

EXECUTIVE SUMMARY OF THE THESIS

The transition from Sales and Operations Plan to Integrated Business Plan: a Systematic Literature Review

TESI MAGISTRALE IN MANAGEMENT ENGINEERING – INGEGNERIA GESTIONALE

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1. Introduction

Sales and Operations Planning (S&OP) emerged in the '80s as a tactical solution to enhance the internal coordination between revenue and cost-oriented departments. The potentialities of this cross-functional integration have caught the attention of many companies, which realized the necessity to reshape it into a more strategic and complete process, re-named Integrated Business Planning (IBP). This trend stimulated the interest of practitioners (Grey Literature) but it has not been deeply investigated in the scientific domain (White Literature). Therefore, this Systematic Literature Review (SLR) aims at closing this literature gap, showing the differences between S&OP and IBP and how to accomplish the respective transition.

2. Methodologies

The rising interest by practitioners in the potential evolution of S&OP along with a lack of a clear definition of IBP in academic literature triggers the necessity to run an SLR. Moreover, none of the existing literature reviews on S&OP investigates the evolution into IBP, thus arising the necessity to answer the following Research Questions:

- RQ 1: What differentiating factors characterize S&OP when compared to IBP?
- RQ 2: How can organizations evolve from S&OP to IBP?

The Location of Papers has been focused both on white (academic) and grey (practitioners') literature to have a more complete overview of the studies run on the topic.

The former has been performed on Scopus using the following string of keywords:

(TITLE-ABS-KEY (("sales and operations" OR "S&OP" OR "sales & operations" OR "sales and operations plan" OR "S&OP plan*" OR "sales & operations plan*" OR "integrated business plan*") AND ("IBP" OR "integrated business plan*" OR "CPFR" OR "collaborative planning forecasting replenishment" OR "technolog*" OR "financ*" OR "profit" OR "revenue" OR "optimiz*" OR "evolut*" OR "holistic" OR "trend" OR "supply plan*" OR "demand plan*" OR "executive meeting")))*

The vast domain of Grey Literature has been tackled by following the guidelines of (Adams et al., 2017), selecting only the grey literature sources with the highest values in source credibility using the string "Integrated Business Planning".

The Paper Selection resulted in 48 scientific papers and 49 materials from practitioners, that were selected through skimming processes run through

the reading of the titles, abstracts (only for the white literature), and content of the papers. As expected, Figure 1 shows that academic articles are not enough to run a study on this topic, given the poor sample size (4) that contains the word “Integrated Business Planning”. However, they are still relevant to compare their results with the pragmatic perspective of practitioners. On the other hand, the grey literature seems to be polarized toward the viewpoint of Oliver Wight, an American consulting company that claims to have coined the IBP term and published 27 papers over the years.

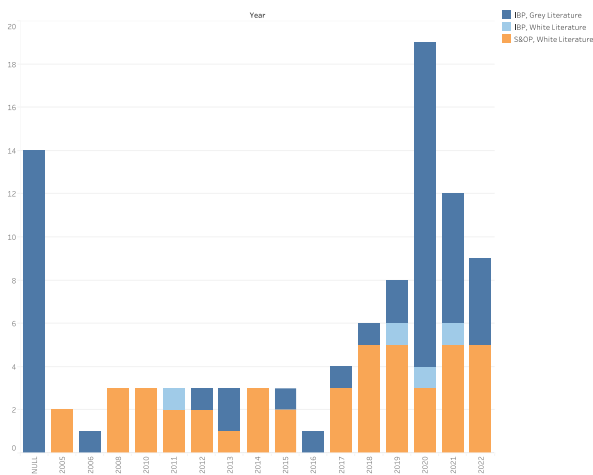


Figure 1: Publication of papers over the years

3. Sales and Operations Planning

The need for S&OP arose to conciliate the internal conflict between Sales and Marketing and Supply Chain and Operations, due to their different orientation and how the departments are evaluated, which creates notable divergences (Bagni & Marçola, 2019). Furthermore, it addresses one of the biggest supply chain management challenges: balancing supply and demand. (Grimson & Pyke, 2007).

The advent of ERP in 90’s enabled a better execution of the process (Danese et al., 2018), evolving to a monthly basis process structured in 5 steps (Grimson & Pyke, 2007), as shown in Figure 2.



Figure 2: S&OP process.

- 1) *Data Gathering*: It consists in updating and consolidating data from the previous month to support the following steps.
- 2) *Demand Planning*: Marketing & Sales collaborate to generate a consensus-based and unconstrained demand plan.
- 3) *Supply Planning*, Operations & Supply Chain develop a rough supply plan to meet the expected demand plan, leaving pending issues to the following meetings.
- 4) *Pre-Meeting*: First cross-functional meeting that aligns the two plans, aimed at identifying volume gaps and issues to be addressed in the last step of the process, along with a first financial evaluation.
- 5) *Executive Meeting*: The board management is in charge to approve the S&OP plan, by discussing pending issues, reviewing crucial KPIs and communicating it through the entire organization.

S&OP became a successful supply chain practice, moving from a sales-driven approach to a consensus and more balanced planning that increase the company's profit. (Lapide, 2005).

However, S&OP still shows some weaknesses. The goal is to close the gaps only in terms of volume, with a sole supply chain orientation (Stentoft et al., 2020). It might lack of a sufficient financial analysis and the limited authority of middle management ownership together with the short/mid planning horizon prevents raising the process to a more strategic one (Aberdeen Group, 2006).

4. Integrated Business Planning

S&OP has always been under continuous evolution since its origin, and companies started to seek a redefinition of the process to better exploit its potentialities and establish a more performing S&OP. Among the others, IBP seems to be one of the most promising ones. According to (Kepczynski et al., 2019), its realization would conciliate the short-term execution with the long-term strategy.

According to (Oliver Wight, n.d.), the IBP cycle is formed by the following 5 steps.



Figure 3: IBP process.

- 1) *Product Portfolio Management*: It consists in structuring the product portfolio, involving all the functions that analyze product margins and their life cycles.
- 2) *Demand Review*: Sales, Marketing and Finance develop the demand plan based on the input of the first step.
- 3) *Supply Review*: Supply Chain, Operations and Finance collaborate to develop a supply plan aimed at matching the consensus demand plan.
- 4) *Integrated Reconciliation Review*: It consists in aligning the first three steps, addressing the arisen gaps and understanding the impact on the whole business.
- 5) *Management Business Review*: The executive or C-level management is in charge to approve the plan, monitoring KPIs, solving pending issues and evaluating vulnerabilities or opportunities.

5. How to differentiate S&OP and IBP

The previous chapters provide a comprehensive overview of the two processes without emphasizing their distinguishing characteristics.

A complex business process should be sustained by adequate technologies (L. Lapide, 2005) and the manual extraction of data from ERP became a bottleneck condition. This raised the necessity to mature along the IT dimension, aiming at skipping the first step "Data Gathering". The step ahead from S&OP to IBP is recognizing that the real value is in not only bypassing this first step, but to expanding the boundaries to the whole organization through an appropriate IT system. In this way, the whole information flow converges into a unique view that supports the execution of the process by adopting ad hoc software (Van Hove, 2021). Looking at the maturity models of (Danese et al., 2018; Grimson & Pyke, 2007), it seems that the IBP is a formalization of the highest stages of S&OP maturity, with most of the implementations already in practice. With this perspective, it is suggested that IBP was just rebranded from consulting companies to propose to sell something new (Bower, 2012). This view enters in contrast with the interpretation of Oliver

Wight, stating that there are 5 different touchpoints, as follows.

The **goal and objectives** seem to be different. On one hand, S&OP contributes to building a bridge between strategy and operations, following a top-down approach with a strict tactical orientation (Thomé et al., 2012). On the other hand, IBP plays the role of planner and executor of the long-term strategy thanks to the formal ownership of the Executive management (Oliver Wight, 2017).

The involvement of **Finance** has been identified as a key aspect of the transition from S&OP to IBP. The theoretical framework of (Seeling et al., 2022) clarifies that it supports the approval of the plan thanks to a deeper financial evaluation. However, its presence occurs only in the highest stage of maturity, in contrast with the IBP side that requires it (Reed M, 2020a).

When examining the structure of the two processes, the primary distinguish factor is the **Product Portfolio Management** step. S&OP does not explicitly incorporate this aspect, except for few cases that introduce the activity after the advancement in IT systems or recognize the importance of integrating R&D to effectively manage the NPI (New Product Introduction) in the plan. IBP, instead, concretizes the practice by introducing a formal step at the core of the process (Jurecka, 2013).

The different outcome of the two processes lies behind the **Scenario Planning**. On the S&OP side, the goal is satisfied when the volume gaps are closed. Therefore, testing the validity or robustness of the plan goes beyond its primary tactical focus, and it might occur only in case of high level of S&OP maturity. On the IBP side, this practice is formalized to establish a responsive approach capable of facing different scenarios and possible disruptions (Lindsey et al., n.d.).

The **Stakeholder's Integration** reflects the different focus on the S&OP and IBP processes. The S&OP is originally inward-oriented, relying on internal processes and information. However, expanding the S&OP boundaries is recognized as a potential improvement thanks to the internalization of information (Kreuter et al., 2021). On the other hand, IBP should ensure an outward focus, but only once an efficient internal collaboration is achieved (Aberdeen Group, 2006).

It is notable that the more an S&OP is advanced in its evolution journey, the more the differences with IBP tend to fade away, and the rebranded term better reflects the desired principles. Therefore, the interpretation of a clear divergence is more precise when looking at a traditional S&OP, whose results are summarized in Figure 4.

Area	S&OP	IBP
Business Objective	Volume oriented Demand & Supply Balancing	Value oriented Demand & Supply Balancing
Focus	Inward Focus	Outward and collaborative focus
Ownership	No ownership / Supply Chain Manager	Executive Management
Technology	Rudimental/Medium IT systems	Advanced use of IT systems
Outcome	One single plan	Scenario Planning and gap Analysis
Planning Horizon	Short/Mid term (from 3 to 18 months)	Long term (from 24 months)
Frequency	Monthly	Monthly along with event-driven meetings

Figure 4: Differences Between S&OP and IBP

6. Transition from S&OP to IBP

This chapter will give an analysis of the factors to consider when businesses are eager to move from the conventional stage of S&OP toward the successor IBP.

Since IBP is mostly a managerial and complex process, top managers should start the initiative by leveraging on a strong sense of leadership to communicate the **Need for Change** to the entire organization (Reed M, 2020).

Then, a **Design Team**, with the right level of seniority, will be in charge to structure each step and meeting in order to make sure that all the functions are well-integrated. The IBP design should be linked to the company's product portfolio strategy (Cost Leadership, Product Differentiation or Focus on Customer Relations), defining which departments should lead the process. Furthermore, (Kepczynski et al., 2019) recommends creating a Centre of Expertise (CoE) that oversees the process by making sure that the outcome is coherent with the company strategy.

The Design Team should also establish an **Effective Decision-Making** by treating differently short and long-term decisions to avoid the "Detail

Dysfunction" trap (Hirschey & Spira, n.d.). The former should be considered at the highest level of detail, such as SKU. This should be supported by the exploitations of solutions that automatize the operations decision. Long-term decisions should be, instead, aggregated to avoid overwhelming top managers (Maritz, 2020). Therefore, ad hoc software should be adopted to enable an effective data visualization to discover useful insights and drive the future of the business (Willms & Brandenburg, 2019).

Organizations can then concentrate on the **key features** that stand out as significant practices to enhance the process to IBP, **working at their best capabilities**. In particular, **Finance** should not act as a guardian of the budget, but as a business partner to support each function. Moreover, the application of EVA would broaden the financial assessment of the plan, evaluating also the WACC and C2C cycle (Hahn & Kuhn, 2011). A suggested practice in the **Product Portfolio Management** is the ABC analysis to better balance the effort in the planning phase (Hozack, 2020). The NPI should be handled by introducing a parallel process to discuss the specific concern and to lately include it in the traditional process (Goh & Eldridge, 2015). The value-added activity of **Scenario Planning** in the last two meetings should be split into two branches. The first supports the decision-making, triggering decisional variables or internal factors, while the second predicts possible events or disruptions, to test the robustness of the plan. (Reiher, n.d.) Once the internal coordination is established, companies can evaluate the possibility to **Integrate Key External Stakeholders** through the CPFPR practice, which would implicate a long-term commitment that benefits from the structured exchange of information (Ireland & Crum, 2020).

At this point, the establishment of a well-designed and **holistic KPIs scorecard** would increase the awareness of all the functions involved on the impact of their internal decisions on the performances of the whole process. Monitoring KPIs is important to align the outcome of the plan with the company's objectives (Oliver Wight, 2020).

7. Discussions and Conclusions

The concept of IBP seems to be mostly polarized toward the idea of being a holy grail that innovates

the future of the business because of an underdeveloped perception of its predecessor, in contrast with the detractors' view, as shown in Figure 5. The purpose of this work was to find a balance between the two opinions.



Figure 5: Count of papers that consider IBP an innovation or not

S&OP promotes horizontal collaboration between Sales & Marketing and Supply Chain & Operations. IBP takes for granted this principle, enlarging the scope to other departments that contribute with useful insights and analysis, such as Finance or R&D. This enables the capability to perform Product Portfolio Management at the core of the process, bypassing "Data Gathering" thanks to the advanced in the IT dimension.

The greatest point of difference regards the vertical integration, intended as the involvement of Executive Management, which is required and formalized in the last two meetings: Reconciliation and Management Review. It enhances the goals of the process, by discussing important business matters and by ensuring that the long-term strategy is linked with the short-term execution (top-down approach), triggered by the outcome of the process step (bottom-up approach). The added value is achieved by activities such as Gap Analysis, to compare expected results with targets, and Scenario Planning, to validate the robustness of the plan and anticipate potential future events.

It can be stated that IBP is a formalization of the last stages of S&OP maturity, but the literature lacks in determining a guideline that helps how to distinguish them. To address this gap and answer to the RQ1, a theoretical framework is proposed with a list of the essential requirements that a mature S&OP should own to qualify itself as IBP, shown in Figure 6.



Figure 6: Minimum Requirements for IBP

The answer to the RQ2 is given through the proposition of a high-level overview of how

companies could transition from one process to the other.



Figure 7: Transition steps to establish IBP

The outcome of what was explained in Chapter 6 is summarized and ordered by the framework proposed in Figure 7. As for any other process of change, the findings of this thesis suggest to first focusing on bringing people on board, as a first and fundamental milestone to favor the success of the implementation of the process. A high-level design phase should follow, with the aim of structuring the process by fitting it with the long-term strategies of the organization. A more in-depth design of each meeting's inputs, outputs and key participants should follow, during which companies should make sure the right technologies are employed to enable effective decision-making. Finally, in order to enable the correct performing of the IBP process, companies should employ the key points highlighted by the discussion on the RQ1, by at the same time putting in place a control mechanism aimed at keeping track of the correctness of the IBP implementation through a complete KPIs scorecard.

This work contributes in being the first SLR that attempts to shed light on the key differences between S&OP and IBP and proposes the steps to complete the transformation. Companies should then increase their awareness in adopting S&OP since it might become a successful business tool. On the other hand, these findings should sensitize consulting companies that claim to sell IBP without well-differentiating it from its predecessor.

The work is not without limitations, since it relies only on the selected article and the emerging IBP trend suggests that most of the work-in-progress publications were not included in the research. Then, this work lacks empirical evidence since the findings were not tested or validated because of a long-lasting transition phenomenon.

This thesis will be a starting point for further studies about the topic of IBP. An interesting future research would be the development of a common framework to accomplish the transition, along with the proposal of an IBP maturity model.

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