

Enhancing Supply Chain Planning Performance: The Design and Application of an Integrated Business Planning Maturity Model by Lauri Pechbrenner and Niklas Fritsche (June 2026)

Imagine a scenario of a well-known luxury retail brand failing to deliver products to its high-end clients, simply because of an Excel error.

When companies overproduce, millions of dollars can be tied up in unsold inventory. When they underproduce, customers leave empty-handed and valuable sales are lost, potentially damaging the retail brand permanently.

This thesis introduces a tool that helps companies assess the quality of their planning processes and provides guidance on how it can be improved to avoid stockouts and excessive inventory.

Preventing forecast and planning mistakes requires close collaboration among departments such as sales, finance, purchasing, and manufacturing. In the business world, this cross-functional approach is known as Integrated Business Planning (IBP). Although existing literature links higher IBP maturity to improved forecasting accuracy and greater enterprise profitability, there remains a significant empirical gap in understanding how organizations can practically achieve this transition within specific industry contexts.

Furthermore, existing Sales and Operations Planning (S&OP) and IBP maturity models differ in their dimensions and often rely on outdated technological definitions. This research addresses both theoretical and practical gaps by developing an updated consensus-based IBP-maturity model, as well as validating and applying it to improve planning performance within a luxury retail case company.

The developed IBP-maturity model is a granular framework structured across five evolutionary stages: Fragmented (1), Reactive (2), Integrated (3), Advanced (4), and Orchestrated (5). The maturity evaluation is assessed across six primary dimensions containing 19 distinct sub-dimensions:

1. **Strategy:** Strategic alignment, planning models, and risk management.
2. **Process:** Product lifecycle management, demand planning, financial planning, and supply network planning.

3. **People & Organization:** Leadership support, culture, skill development, partnerships, and incentive alignment.
4. **Technology & Data:** Planning tool sophistication, system integration, and data quality/management.
5. **Performance Measurement:** IBP measurement and advanced analytics.
6. **Governance:** Decision-making, escalation path structures, meeting cadences, and continuous improvement processes.

Validation and application of the IBP-maturity model with the case company revealed overall IBP maturity situated in a transitional state between the "Reactive" (Stage 2) and "Integrated" (Stage 3) levels, as depicted in Figure 1 below.

The assessment identified the "Technology and Data dimension" as the organization's weakest pillar. This is primarily attributed to a highly fragmented IT architecture, and legacy systems that are still in use across the global supply network. Consequently, planning operations rely heavily on manual data consolidation via isolated Excel spreadsheets, resulting in a lack of a *single source of truth* and inconsistent master data.

From a "Process and Organizational perspective, the company struggles with a low statistical forecast accuracy and poor data integration. The empirical findings highlighted cultural friction, characterized by siloed departmental operations and a persistent *blame culture* regarding inventory shortages and obsolescence, as well as internal resistance towards change.

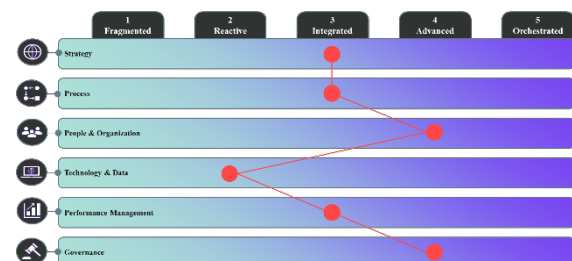


Figure 1: Example of IBP maturity evaluation

This popular scientific article is derived from the master thesis: A Framework for Improving Planning Performance: Designing an Integrated Business Planning Maturity Model, written by Lauri Pechbrenner and Niklas Fritsche (June 2026)