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Integrated Business Planning (IBP) – A business process used to create the Integrated Business Plan, which is a longer-term consensus plan that integrates marketing/sales, supply chain/operations, and financial plans, implements strategies, balances supply and demand, and creates financial plans. IBP is also known as Sales & Operations Planning (S&OP) and Sales, Inventory & Operations Planning (SiOP).

Overview – IBP is an important process in all types of firms, but is particularly critical in manufacturing firms. IBP is said to be "top management's handle on the business" and enables senior leaders to have better visibility on future sales, costs, and profits. IBP is about making longer-term planning decisions in product planning (e.g., phase-in and phase-out decisions), marketing/sales (e.g., pricing, advertising, managing customer expectations), production/operations (e.g., machine capacity, labor capacity, production schedules), sourcing (e.g., long leadtime buys, supplier capacities), and finance (e.g., managing investor communications).

Benefits – The benefits claimed for a good IBP process include:

- Better *product life cycle planning*, which leads to better product phase-in and phase-out, less obsolete inventory, and better product introductions.
- Better and more accountable forecasting, which leads to improved customer service and reduced inventories.
- Better alignment of the sales and operations, which leads to better balance between supply and demand, increased customer service, increased sales and profit, and reduction in inventory.
- Better financial analysis in all decisions, which leads to better financial results.
- Better alignment between sales, operations, and finance, which leads to better investor communications and better financial accountability.
- Better *risk management*, which leads to fewer business surprises and catastrophic events.

Production planning, S&OP, and Integrated Business Planning (IBP) – In the 1980s, *production planning* (aka aggregate production planning) created longer-term plans for production, labor capacity, and inventory. In the 1990s, S&OP (or SI&OP) replaced production planning with a broader approach that included reconciliation with marketing and financial plans. More recently, IBP has replaced S&OP with a still broader and more strategic approach. S&OP and IBP are presented and compared below.

The Sales & Operations Planning (S&OP) process – The steps in a typical S&OP process are as follows:

- *Demand forecasting:* This begins with statistical forecasts at either a product or product family level. These forecasts are then modified with market intelligence from sales management, usually for each region. Ideally, these forecasts are expressed with a forecast interval (e.g., 100 ± 10 units), include commentary, clearly state all assumptions, and identify all major risks. Care should be taken to avoid *tampering* with forecasts.
- *Demand planning:* Each strategic business unit (SBU) management team works with the product management and demand management organizations to convert the demand forecasts into an unconstrained demand plan that factors in industry trends, pricing, and promotions. The demand plan is expressed in both units and dollars.
- *Supply planning:* Operations and logistics create a constrained supply plan based on the demand plan, demand backlog, available capacity, and inventory. This plan should be more concerned about volume (product families) than mix (products). Ideally, capacity planning is done in aggregate units (for both load and capacity) and takes advantage of a *bill of resources* that focuses on just the key constraint (or constraints). The result of this process is a supply plan (not a forecast), inventory plan, distribution plan, and a capital plan for expansion.
- *Financial planning:* Finance reviews the demand and supply plans to ensure that they meet the firm's financial objectives (revenues, margins, profits) and creates a financial plan in dollars.
- *Pre-S&OP meetings:* The demand management organization collaborates with the other organizations to create a Sales & Operations Plan that is a consensus plan from the SBUs, sales, operations, and finance organizations.
- *Executive S&OP meeting:* The executive team meets to finalize the S&OP plan. At every step in the process, assumptions and issues are identified, prioritized, and passed along to the next step.

The Integrated Business Planning (IBP) process – The steps in a typical IBP process are as follows:

- *Product management review*: This step answers questions such as, "What changes should we anticipate to our product portfolio?", "What products will be introduced, discontinued, or changed?", and "What are our new marketing-led promotion and pricing initiatives?" Note that product management review is not a formal step in S&OP, but is an important part of IBP.
- *Demand review*: This is the same as the S&OP demand forecasting and planning process. However, the demand plan should consider product phase-in/phase-out plans, marketing campaigns, and pricing strategies.

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- *Supply review*: This is similar to the S&OP supply review. The only difference here are that IBP takes a longer-term and more strategic view.
- *Integrated reconciliation*: Sales, operations, and finance identify unresolved issues and identify and evaluate risks. This results in an agenda and set of recommendations for the management business review meeting.
- *Management business review:* This meeting should consider businesses, geographies, and product families rather than specific products or SKUs. The review should be limited to high dollar issues and should focus on identifying and mitigating risks. This meeting should not be for discussing tactical details (e.g., expediting) or setting unrealistic (aspirational) sales goals. The end result should be a set of prioritized initiatives regarding unresolved issues and a consensus plan that can be used to hold everyone accountable.

A comparison of S&OP and IBP – S&OP and IBP are similar and many firms and consultancies use the terms interchangeably. The main differences between IBP and S&OP are that (1) IBP takes a longer-term and more strategic view of the business, (2) IBP considers product life cycle planning and marketing/campaign planning more explicitly, and (3) IBP emphasizes risk mitigation and surfacing assumptions more explicitly.

Demand management organization – The demand management organization is charged with the responsibility of coordinating the IBP process. Most larger firms have the demand management organization report to either supply chain/operations (e.g., Boston Scientific), finance (e.g., Toro), or sales (e.g., Dell). In this author's experience, the majority of manufacturing firms have demand management report to the supply chain/operations function. It is critical that the demand management organization be able to work collaboratively with sales/marketing/product development, supply chain/operations, and finance.

Best practices – IBP will be more likely to succeed if an organization follows these best practices:

- Plan far enough ahead to support capacity planning and long leadtime sourcing decisions. Oliver Wight, an IBP consultancy, recommends a 24-month rolling. Most firms update the plan monthly.
- Plan product phase-in and phase-out dates for making, marketing, selling, and supporting products.
- Plan volume then mix. Volume is expressed in aggregate units (e.g., generic units) for a product family and mix is units by model/item/SKU.
- Do not confuse a demand forecast and a production plan. A demand forecast is a statistical statement about future unconstrained demand and a production plan is how the firm will respond to that forecast.
- The demand forecast should be unconstrained by supply, unbiased (has an average error of zero), and not aspirational. The sales organization may set aspirational goals, but demand forecast should not be aspirational.
- The final integrated plan should be constrained by the supply plan and should be a single consensus plan.
- The final plan should also include high-level inventory plans.
- Each function works off the single IBP plan to do the right thing for the firm. This might mean that sales sets goals for exceeding the demand forecast and that production sets safety stock levels for long leadtime components to manage the risk that demand is greater than the demand forecast.
- A good rule of thumb is to limit complexity by limiting the number of families/models to about 60.
- The final plans should include financial plans in dollars (revenues, costs, profits, and margins).
- The Executive IBP meeting should focus on more strategic decisions and not get "hijacked" by tactical issues (e.g., expediting or crisis management). Tactical issues should be handled outside of the IBP process.
- Each organization (sales, operations, and finance) is held accountable for a small set of balanced metrics. See the *balanced scorecard* entry for more details.
- IBP should bring clarity and focus to the organization. The IBP process, therefore, should have a few strategic, business-level, balanced metrics (e.g., profitability, customer satisfaction, manufacturing throughput time) shared across the organization so "everyone is paddling in the same direction."

IBP enablers – IBP will be more successful if a firm can: (1) *Leverage lean thinking* – Use *lean* to reduce manufacturing cycle time, procurement cycle time, and setup times, which in turn improves forecast error, reduces the need to forecast, lowers inventory, lowers safety stock, and enables early detection of defects; (2) *Pursue commonality* – Use *common parts*, assemblies, components, and materials to reduce complexity, design, setups, planning, cycle inventory, and safety stock inventory; (3) *Move the push-pull boundary back in the process* – With this strategy, the firm can manage complexity by building to order (instead of stock), which allows the firm to improve customer service and reduce inventory; and (4) *Leverage IT appropriately* – IBP is not an IT system, but IT can be an important enabler providing a "single source of truth" for sharing critical IBP planning information (e.g., forecasts, production plans, inventory levels, and financial plans) and supporting financial scenario planning.

See *aggregate inventory management*, *alignment*, *bill of resources*, *Capacity Requirements Planning (CRP)*, *chase strategy*, *demand management*, *forecasting*, *level strategy*, *Master Production Schedule (MPS)*, *Materials Requirements Planning (MRP)*, *product family*, *product life cycle management*, *production planning*, *risk management*, *Rough Cut Capacity Planning (RCCP)*, *time fence*.

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