

# What Are You Doing 13 Weeks From Now?

*The 13-week Master Scheduling Review and its transition to  
Integrated Tactical Planning supporting the short-term IBP plan*



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realize the **potential**.<sup>®</sup>

# Introduction

In the first paper of this two-part series, “Master Scheduling: How to Optimize the Production Scheduling Toolbox,” Eric Deutsch and I walked the reader through the fundamental benefits of establishing the Master Schedule.<sup>1</sup> In this second paper, I will walk you through using the Master Schedule in a weekly communications meeting. Later in the paper, you’ll see this foundational meeting transform to support Integrated Tactical Planning.

While the first paper dealt with the roots of Master Scheduling, keep in mind that detailed plans are aggregated in the short term to support the executive planning process of Integrated Business Planning (IBP); let’s circle back to that in a moment.

More and more companies are adopting Integrated Business Planning (IBP) processes with the goal of planning at the aggregate level over at least a 24-month horizon.

For executive teams, the 24-month adoption period has two primary benefits. It allows time to:

1. Influence and agree upon a new direction
2. Implement cost-effective changes in the supply chain

In recent years, along with the IBP course, companies have been flooding into the Oliver Wight Master Scheduling course. It’s becoming known as the “complement” to improvements in IBP. In Master Scheduling classes, companies learn to drive stability and effective use of resources not just in higher aggregated levels but also in realms of production and delivery.

## What is Integrated Business Planning?

*Integrated Business Planning is a decision making process to align strategy, portfolio, demand, supply, and resulting financials through a focused and exception-driven monthly replanning process. The result is a single operating plan, over a 24+ month rolling horizon, to which the senior executives hold themselves and their teams accountable for achieving. Done well, it is the formal way that the business is managed and strategy is connected to execution.*

Unfortunately, some habits have not changed. Companies can still be reluctant to plan over at least 24 months in the aggregate, and they also fail to look across the SKU-level planning time fence. Process benefits are left untapped where such failures are not addressed.

This paper will assist in plugging holes in the supply-side matrix to make sure competitive advantages already in place are maximized. Let’s start with Master Scheduling.

<sup>1</sup> Deutsch, Eric and Goddard, David “Master Scheduling: How to Optimize the Production Scheduling Toolbox” [www.oliverwight-america.com/white-papers-and-articles](http://www.oliverwight-america.com/white-papers-and-articles)

## Master Scheduling & Integration

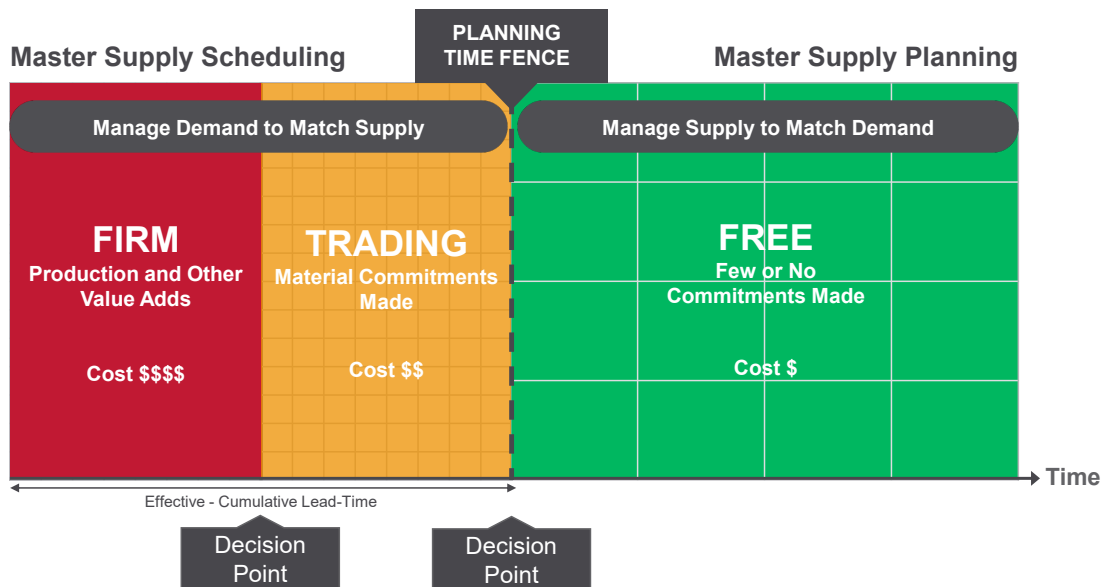
Master Scheduling, by nature, has a minimum planning time fence equal to the cumulative lead time of the products in planning.<sup>1,2</sup>

$$\text{Planning Time Fence Duration} = \text{Lead Time of All Products Planned}$$

Within this time fence, the Master Scheduler has looked at the Production Plan (already agreed upon in the IBP process). The Master Scheduler will break the plan down from the aggregate family level into exact part numbers, quantities and time periods.

The master plan is used to make sure both customer requirements and planned stocking levels are met. The plan details are all about Master Scheduling. Sharing this information, however, is all about integration.

*The Master Plan (also called the Master Production Schedule) is a statement of what products, quantities and dates a company is going to make available to meet customer demand and/or the desired inventory level. It is this plan that drives Material Requirements Planning.*



In Master Scheduling discussions, we often look at three time periods in particular:

1. A Firm Zone, where value is being added to the product
2. A Trading Zone, where material is on order and capacity reserved
3. A Free Zone, where Supply Planning has the flexibility to match the Demand Plan

<sup>2</sup> Proud, John. Master Scheduling, Wiley Publishing, 2007

## 13-Week Planning Time Fence

For planning purposes, how long will the planning period span? Remarkably, for many companies, the planning time fence repeatedly proves to be somewhere in the three month – or 13 week – horizon.

For this paper, we're looking at the process from a supply perspective. Integration in this time period is critical to establish agreement among stakeholders on key points such as:

1. What is (and what is not) going to be produced
2. Where opportunities to delight customers arise, and
3. Where, perhaps, supply is not going to materialize just as planned

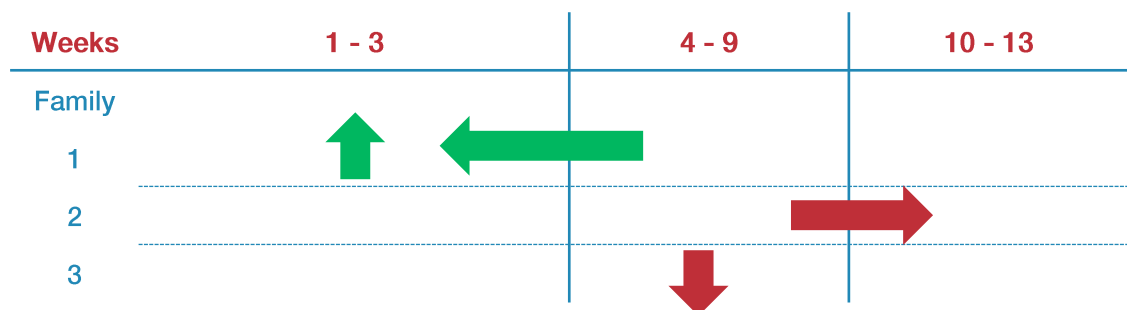
For better or worse, the company must be rock solid on production plans. The company – working as a team – will be better by knowing (and sharing) where everything stands for the next 13 weeks. Here's how that can look, specifically.

## The 13-Week Communication Process

For the 13-week communication process, we'll make a distinct note where the firm zone begins on the horizon – as changes in this time-span are often the most expensive to make. However, the entire 13 weeks is of equal value for discussion.

The discussion can – in theory – cover hundreds of part numbers spanning the horizon. Most will consider starting at the family or aggregate level and drill down to part numbers, depending on the issues at hand.

Below, we'll use an image to draw attention to changes in supply, where a:

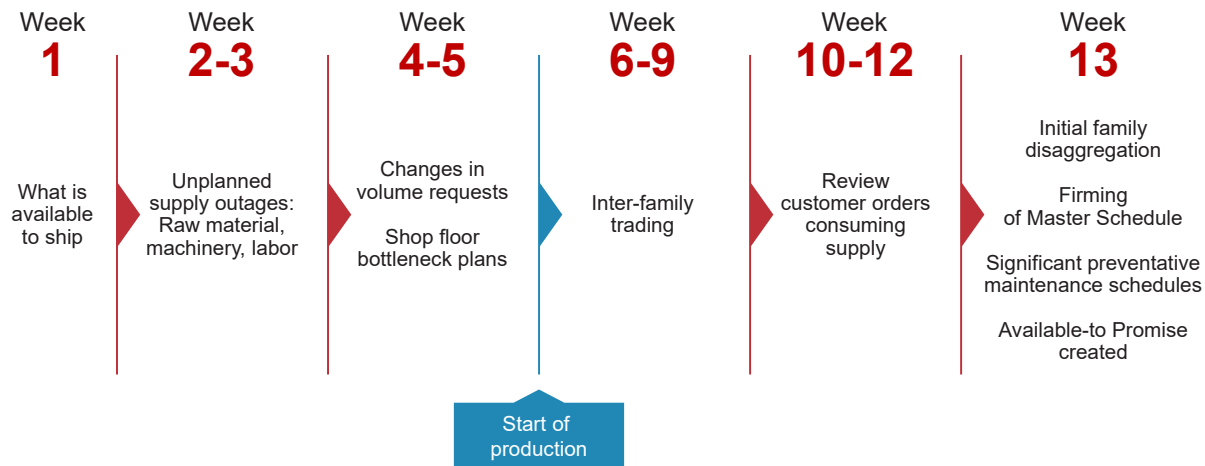


1. Green up arrow indicates increasing supply
2. Red down arrow indicates decreasing supply (below the volume of the demand plan)
3. A red arrow moving away from today or out into future weeks would indicate supply not available in the time period originally planned, and a green arrow pointing to today would mean supply is available sooner than planned.

To reduce unwanted clutter, it could be that only the red arrows are addressed in a discussion.

Note the Supply Plan has been evaluated through Resource Requirements Planning in the IBP process.

## 13-Week Communication Time Periods



For integrative strategy over the next 13 weeks, meetings will take place regularly.

### Who Attends:

- |                      |                     |
|----------------------|---------------------|
| 1. Materials Manager | 3. Shop Planner     |
| 2. Master Scheduler  | 4. Customer Service |

### Key Performance Indicators Reviewed:

- |  |                              |
|--|------------------------------|
| 1. Anticipated customer service <sup>3</sup> | 3. Manufacturing performance |
| 2. Master Scheduling performance             | 4. Supplier performance      |

<sup>3</sup> The customer service metric is also known as on-time in-full (OTIF) delivery. It is typically measured at the end of the month. As companies mature in their demand and supply execution, this KPI is also used to project customer service based on decisions made in the 13-week review. When the metric is used in this manner, it is labeled *anticipated* customer service or *anticipated* on-time in-full delivery.

What are the discussions that take place in this meeting? Well, it depends on the week. Below is a table where we've framed the meeting for reference.

The time frames below are not meant to be prescriptive – but they serve as good examples.

### **Week 13**

This is a busy week for Master Schedulers as they break monthly bucketed supply numbers into weeks and specific part numbers and quantities.<sup>4</sup> Discussions in this period tend to be around firming up the Master Schedule and the specific quantities. Further known supply challenges like machine downtime and preventative maintenance would be taken into account. Firm orders will be the foundation of the Enterprise Resource Planning (ERP) system's Available-to-Promise (ATP) functionality that will be used to make promises to customers over the coming weeks.

In this time period, decisions could be made at the following meeting.

### **Weeks 10-12**

Discussions begin to focus on customer orders that are now consuming both forecast and planned supply.

In this time period, decisions could be made at the following meeting.

### **Weeks 6-9**

The discussions have moved from nice-to-know (e.g., customers are placing orders) to meeting the needs of specific customer orders that are different from expected. As mentioned, this is the Trading Zone, where the supply chain team works to find balance: compensating for extra demand in some products and then nothing firming up for demand in others. Here the supply team shows off its skills both in trading capacity and in the knowledge of materials, both inside and outside of product families.

In this time period, decisions could be made at the following meeting.

### **Weeks 4-5**

In this period, companies typically have started manufacturing activities. Change is more difficult in this time. Typically, the trading activities are mostly worked out and now the discussion focuses on volume changes. Analysis includes answering questions such as: Can the supply chain flex up or down? How much change can be handled given the supply plan? Can overtime be worked? Can safety stock be utilized if needed?

This is the first time period where decisions should be made in the meeting in order to start manufacture with full lead time.

<sup>4</sup> Disaggregating the demand plan happens in multiple ways. Planning Bills in some industries, detailed part number forecasts etc., all support the disaggregation process

## Weeks 2-3

This is the time period where things hit the fan, as it were, and production gets real: machines break down; tools malfunction or are not out of metrology on time for production; part shortages are “discovered” on the shop floor; a valued customer places emergency orders. If there’s an urgency that is going to cause the supply team to do backflips – it’s in this period.

Decisions in this time period (and earlier on the horizon) are unlikely to be able to wait for the next meeting and, thus, must be made during this meeting. (Note that successful discussions require responsible people to make decisions at the meeting. On rare occasions, additional information will be needed to make a decision and may temporarily create the need for additional individuals to attend the meeting.)

## Week 1

For some companies, the discussion in week 1 is, “What are we going to ship?” For others, “What can we ship?” And for still others, “What customers are we going to ship to?” The supply team is expected to have a plan for these questions, and they need to make their intentions clear so the entire company is aware of the plan. Tip: keep reiterating the big picture.

Decisions must be made in the meeting for this time period.

## What's the Payoff?

The benefits of this 13-week approach are numerous. The value of supply execution being aligned with the fulfillment plan cannot be understated.

Companies that have executed a basic plan as described above consistently report the following types of benefits:

- Companies with a make-to-stock strategy now more reliably make promises for back order fill dates. Companies with assemble- and make-to-order strategies confidently make promises regarding when desired options will be available to fulfill customers’ unique configurations. Companies also have the ability to make dynamic lead-time promising based on the planned rate of backlog consumption. This promising method results in increased promising accuracy compared to simple “standard” lead-time quotes.
- Sales teams are free to sell the planned supply, which in turn stabilizes the amount of changes to the supply plan.
- Demand plans become more accurate. Surprising to some, but true: If supply plans are based on meeting the demand plan at three months in the future, then the ATP is a result of these supply plans. Soon enough, with sales people armed with this better visibility, they actively steer incoming demand to the anticipated dates as planned by the supply organization.
- Fundamentals of Master Scheduling provides visibility to supply teams, which adds capacity in each case. As much 50% additional capacity shows up at companies where set-up time, change-over and clean-out can be optimally planned versus a more reactionary environment where systems must pivot to please to the voice that shouts the loudest.
- Stable supply plans enable shop floor support teams to organize for success. From metrology, all the way to maintenance teams, the ability to plan ahead minimizes disruptions to production. Here, we typically see an improvement in overall product quality also, which itself results in leaner departments post-delivery.

## Transition to Integrated Tactical Planning

On one hand, the 13-week review enables all stakeholders to be clear on shorter-term supply chain plans. Here, Master Schedulers, Shop and Material Planners, Supplier Schedulers and Procurement operate together as one heroic team – it's exciting to see these teams working in tandem to get the job done. Sure, there will always be surprises: unplanned customer swings in demand, unforeseen shop maintenance, defective incoming parts and materials, and filling gaps where demand did not materialize as planned while maintaining utilization and absorption. Still, we see teams working together to deliver quality product time and time again using the systems outlined above.

On the other hand, teams that are less cohesive and less proactive take a supply chain perspective like Eeyore, "Oh, woe is me," bemoaning reality with an attitude of, "I could do my job if things would just go as planned." A mindset that every supply issue is caused by the lack of planning or execution by another department does little or nothing to improve supply performance.

Notably, a number of additional developments beyond the supply chain have emerged to advance the benefits of our 13-week process. Specifically, Demand Control and Demand Execution brings proactive processes to bear – processes that increase the likelihood that the demand plan will happen as planned versus, well just happening.

### What is Integrated Tactical Planning?

*Integrated Tactical Planning is a near-term process for optimizing and synchronizing changes in the product portfolio, demand and supply plans, and associated financial implications. The ITP time frame is within the planning time fence as opposed to Integrated Business Planning (IBP) which focuses on the planning periods beyond the planning time fence. This creates a seamless interaction of the key core processes – product portfolio, demand, supply and the resultant financials - between near-term ITP and longer-term IBP. Whereas the monthly Integrated Business Planning process manages resources and supply capability to meet the product portfolio and demand plans longer term, the key concept of the Integrated Tactical Planning process is managing product portfolio and demand to meet the typically less flexible supply resources and capabilities inside the planning time fence.*



There's more, and it's called Integrated Tactical Planning (ITP). We're seeing excellence in Portfolio Project Management, advances in Life Cycle Management, and significant improvements in the product launch – these advances must be incorporated in our ITP discussions. We're also seeing Design, Industrial and Mechanical Engineering functions integrated, as well as seamless adoption into production plans.

Such developments in Demand and Product Management contribute significantly to the 13-week process to the point where a supply sided conversation pales in comparison to the results achieved when these other functions are integrated into the ITP process.

When these groups come together, it's time to invite Finance to the conversation, to drive short term financial accuracy.

With the additional players contributing to the discussion, our meeting may expand in duration, which is why we mention that companies need to focus on exceptions. I mentioned the use of arrows to indicate the change in the plan for a particular time period. In my previous statement, it was suggested that maybe an increase in supply in a particular period might have a green arrow – to indicate a good thing; we need to look at this assumption again in ITP.

With more than just the supply function involved in the conversation, we need to be careful. Any well-intentioned increase in demand – or, say, a volume increase for a product launch – may be good for business but disastrous for the supply chain. You could argue for just sticking to red arrows. Red up is coming from Demand or Product, Red down is coming from Supply, and so on. However, as ITP matures, conversations will not just include the red arrows. Here is a simple example depicted in the chart on page 4:

The supply team notes a green arrow up, indicating that there is more supply available than the volume in the demand plan. In the early stages of maturity, this situation might be a non-issue. Once the process matures, customer service and sales teams will want to get involved to direct extra product that should be built using the available capacity. The recommendation to build additional product may need insight from the Finance team.

For example, discussions with financial implication could address the cost of creating additional inventory versus using the machine downtime to perform maintenance.

Note: As indicated in the previous paragraph, ITP matures from simple volume balancing and good information sharing to incorporating inputs from logistics, performance excellence, and financial organizations. When initially launching the process, however, it may be overwhelming to incorporate these additional functional inputs.



Below is a mock-up of the same time buckets and how the conversation would change with Integrated Tactical Planning. In **Blue** are Portfolio and in **Red** Demand contributions to the 13-week process.

### **Week 13**

Portfolio team adds color to the conversation by ensuring designs are ready or close to completion for production, tools, training, etc. in process for first supply runs. Materials are on order, and capacity for new products are reserved.

The Demand team is tweaking assumptions in the planning Bill of Material include customer insights to enhance supply planning.

### **Weeks 10-12**

Business cases are updated for new products, incorporating competitor, customer, and market information that could potentially change product timing and volumes.

Demand team preparing to utilize demand influencing activities to shape incoming customer orders.

### **Weeks 6-9**

Customer acceptance testing dates met for product launch in just over a month.

Demand team collaborates on trading decisions and demand control activities include considering whether to constrain demand that is in excess of the plan.

### **Weeks 4-5**

Portfolio team works with Supply as capacity for prototype and new product launch compete with customer orders.

The demand team communicates what it can do to ensure execution of the demand plan.

### **Weeks 2-3**

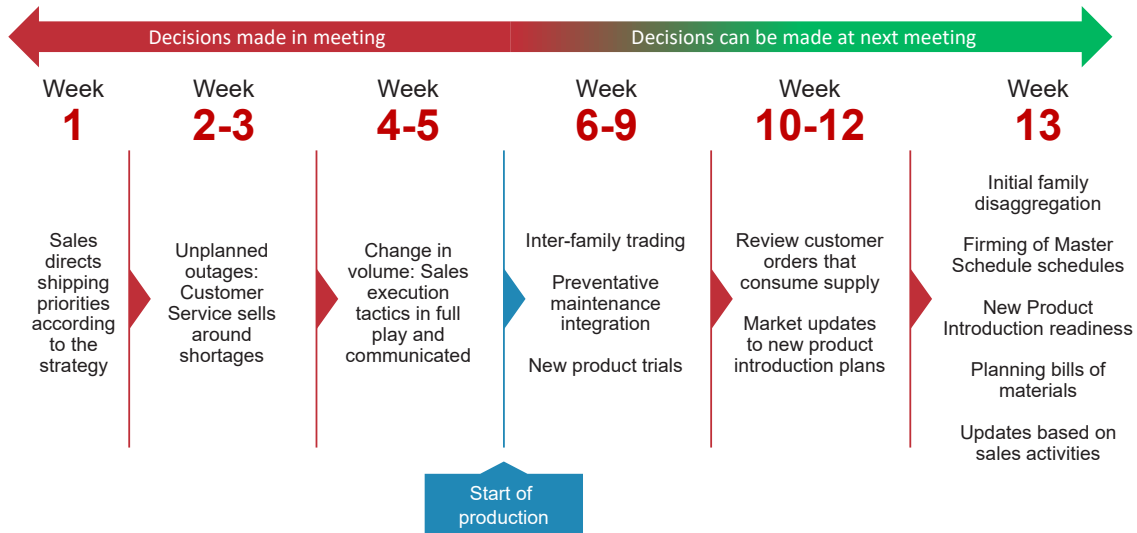
Hard decisions on preventative maintenance and product development are made by the ITP team.

Customer service supports the supply plan by selling around shortages and utilizing safety stock.

### **Week 1**

Shipments occur per customer order, except when supply is constrained. In that case, Customer Service seeks to prioritize customer orders. If prioritization issues cannot be resolved, Sales management makes the final decision on order fulfillment priorities.

## Supply Side ITP Communication Time Periods



Of course, it becomes obvious that I earlier mentioned the involvement of the Finance team, but have not yet addressed their role. As time progresses to week 1, the Finance team uses updates from the Demand, Product, and Supply teams to update financial projections and identify potential issues. For example, the original business case for a new product may have shown excellent margin. But as the product nears launch, the actual production costs, pricing decisions, and demand for the new product may be different than the business case.

A further example: When planning in the aggregate over a long horizon, financial projections based on demand plans are typically based on average sales prices for a family. As time marches on to the present, financial projections are based on specifics – including costs and individual customer pricing agreements. Assumptions about utilization and absorption now can be updated based on more refined details.

With this more detailed, cross-functional information, Finance is able to more accurately predict month-end and quarter-end results that become part of the high-level, strategic discussions as part of the Integrated Business Planning process. The end result: More credible and trusted financial plans.



## Meetings Participants Increase, But With Good Reason

### Attendees:

- 
- |                      |   |
|----------------------|---|
| 1. Materials Manager | 6. Plant Controllers                          |
| 2. Master Scheduler  | 7. Corporate Financial Planning & Analysis    |
| 3. Shop Planner      | 8. Project Management Leads                   |
| 4. Customer Service  | 9. Engineering Total Preventative Maintenance |
| 5. Sales             |   |

### Key Performance Indicators

- 
- |  |   |
|--|---|
| 1. Anticipated sales                     | 5. Milestone adherence                                      |
| 2. Projected Master Schedule performance | 6. New product launch performance                           |
| 3. Abnormal demand                       | 7. Financial plan to budget and gaps to the latest estimate |
| 4. Projected forecast accuracy           |   |

### Benefits of ITP

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Take all the 13-week benefits shown on page 7 – and add the following:

- Additional stability of Sales input to forecast consumption as a result of sharing insights as to whether the unconsumed forecast still might ship
- Salespeople work to shape demand back to alignment with the supply plan, reducing expediting costs that ripple through the supply chain
- Product teams improve execution when they know time on manufacturing lines are reserved, and more diligently communicate when timing is going to change
- On-time product launches always improve, and at a minimum, supply-side variables that can impact launch success are minimized, if not eliminated
- Greater certainty in executing the first three months of the IBP plans

# Conclusion

Perhaps the most powerful benefit of the Integrated Tactical Planning process for the supply organization is: When ITP is effective, Supply executives have confidence that short-term supply plans will be executed with less intervention on their part. Credible short-term plans free up executives to focus on the longer-term and successful deployment of the company strategy. Supply executives have the time and opportunity to make meaningful strategic decisions that drive business performance, rather than always seeming to be limited to actions that address the next three months.

Whether the 13-week planning just focuses on the Supply side or involves other functions with Integrated Tactical Planning, the goal is the same: Put the short-term plan on solid ground. In this paper, I've presented the two extremes – supply chain integration to true business integration – to show the range of potential. I encourage companies to start simple and progress according to their competitive needs.

This week a client asked me if there was any point to just supply-side integration. My response was, "Of course! At a minimum, we need to show Sales what we are planning on producing, just to give them something to complain about!"

Have some fun pulling this process together. The benefits outweigh the amount of work required; you'll end up working in a better company. Feel free to reach out to us with questions or feedback on this paper.

Wishing all our readers many continued successes.

## Author



**David Goddard**  
**Oliver Wight**  
**Principal**

# About Oliver Wight

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## **Oliver Wight Americas**

P.O. Box 368, 292 Main Street  
New London, NH 03257, US

T: +(800) 258-3862

E: [info@oliverwight-americas.com](mailto:info@oliverwight-americas.com)

<https://www.oliverwight-americas.com/>

## **Oliver Wight Asia/Pacific**

118/3 Male Street, Brighton  
Victoria 3186, Australia

## **Oliver Wight EAME LLP**

The Willows, The Steadings Business Centre  
Maisemore, Gloucester, GL2 8EY

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