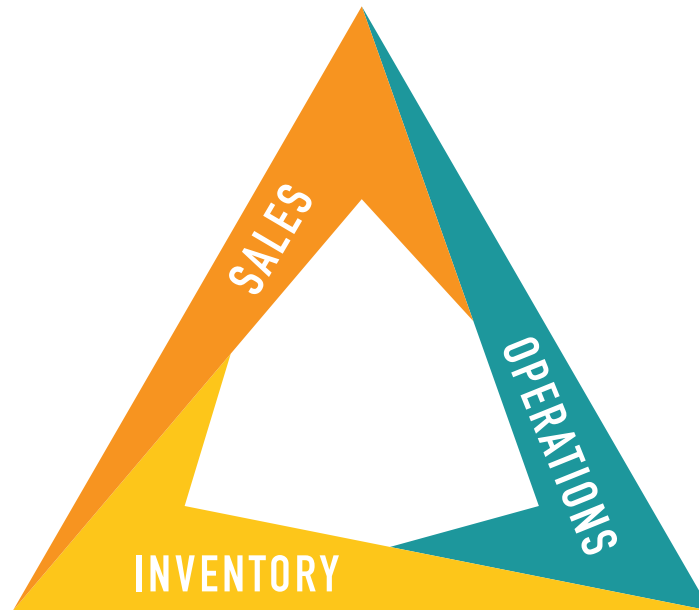


SIOP integrates the core processes of the organization and connects them with customers, suppliers and other external partners.

SIOP is sometimes referred to as "IBP" (Integrated Business Planning).

IBP signifies a broader concept of business planning and adds financial planning elements to the business.

SIOP Balances Sales, Inventory & Operations Plans



SIOP balances sales, inventory, and operational plans across the organization.

Like balancing a small prop plane so that neither side has too much weight or drag, SIOP is the balancing process that keeps sales aligned with operational plans and inventory objectives. When these objectives are aligned, customers are satisfied, operational performance improves, and inventory objectives are achieved.

Before implementing SIOP, sales, inventory, and operational plans are not likely balanced. Typically, the **SALES** team is the driver and given priority with little consideration given to impacts on the rest of the organization.

This results in other key stakeholders focusing on ensuring the sales plan is fulfilled.

ENGINEERING prioritizes based on their interactions with the customer.

OPERATIONS jumps through hoops to do whatever it takes to fulfill the sales plan.

FINANCE scrambles to chase financial forecasts.

After implementing the SIOP process, the three areas are balanced, with revenue and financial planning becoming more predictable.

SIOP INVOLVES AND ENGAGES PEOPLE ACROSS THE ORGANIZATION.

Before implementing SIOP at a leading industrial manufacturer, each stakeholder operated solely from the respective department's point of view.

SALES focused on landing big projects and adjusted dates per customer requests.

When receiving a sales quotation, **ENGINEERING** took whatever time was needed to perform quality work.

The customer approved drawings when convenient.

And in the remaining time to meet the expected delivery date, **OPERATIONS** and **PURCHASING** scrambled to procure materials, produce the product, and ship to the customer.

FINANCE struggled to predict what would be invoiced monthly.

After SIOP was implemented throughout the organization, **SALES** effectively talked with **OPERATIONS** as big projects came along. **ENGINEERING** estimated long-lead time materials early in the process and communicated to **PURCHASING**. **OPERATIONS** gained visibility to incoming orders as soon as sales quotations were funded and were probable to occur.

Most importantly, the team learned how to work together.

As small wins were shared throughout the SIOP process, engagement followed.

Engages Across the Organization

SIOP involves and engages people across the organization.



SIOP reorients the process from frustration and blame to engagement and solutions.

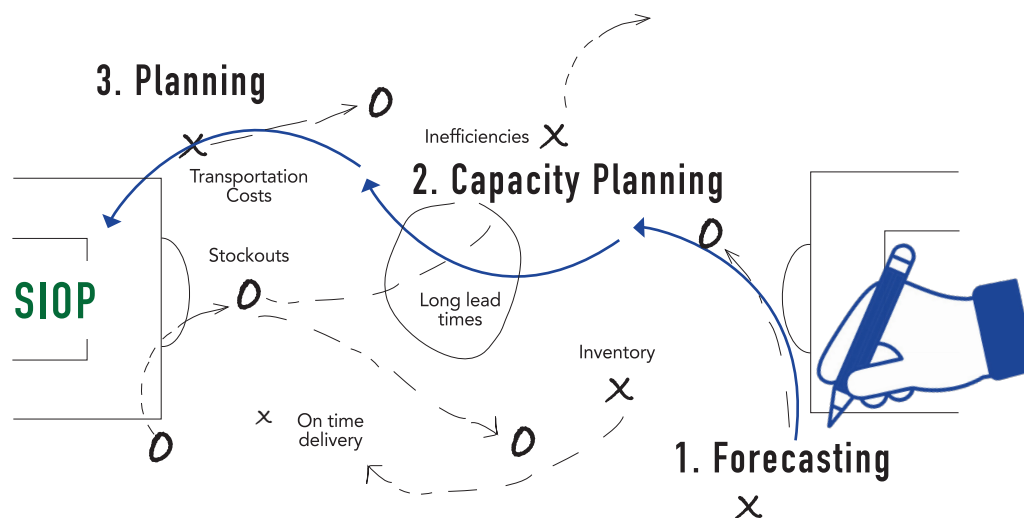


SIOP Provides the Playbook

For example, when **SALES** adds a large potential customer project to the pipeline, the SIOP team springs to action. They evaluate whether the facility can ramp up quickly, if suppliers can reliably supply materials fast enough, if new machinery or equipment should be purchased, if volume should be transferred or offloaded, and if customers should be prioritized.

In an aerospace manufacturer, when a key customer added a significant potential project into the mix, different scenarios were evaluated and a playbook was developed. **PURCHASING** was proactive and ordered the appropriate long lead-time materials. **OPERATIONS** quickly sourced offload suppliers to supplement the machine shop and purchased an additional paint line to ensure the volume increase could be fulfilled. Although running at full capacity, the new orders were fulfilled, and high service levels were maintained.

SIOP provides the playbook for business planning and execution.



SIOP bridges strategy and tactics with scenario planning and plays.



SIOP: Customization

SIOP must be tailored to each situation and unique set of business circumstances. Each organization has different people, processes and systems. Even within the same company, many differences exist. This is before reviewing the differences in data, cultures, and supply chain partners. Although built on core concepts, the SIOP process is customized to the business requirements.

For example, in a company with shared resources, processes, and systems, differences in the use of data might be stark.

At one client facility, customers' ship dates were temporarily scheduled into future years to segregate the orders for material planning purposes while waiting for the customer to approve the drawings. These dates were updated after approval and design. Because of this 'process', there was not enough time for **OPERATIONS** to produce with the late notice, so they built an offline process to track orders and plan production. Anyone relying on the system would forecast the sale in future periods.

In another of the clients' facilities, the process and use of data were completely different. As they took orders, they configured part of the order in the system and used that information to purchase materials and plan production. Although this process required significantly more resources, the shipment dates stayed in sync with customer expectations in the system. Given the differences, the SIOP design had to incorporate the process differences between the two facilities to accurately predict revenue and ensure customer satisfaction.

The SIOP process is customized to meet business objectives. It is not an off-the-shelf solution.



Integrates Stakeholders

SIOF is a repetitive process with a specific cadence. Its cycle recurs monthly and includes data gathering, demand planning, supply planning, an alignment between demand and supply, and an executive review.

During the executive SIOF review, key issues and opportunities surface, alternatives are discussed, and decisions are made.

Because the process is a continuous loop, the focus transitions from development to review and analysis. Instead of firefighting, the team digs into trends, exceptions, and solutions.



The SIOF methodology integrates stakeholders. It is not a one-time task.

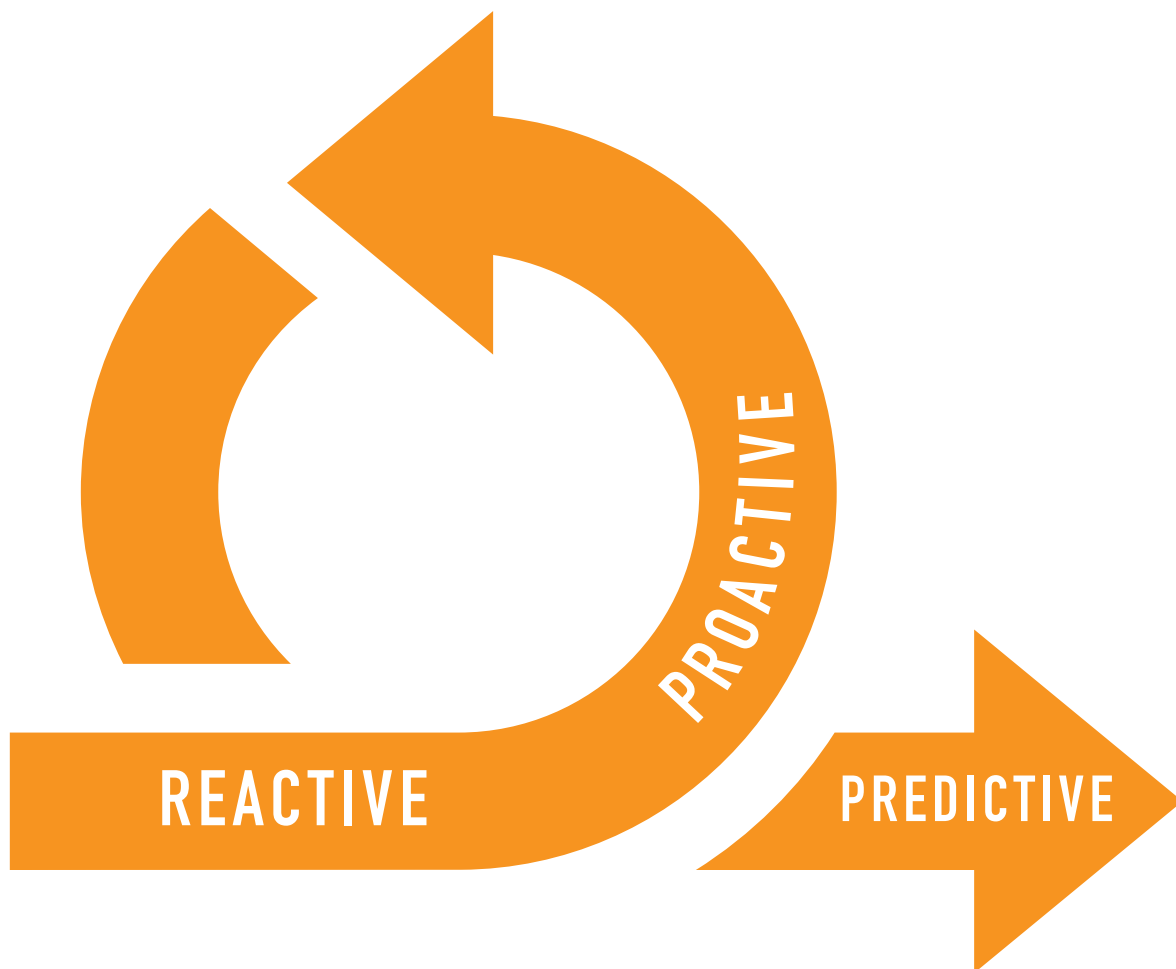
Forward Looking

As companies attempt to get **SALES** and **OPERATIONS** on the same page, issues and bottlenecks arise.

For example, **SALES** unknowingly agrees to a sale that **OPERATIONS** cannot meet. Or, **OPERATIONS** realizes demand is greater for the product line that requires additional resources to produce and is caught off guard.

Before leveraging the SIOP process, both groups jump into the blame game, start firefighting and run in circles. Once SIOP is in place, **SALES** would receive quick feedback on longer lead times and contact the customer to address the delay. Similarly, **OPERATIONS** would have visibility of the changing product mix, making necessary adjustments in advance to reallocate resources and adjust plans accordingly.

Reactive flips to proactive. The best in class pivot to predictive.



SIOP is Proactive and Predictive. It pivots from reactive to proactive.

The SIOP Team

Although the team will always include **SALES, CUSTOMER SERVICE, OPERATIONS, SUPPLY CHAIN,** and **FINANCE**, it should also include other resources integral to the alignment of demand and supply.

For example, in configure- or engineer-to-order environments, **ENGINEERING** resources will play a key role, whereas, in regulation-heavy organizations, **QUALITY** is often included. If the function is important to aligning sales, inventory, and operations plans, include them.

This core team requires support to ensure success.

A **SIOP LEADER** drives the process forward, arbitrates conflicts between the functions, and overcomes issues and bottlenecks. An **EXECUTIVE SPONSOR** provides resources and breaks down barriers as needed. And, since ERP systems and data are integral to the SIOP process, **IT** support must be allocated.

The SIOP Team



The SIOP team must include key functional resources from across the organization.

SIOP Phases

The **Assess Phase** is important in bringing out the unique factors to be incorporated in the **Design Phase**. Once the process is customized to support the business requirements, it will be built and tested in the **Pilot Phase**. The heavy lifting is done in this phase as the design is modified to work in the business environment, the team's feedback is incorporated, and the process is tested to ensure the outputs are directionally correct and will drive the appropriate decisions.

Adjustments will be incorporated, and the process will be **Rolled Out** to additional product lines, customer groups, facilities, and regions. The **Improve Phase** is important beyond a continuous improvement philosophy as this is where the process will continually evolve with changing business conditions to stay ahead of the game.



The most successful SIOP programs include five phases: Assess, Design, Pilot, Rollout, Improve.

SIOP Functional Flow

A consensus forecast should incorporate input from Sales & Marketing, customers and industry sources.

The **SALES** forecast will consider historical trends, growth rates, sales orders, sales quotations, market trends, new product introductions, customer agreements, sales and customer feedback, and any other key factors. It will be aggregated by regions, markets, industries, key customers, and/or by product lines. The forecast will cover a minimum of 12-18 months.

The sales forecast will be converted into a product forecast.

In industries with repetitive products, the production forecast is likely to be readily available with statistical forecasting approaches. The challenge is typically in nailing down new product forecast quantities and timing. In industries with custom products or unit of measure conversions, the translation will not be straightforward.

For example, in an equipment manufacturer, the sales dollar forecast for the base model did not provide the level of detail required to order long-lead time materials and plan manufacturing capacity, unless the material type and size characteristics could be derived. In a life science manufacturer, the dollar forecast for custom make-to-order products did not provide the appropriate level of detail to determine the quantity in an equivalent unit of measure. The translation of the product forecast must get to the level of detail required to support long-range supply planning considerations.



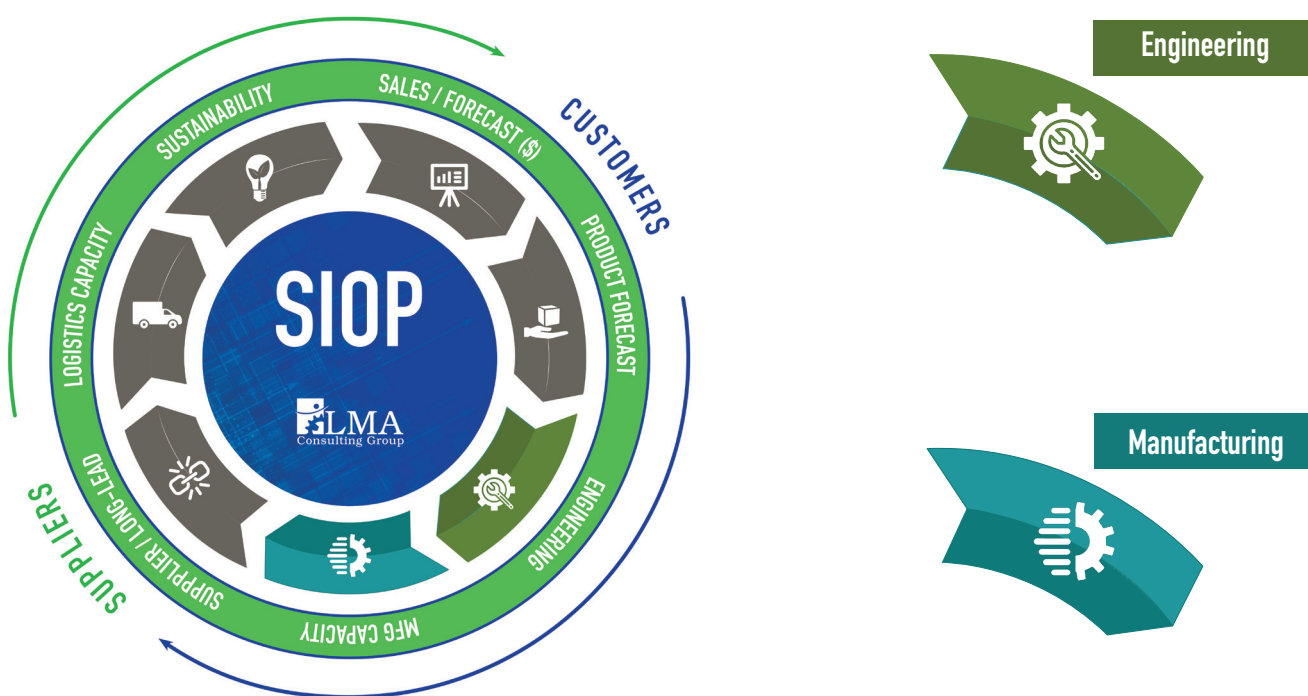
SIOP Functional Flow

In engineering-heavy environments, forecasting the engineering workload and comparing it against capacity is critical.

ENGINEERING teams require visibility of the sales and product forecast, including all active quotes and open sales orders. Line of sight to quotes that with likely occur can provide a heads up to potential significant projects. With a view of orders waiting to be engineered, **ENGINEERING** can adjust resources, reallocate staffing, and plan accordingly. The same holds true for high volume environments. For example, in a high-volume beverage manufacturer, engineering teams need the visibility to plan equipment upgrades, schedule the appropriate preventative maintenance teams to service the machinery, and partner with technical experts to develop plans to maximize operational performance.

Product forecasts will be translated into long-range production plans, machine capacity plans, and resource plans.

Based on these long-range plans, **ENGINEERING** and **OPERATIONS** can evaluate machinery, tooling, labor, and support resource requirements vs. available capacity. Decisions can be made to reallocate capacity among sites, upgrade and/or expand machinery and equipment, hire, cross-train, offload, insource, outsource, etc. For example, in a structural storage manufacturer, defining the long-range production plan provides critical insights into capacity allocation among sites. Although there is a certain degree of cross-capabilities amongst plants, complex products can only be produced in one or two facilities. With long-range visibility into the master production schedule, capital investment decisions can be made, and Manufacturing Operations will hire, cross-train, and automate to scale up and meet demand.



SIOP Functional Flow

Product forecasts will be translated into long-lead-time material and commodity forecasts.

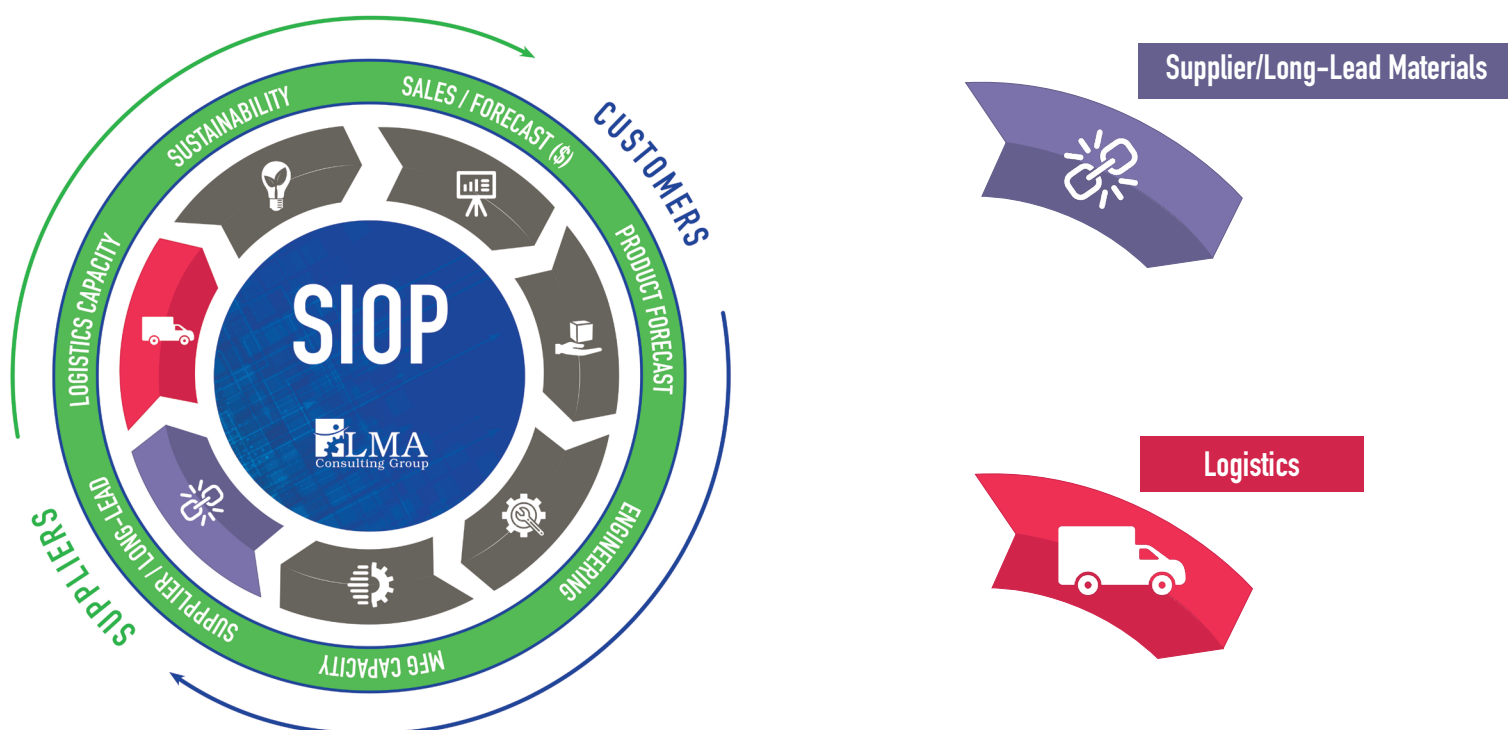
These forecasts will be provided to key suppliers for long-range planning. And they will be used to secure supply at the best-negotiated pricing.

For example, at the onset of the Russia-Ukraine war, the SIOP process helped several clients who relied on raw materials from Ukraine to estimate their needs for the next year so that supply could be secured at the lowest cost.

Product forecasts will be translated into the appropriate key logistics factors.

If a company distributes products, it will estimate the requirements in the number of container ships, trucks, rail units, or package shipments heading to distribution centers. Space, equipment, automation, and labor requirements will also be evaluated.

For example, in a hand tools manufacturer, wheelbarrows require significant space in oversized racks in the warehouse. The ability to estimate wheelbarrow cubic foot requirements is important to forecasting storage capacity, and it ended up dictating whether a warehouse expansion was required to support sales growth. From a transportation viewpoint, forecasting truckloads allowed the company to set up favorable agreements for both international shipping and intermodal freight.



SIOP Functional Flow

The SIOP methodology can predict sustainability requirements.

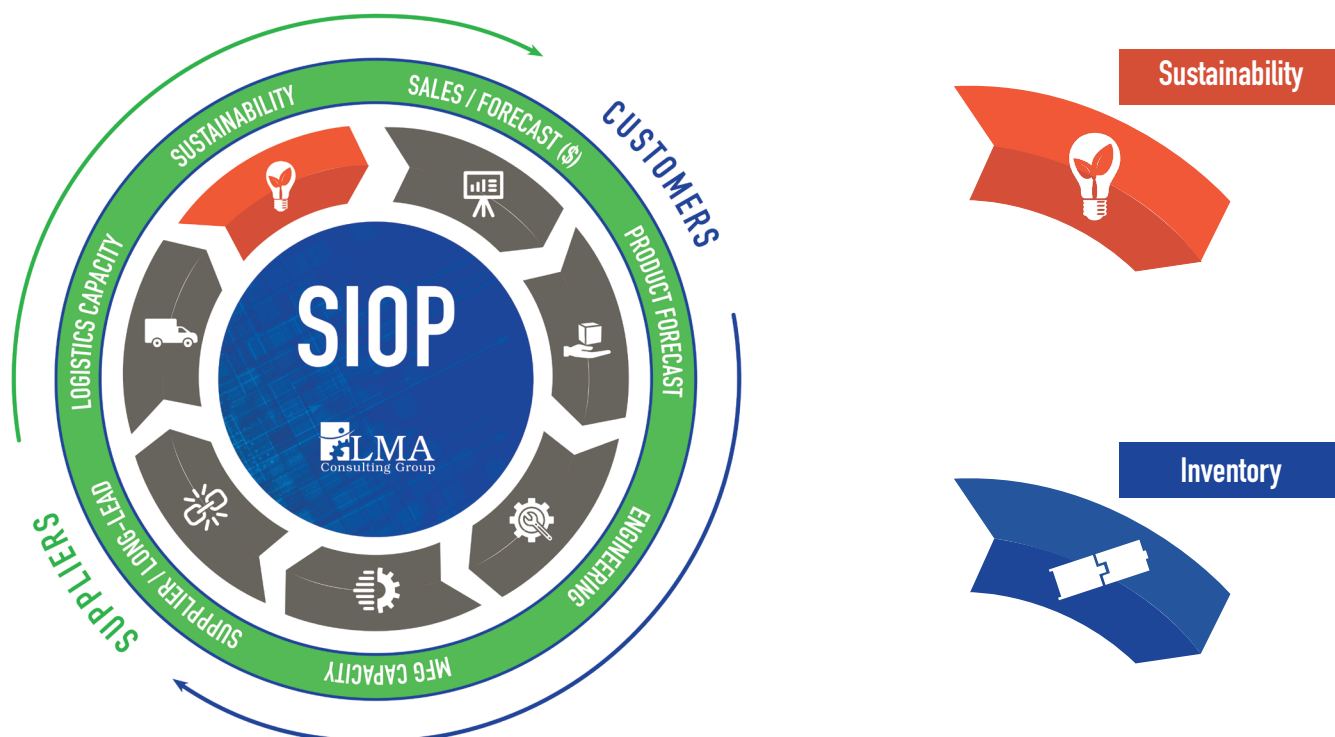
As carbon footprint information becomes available, sustainability requirements can be forecasted.

For example, in a building products manufacturer, for products purchased from India, capture the carbon footprint of manufacturing in India as well as the transportation to the US manufacturing facility, assembly into the final product, storage and movement around the facility, and transportation to the customer. Also consider returns, repairs and rework if feasible.

Inventory strategy is included in the SIOP process.

For example, if the executives want to build inventory to prepare for a significant machine upgrade, those factors will be built into the supply plans. Or, if there are concerns about a potential recession or slow sales while interest rates rise, executives can decide to more closely manage inventory levels to free up cash. These changes in inventory strategy will be reflected in adjustments to the planning factors. Inventory levels and associated strategies are always a key part of the SIOP process.

Beyond these strategic decisions, SIOP provides an inventory plan. SIOP starts with beginning inventory, adds in production and receipts, and subtracts shipments and transfers, resulting in an ending inventory forecast.



SIOP Functional Flow

The SIOP process culminates in a financial forecast.

The **DEMAND PLAN** provides the revenue forecast. The **SUPPLY PLAN** provides the manufacturing, purchasing and interbranch and intercompany forecasts. And the **INVENTORY PLAN** provides the inventory forecast.

The SIOP process drives adjustments to these elements with make vs. buy decisions, pricing strategies, operational improvement plans, and capex equipment purchases. Adding those into the mix will provide **WORKING CAPITAL** and **EBITDA** forecasts which will support a financial planning and budgeting process.

Financial topics are also interwoven into the transformative strategies of SIOP. A key outcome of data analysis and predictive analytics is customer and product profitability.

For example, in a lighting manufacturer, as margins and capacity bottlenecks were reviewed together, **SALES** and **OPERATIONS** were able to work together to determine which products to emphasize, which prices to adjust, and which cost reduction programs to prioritize.



Systems

The SIOP process does not require a specific system to support the methodology.

Although advanced, global companies may upgrade to a SIOP software to further automate and gain analytical capabilities after successfully executing foundational SIOP processes, it is not required for success.

On the other hand, SIOP processes rely on integrated enterprise resource planning (ERP) software to support demand and supply processes. ERP systems contain data that is integral to the SIOP process. In configure-to-order (CTO) and engineer-to-order (ETO) environments, a configurator module is preferred in addition to typical order-to-cash ERP modules.

Beyond base ERP systems, there are two key software options that can benefit SIOP in most situations.

- First is business intelligence (BI) and predictive analytics capabilities to analyze data, perform scenario planning, and predict the future.
- The second software is customer relationship management (CRM) systems. They typically will add value with key customer information.
- Both software options will be included in modern ERP systems. The key question will be their capabilities compared to the business requirements, which frequently drives companies to best fit software options.

Sales forecasting software can add value as companies gain momentum with core SIOP processes and want to take it to the next level and/or in certain industries with complex demand planning requirements such as in the consumer products industry. Also, as companies are ready for advanced SIOP processes and/or in certain complex situations, advanced planning software can add value in driving EBITDA performance when executing SIOP plans (also referred to as S&OE or Sales & Operations Execution).



SIOP Methodology relies on data.

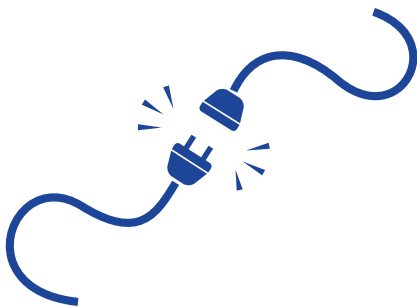
No matter the state of the ERP system, data can be extracted. SIOP will establish a regular routine to extract, cleanse, connect, consolidate, analyze, and chart data to support decision-making.

The lack of data integrity is a common roadblock for SIOP planning.

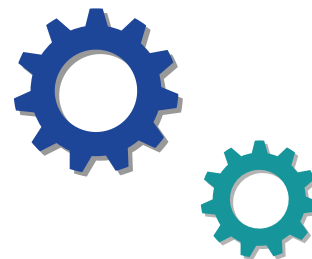
For example, in an equipment manufacturer, there were multiple names for the same part. A smart part number was created to consolidate for better forecasting and planning.

Next, to gain full visibility and meaningfully interpret the information, the data must also be connected.

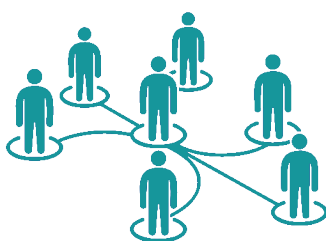
For example, sales quotations could be created in one system and sales orders entered into another system. To consider both sources without double counting any orders, the two data sources must be tied together. By connecting this data, the SIOP process can provide visibility to the full sales pipeline so that **ENGINEERING** and **OPERATIONS** could successfully prepare and fulfill the demand.



Connect



Directional Cleanse



Mash-up



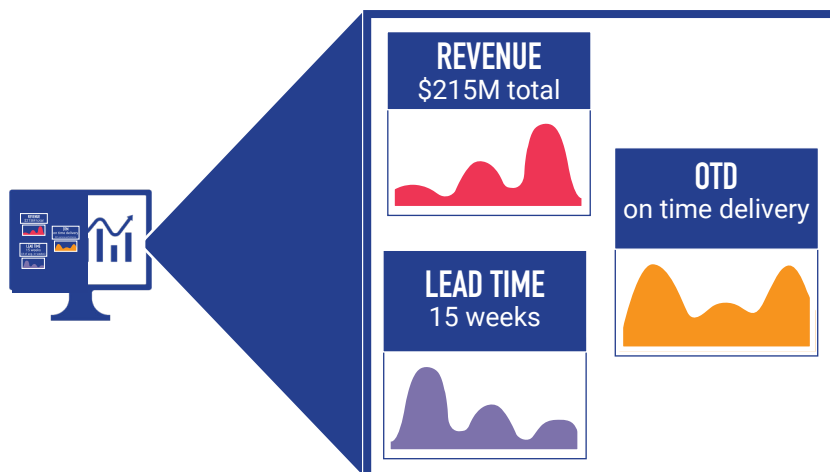
Explore, Visualize, Share

Monthly SIOP Routine

The monthly SIOP routine includes the following steps (as detailed below):



The monthly routine culminates in an executive summary and dashboard which supports strategic decision making and the priority follow ups.



Execution: S&OE

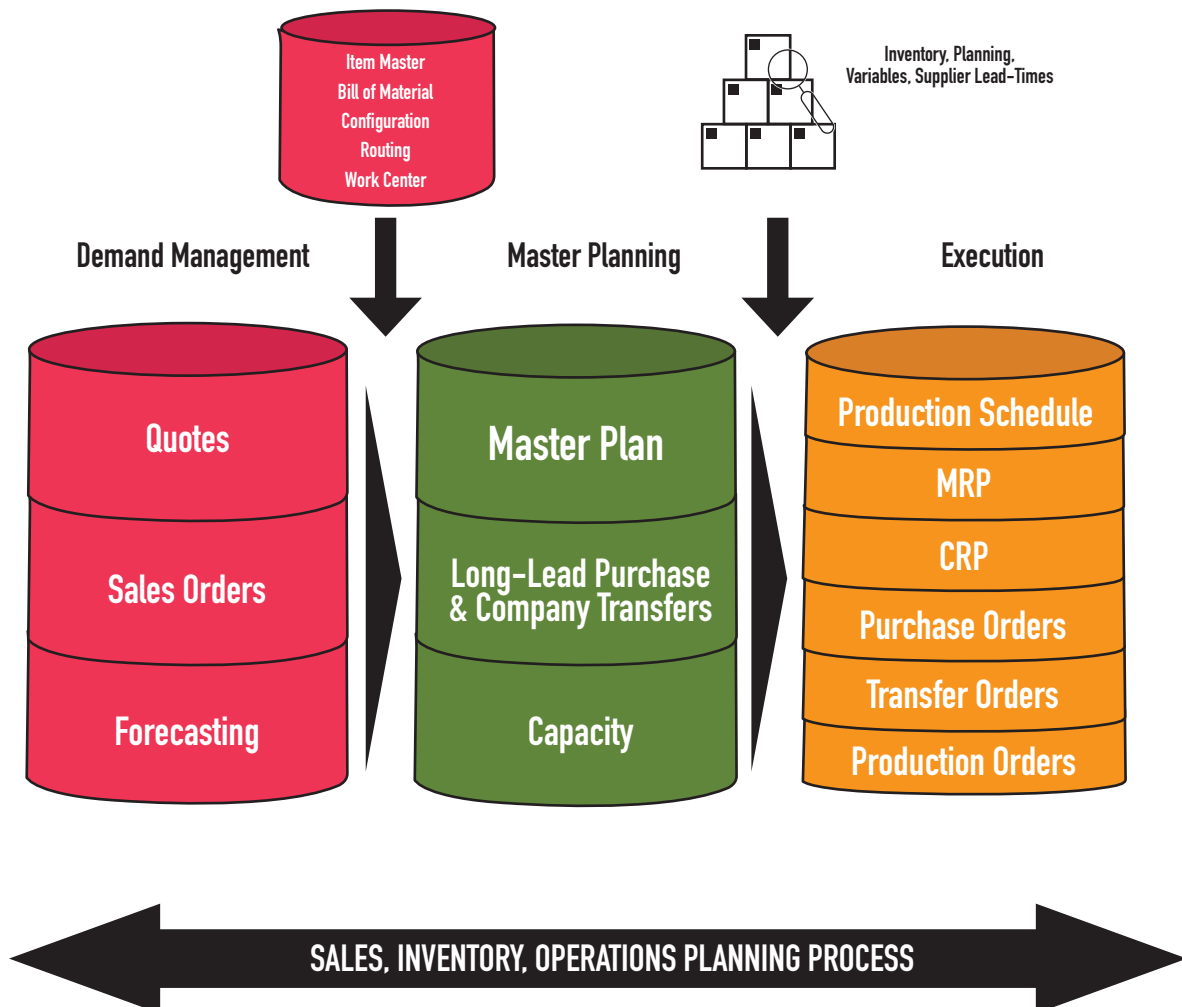
**Strategy rarely fails in the formulation.
It frequently fails in execution.**

As important as staying in front of changing customer needs and business conditions is in instituting a SIOE process, it is equally critical to ensure plans are successfully implemented.

When moving from the aggregate level of SIOE to the tactical level of demand management, master planning, and execution processes, the devil is in the details.

For example, long-range capacity plans must be translated into detailed production schedules by machine so that **OPERATIONS** can see sequence, priority and labor requirements.

SIOE Execution Process



SIOF Outputs & Results

The SIOF methodology will deliver a consensus forecast, create an operational rhythm, and deliver bottom-line financial results.

For example, when sales order requests and production schedules' delivery timing do not converge, service levels suffer, and lead times extend.

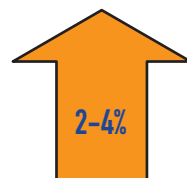
On the other hand, when **OPERATIONS** gains visibility to the sales forecast, delivery performance and lead times will not only improve but production plans will be level loaded and efficiencies gained.

PURCHASING will incorporate these projections into supplier agreements and negotiate discounted prices. With the visibility and time to plan, inventory levels can be effectively managed and working capital targets achieved.

EBITDA gains follow.

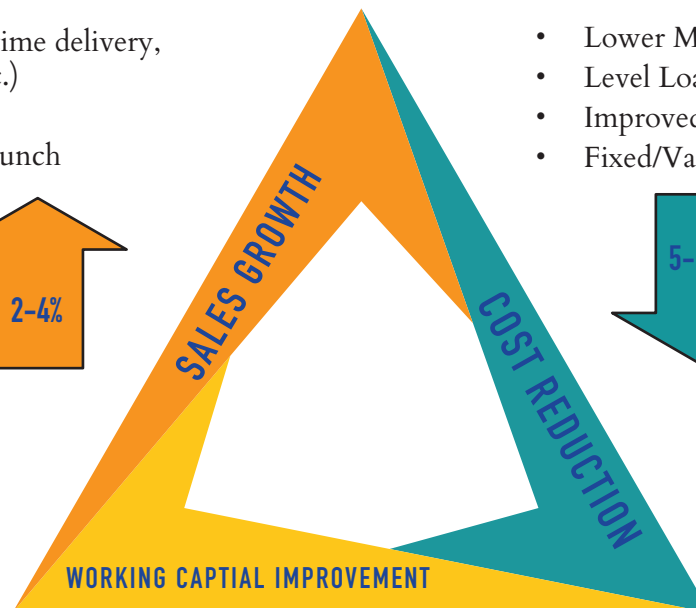
Sales Growth / Predictability

- Improved Service (on-time delivery, lead time reduction, etc.)
- Reduced Stock Outs
- Accelerated Product Launch



Cost Reductions / Margin Predictability

- Lower Material Cost
- Level Loaded Plan
- Improved Labor Productivity
- Fixed/Variable Cost Optimization



Reduced Inventory

- Improved Inventory Velocity / Turns
- Finished Goods Inventory Reduction
- Work-in Progress Reduction



*Based on a study by the Hackett Group

KEY LEARNINGS/OUTCOMES

The SIOP process has become an integral component of maximizing working capital and achieving predictable revenue and EBITDA growth.

- **GROWTH** – the SIOP process drives growth.
- **PREDICTIVE** – SIOP has transitioned the organization from reactive to proactive by reorienting the focus to thinking ahead and developing strategies to evolve with changing business conditions to thrive.
- **SUSTAINABILITY** – SIOP creates the operational rhythm to drive predictability, profitability, and sustainability.
- **DATA DRIVEN** – Aligned, engaged and knowledgeable teams value and use the SIOP information and process to make the appropriate strategic and tactical decisions at the ‘right’ times to grow sales and margins while providing high levels of service even during disruptive conditions.



KEY LEARNINGS/OUTCOMES

FUNCTIONAL IMPROVEMENTS

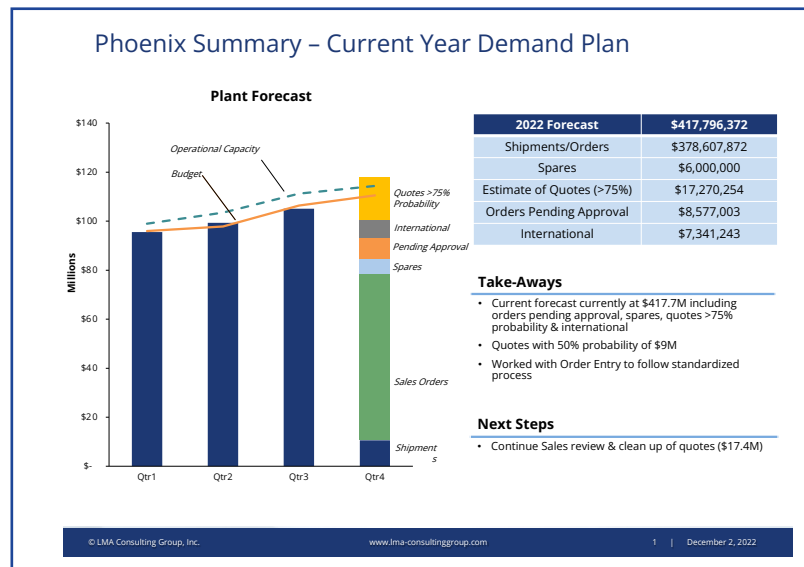
After rolling out a SIOP process with a key client, we asked them to describe the overall benefits to the business.

- **SALES** can proactively manage quote status (probability, funding status, dates) and will have a direct impact on customer lead times and on-time delivery performance.
- **BUSINESS MANAGEMENT** - The entire team leaped forward by gaining insight into key quote characteristics (material type, size) earlier in the process with smart part numbers.
- **CUSTOMER SERVICE** - Order Entry/Customer Service can better manage quote and order information. Since the two are now tied together, they will see an immediate impact as forecasting has become more predictable and reliable.
- **PROJECT MANAGEMENT** - Projects can be prioritized and accelerated by Engineering while key orders which will directly impact customer delivery dates will gain visibility.
- **OPERATIONAL SUPPORT** - Engineering is better able to support operational preparedness by proactively managing customer approvals and customer timelines.
- **FORECASTING** - Operations can better trust the forecast and support customer expected delivery dates by planning ahead of time, reviewing mix changes, and addressing potential issues. (For example, they can adjust staffing for bottleneck work centers, cross-train resources, proactively address space limitations, purchase equipment, and offload work.)
- **PURCHASING** - Purchasing can better support Operations by ordering long lead time materials in advance and evaluating material forecasts against purchase orders and adjusting as needed.
- **FINANCE** - Finance can utilize the sales and operations forecasts in their EBITDA and working capital models.

Appendix

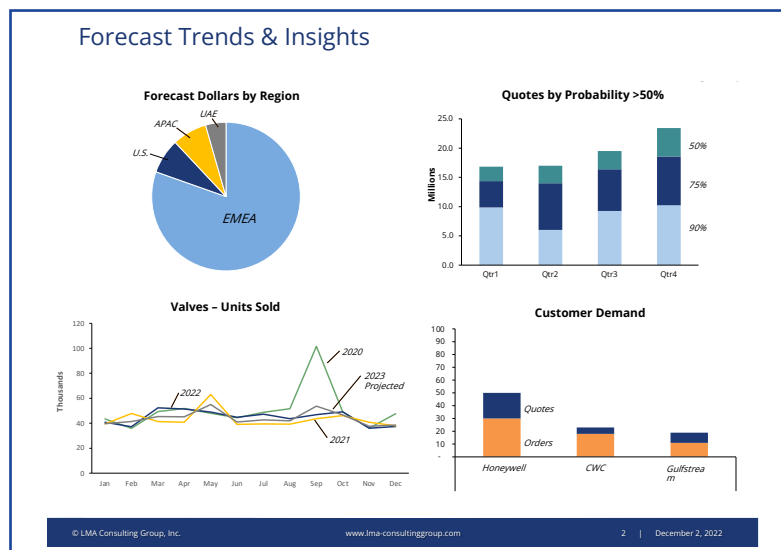
DEMAND PLANNING MEETING

The demand planning meeting is the first interactive step of the monthly SIOP routine. **SALES, MARKETING, NEW PRODUCT DEVELOPMENT, CUSTOMER SERVICE** and anyone who is in tune with the customer reviews the demand plan in comparison to the budget or latest corporate forecast.



The team also talks through key customer trends, upcoming projects, and/or noteworthy customer-related items that could impact the demand plan.

For example:

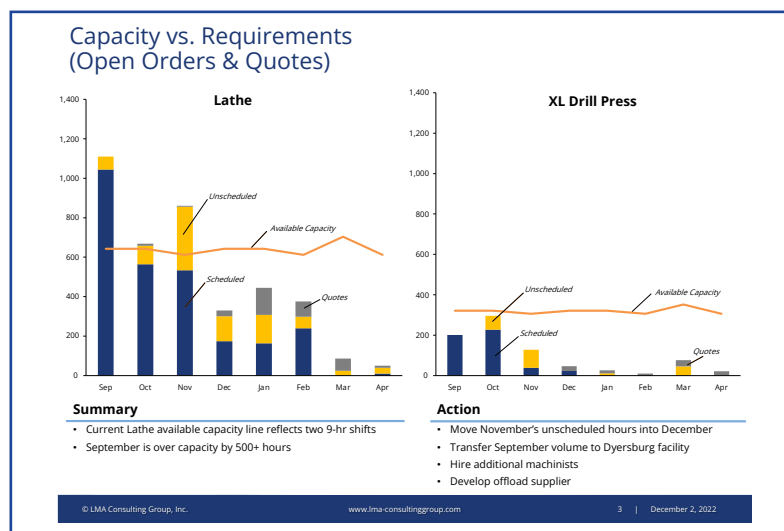


Appendix

SUPPLY PLAN REVIEW

Once the demand plan is translated into supply plans, **PLANT LEADERS, PURCHASING, ENGINEERING, PLANNING**, and core supply planning leaders get together to review supply plans and related bottlenecks (such as capacity, manpower, etc.) needed to support the plans and review trends.

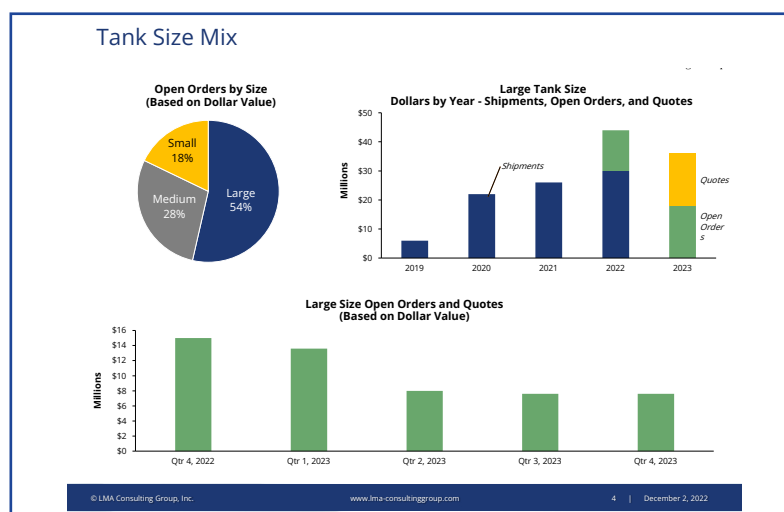
For example, the machine shop has been overloaded. As a result, the **OPERATIONS** team has offloaded production to keep lead times intact and relieve capacity to accommodate overall requirements.



EXECUTIVE SIOP MEETING

The demand and supply information culminates into the Executive SIOP meeting where highlights of both are reviewed and key issues are discussed.

For example, in a tank manufacturer, large tanks were a critical bottleneck with limited outsourcing options, so lead times were extended.





LMA Consulting specializes in manufacturing strategy and end-to-end supply chain transformation that maximizes the customer experience and enables profitable, scalable, dramatic business growth.

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