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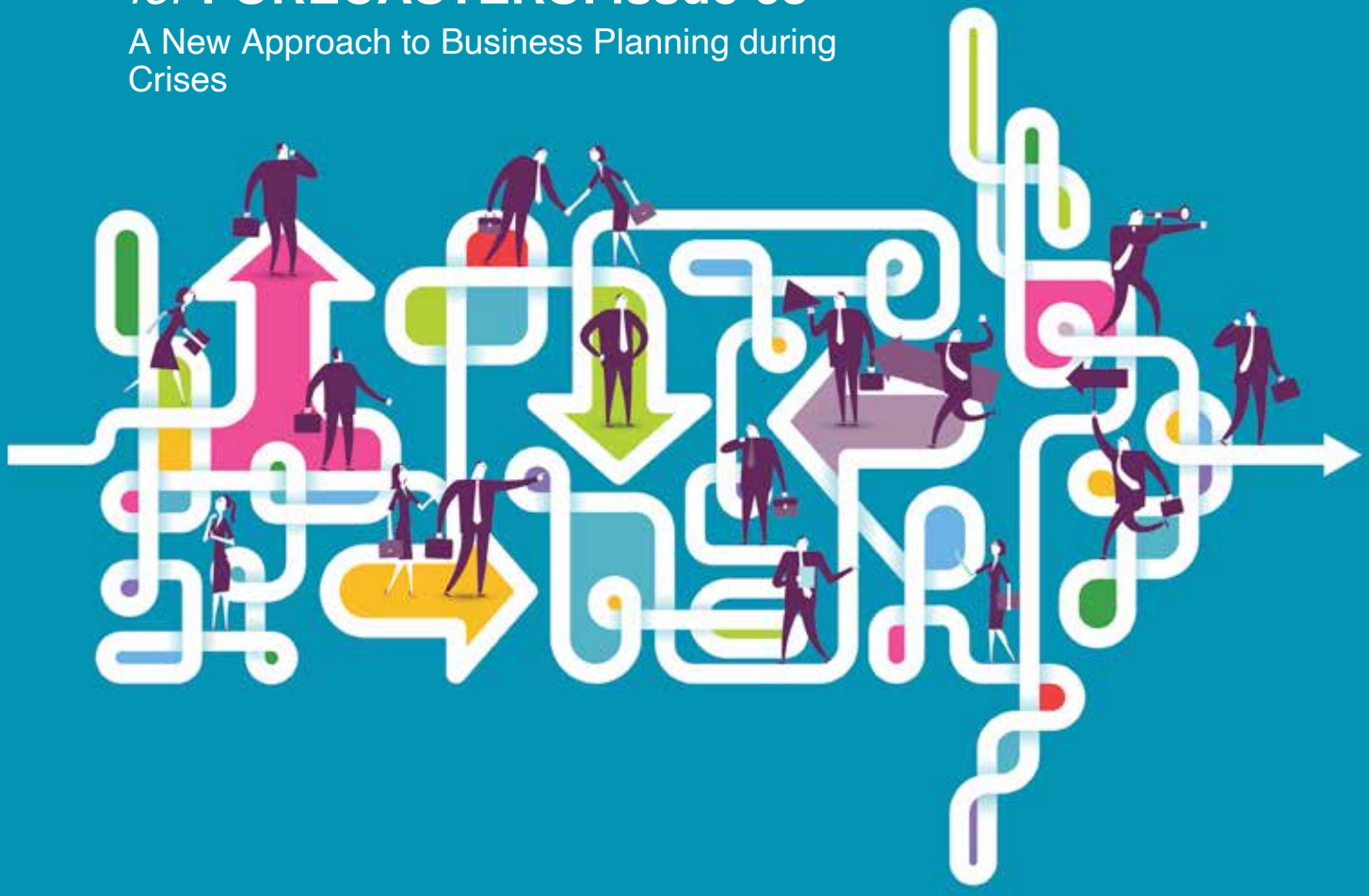

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A New Approach to Business Planning during Crises

NIELS VAN HOVE

PREVIEW *Niels van Hove writes that the limitations of the traditional Integrated Business Planning process are severely magnified during periods of significant disruption, which to many of us seems like the new normal. He argues that the standard meeting-and-decision schedule cannot provide timely strategic responses to disruption, as clearly evidenced by organizational steps during COVID. Instead, Niels offers a new tack centered on an IBP* decision squad*, whose sole focus is on the critical decisions at hand.*

THE TRADITIONAL FOCUS ON INFORMATION, NOT STRATEGIC DECISIONS

In the evolution of Integrated Business Planning (IBP) there persists the reliance on a process of sequential meetings (Stahl, 2009) designed to culminate in executive decisions. In fact, the early pioneers designed S&OP, the predecessor of IBP, as first and foremost an executive decision-making process (Palmatier and Crum, 2002; Coldrick, Ling, and Turner, 2003).

This traditional process has proven woefully inadequate for making timely decisions in support of company strategy, especially during periods of disruption. A main reason is that many IBP meetings take on an information-sharing character, rather than a decision focus (van Hove and Regeer, 2021). I conducted five S&OP surveys between 2011 and 2017, asking "What are the key actions taken in your S&OP process?" Between 37% and 59% of participants answered "Stay aligned with the company strategy on a monthly basis" (S&OP survey: 2011 [42%], 2012 [37%], 2014 [38%], 2015 [59%], 2017 [53%]). But strategic objectives deal with *long-term growth*, risk reduction, cost reduction, and service and sustainability improvements. The survey results indicate that perhaps a majority of S&OP processes lack the necessary strategic alignment.

To achieve strategic objectives, the organization must answer such questions as

- Shall we enter, grow, or exit a product category or market?
- Do we create production capability in-house, or outsource production?
- Do we upgrade a manufacturing plant, consolidate plants, or build a new plant?
- How can we best change our warehouse and distribution footprint?
- How do we best secure long-term supply of our critical raw materials?

Although such questions are usually set in a strategy plan, they require that the organization have options, and these all have a significant planning component. But planners spend up to half their time in an information role (Larco and colleagues, 2018), including gathering and cleansing data, and analyzing and creating PowerPoints – even before making or facilitating a decision. If the planners' time is consumed by information-providing roles, do they have the time to support these strategic decisions?

The ultimate goal of IBP is the generation of a plan to support an organization's efforts to deploy and execute its strategy. IBP doesn't set the company strategy, but it is in the realm of IBP to review strategic progress and align around adjustments. One would therefore expect IBP to focus on strategic decision making. In companies where I've worked over the

years, however, I've seen limited strategic decisions being made in the executive IBP meeting. Anecdotally, I still hear from planners that integrating strategic decision making into IBP is a challenge. In my career as a consultant, supply-chain manager, or IBP manager, I have never encountered a formal executive-decision approach to improve decision quality.

STRATEGIC DECISIONS UNDER SIGNIFICANT DISRUPTION

IBP processes under the best of circumstances may struggle to facilitate strategic decisions, and this gets even harder during significant disruption. Yet significant disruption in the supply chain is always lurking under the surface, due to wars, trade disputes, extreme-weather events, terrorism, cyberattacks, labor disputes, labor shortages – and, of course, pandemics like SARS, foot-and-mouth disease, and COVID-19.

The Double-Edged Sword

Planning during significant disruption is a double-edged sword.

- First, disruption initially requires short-term replanning, as executives demand continuous visibility into the short-term impacts of the disruption. One IBP manager reported to me that during COVID the CEO wanted the monthly IBP cycle to become weekly. In another company, the planning director indicated that, due to disruption, requests for daily replans and information updates were so frequent that his team could no longer cope with the churn and workload. He even became concerned about their mental health.
- Second, under significant disruption, strategic decisions – which are usually out in a 12+months decision horizon – can suddenly require a virtually immediate action. COVID exposed the need for companies to make rapid strategic choices, like closing a factory, entering or exiting a product category, or reallocating limited resources in their supply chain.

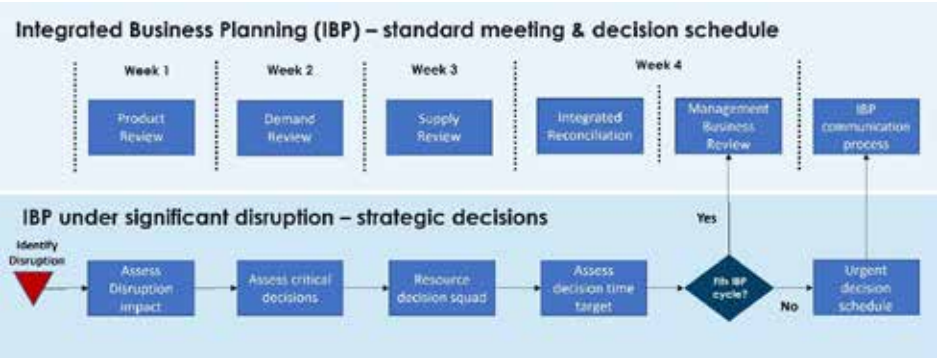
In disruptive circumstances, a business can't always take the time to wait on a strategic decision from the executive IBP meeting on a Thursday in the fourth week of the month somewhere between 13.00 and 17.00 hours. Quite the contrary, as COVID has exposed, we need an IBP decision mechanism that focuses on the crisis at hand. This very likely will require not only additional resources but reprioritizing the existing IBP team. Companies must learn not just to manage business-as-usual situations, but create a special capability to rapidly devise innovative solutions for unexpected disruptions and opportunities (Gattorna and Hills, 2020).

Muller and colleagues (2022) highlight how, historically, ad hoc supply chains under time pressure are created to respond

Key Points

- Traditional IBP is anchored in a 20-year-old process definition supported by 20-year-old planning concepts, leaving gaps in strategic decision making and organizational responsiveness to decisions made.
- Not only does the IBP process struggle to facilitate strategic decisions under normal circumstances, it has proven overly cumbersome and sluggish during times of disruption: wars, trade disputes, extreme-weather events, terrorism, cyberattacks, transport and port strikes, labor shortages – and, of course, pandemics like SARS, foot-and-mouth disease, and COVID-19.
- A focus on responsive strategic decisions during significant disruption will require changes to the traditional IBP process. We recommend the formation of a decision squad with the resources and skills to turn strategic decisions around in a timely manner.
- The role of the planner will have to adapt, but technology should be able to automate many of the information and short-term planning functions, freeing the planner to provide better support for strategic decision making and crisis management.

Figure 1: IBP under Standard and Disruptive Circumstances



to the crisis or to grasp new opportunities. Their empirical data suggests that these supply chains rely heavily on their dynamic ability to quickly reconfigure existing operational capabilities. They further identified that process alignment is required, as many planning processes get bypassed, and that project teams are required to work jointly on the same task and enable enhanced team communication.

Figure 1 shows my suggested process adaption of the standard IBP cycle to manage strategic decisions under disruption.

Decision Squad

In a steady state, the IBP team runs a well-organized process to understand the performance of the business, develop a rolling forecast, highlight gaps versus budget, and identify further risks and opportunities to close these. Ongoing business-wide continuous improvement can indeed be led by the IBP team.

However, if a decision on short notice needs to be made to close a factory temporarily or permanently, the IBP team most likely lacks the skills, resource, and organizational clout to facilitate a timely decision. A team with extra resources is needed and must be given a clear mandate to facilitate this one critical decision. Once disruption criteria are met, a decision squad can be formed that solely focuses on the critical decision at hand.

Depending on skill requirements, this decision squad can be resourced by temporarily reprioritizing the existing IBP team resources to facilitate the decision or by adding additional company resources. The decision squad might need help from finance, operations, and HR to understand detailed operational structures, employee solutions, and financials. They will need to have access to predictive capabilities and be able to run simulations around possible decision scenarios, understand the risks associated, and forecast financial impact.

If the decision timeline fits in the IBP meeting schedule, the normal process timelines can be followed. If the decision timeline doesn't fit in the IBP process, the decision squad will organize and facilitate an urgent decision at an agreed upon time different from the standard meeting schedule.

The decision squad would report to the functional decision owner. In the case of closing a factory, this would be the operations executive. The IBP team member from operations and the IBP team lead would play a critical role to support the facilitation of this decision and keep it integrated within the IBP cycle.

In the case of a short-term decision to enter or exit a product category, the IBP team would need similar organizational support. The highest marketing executive would lead the decision squad while the team member from marketing and the IBP team lead will uphold the integration with the IBP cycle.

Once the short-term decision has been made, additional decision squad resources can move back to their functional role. A project team, which can have a

different resource structure than the decision squad, will be formed to execute the decision. From there, the project can be tracked for progress.

A mature IBP process should have an effective communication process as an output to keep employees informed, engaged, and focused on executing strategy (van Hove, 2016). The decision squad and the subsequent project implementation team need to communicate with the business in alignment with the normal IBP cycle.

Once the project is completed, the decision squad should document the strategic decision-process steps, the final decision, and its outcomes versus expectation. Decision criteria will need to be agreed on to assess the perceived quality of both decision process and outcome. The squad is responsible to capture all this knowledge as a reference to improve future decision making. The decision quality will become a business performance element highlighted in the IBP cycle.

A SHIFT IN PLANNING ROLES

Intelligent IBP

Hein Regeer and I (2021) envisioned a future *intelligent IBP*, where many of the information and planning tasks are automated. Short-term decisions regarding supply-and-demand balancing, including dealing with stockouts, have high levels of automation potential. Automation would improve responsiveness in the short- to mid-term and save time for the planner to facilitate faster and higher-quality strategic decisions.

An encouraging example is that of a large pharmaceutical company with 200 planners. The company implemented a program to augment and automate short-term (Sales & Operations Planning Execution). Planners had previously spent about 40% of their time solving product stockouts or near stockouts, from the first signal of a potential problem, to analysis by a planner, to a stockout mitigation decision and action. With the application of technology, the planners now only have to review a recommendation and approve for action. Instead of a full day's work, fully automating the process would reduce decision time to eight seconds.

Planner Functions

Larco and colleagues (2018) identify different roles for schedulers: the decision role, interpersonal role, monitoring role, information role, and the transactional role.

The goal of more-responsive planning decisions requires adaptation to new responsibilities. I foresee the following shift in planning roles:

Information: The transactional role of data gathering, cleansing, manipulating, and planning parameter maintenance can be largely automated. The process will shift to having a more architectural overview about what internal and external data sources influence the plan and how they are integrated. An IBP leader with a good understanding of IT architecture can move quickly to understand the information needs and data access required for a decision squad.

Planning and analytics: The monitoring role will advance to an analytics role. Planning processes and descriptive and diagnostics analytics will be largely digitized and automated and made available for IBP stakeholders. There will be more focus on business simulations and what-if scenarios, which becomes a critical capability for a decision squad.

Interpersonal: Maintaining cross-functional and strategic alignment as a planning business partner remains key in a planner's role. IBP team members must be able to effectively work with other people under time pressure in a decision squad. For the monthly IBP cycle, however, the focus will shift to periodically negotiate cross-functional policies to guide planning, reporting, and decision automation.

Decision: This role will see a significant rise in scope and importance. It will not only cover planning and scheduling decisions, but – especially in a decision squad situation – also short-term strategic decision preparation and facilitation.

Managing the quality of a decision and capturing decision knowledge will also have to evolve here.

Automation: This is a new planning role that will emerge. Both planning process and decisions will be automated where possible. It becomes the planner's role to find efficiencies and incremental levels of decision augmentation and automation.

The evolution towards a more responsive and strategic IBP requires organizations to think through these changing roles of planners, the skills required, and their incentives. The IBP team and resources for a decision squad will need to be thought through to support a steady and disruptive state, with the skills to facilitate timely and high-quality strategic decisions.

Niels van Hove is a Client Engagement Principal at Aera Technology. He uses his more than 20 years of experience to help companies make more autonomous decisions and actions in their supply chain. See our "Forecaster in the Field" interview with Niels in the Summer 2016 issue.

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Commentary on "A New Approach to Business Planning during Crises"

VAISHAL PATEL, GEORGE MONOKROUSSOS, AND JASON CHEN

The COVID-19 pandemic caused unprecedented volatility in, among many other things, the global supply chain. Niels van Hove's article presents an approach to crisis planning not unlike the system we implemented at Wayfair and will describe in this commentary.

COVID-19 was a shock to the existing ways of working, introducing a level of variability and uncertainty that we haven't experienced in the recent past. At Wayfair, we quickly learned that standard business practices and technology wouldn't suffice—supply chain planners and operators could not effectively manage this variability with a business-as-usual approach. While many aspects of Wayfair's operations had to adapt to navigate through change, there are three key success areas we would like to dive into more deeply that have enabled Wayfair to deliver strong outcomes to our customers and supplier partners.

INVENTORY FORECASTING

Pre-COVID, we generated our product-level forecasts by ensembling univariate time-series models that were trained on product historical demand. COVID brought dramatic changes to our demand patterns that necessitated a radical overhaul of our forecasting framework. Large trend shifts and seasonal changes (e.g., year-over-year growth in the U.S. jumped from 20% in Q1 2020 to 80% in Q2 2020) severely compromised the performance of our existing models. We had to quickly come up with new forecasting solutions that would help us better navigate this unprecedented environment.

In response, we formed a COVID forecasting group consisting of data scientists, engineers, and product managers. The group's task was to introduce and put into production a new forecasting approach, while also communicating frequently with corporate to update them on forecast refreshes and, in turn, receive executive input and business intelligence.

We chose an unorthodox, top-down forecasting approach, in which we would forecast aggregate demand (using a combination of dynamic factor models and scenario-based models on the evolution of key business indicators) and then distribute these forecasts hierarchically downwards to the product level using product-share forecasting models (Alexandrov and colleagues, 2021). This top-down solution allowed us to incorporate executive and judgmental inputs in a structured manner, directly controlling the aggregate forecast error, while also tapping into the more stable product-share data. Our approach delivered forecasts that outperformed the legacy forecasts at all forecast horizons and established new models more quickly than before.

INVENTORY REPLENISHMENT

Historically, inventory planners worked closely with supplier partners on inventory replenishment strategy and execution across multiple weeks and, at times, months. The COVID-19 pandemic made an already complex inventory planning and management process even more challenging. A nimble planning practice that leverages short planning cycles and frequent communication with suppliers has proven to be an effective approach in coping with high levels of uncertainty.

During the first year of COVID-19, there was a dramatic rise in demand for furniture and home goods. At the same time, international and domestic shutdowns caused severe disruption in production and transportation. Wayfair quickly pivoted our planning processes to engage with supplier partners more frequently to build consensus on product forecasts, understand sourcing limitations, and plan out inventory flows into Wayfair's proprietary fulfillment network.

In reality, of course, not all suppliers and planners were able to execute a quick iteration planning strategy. Planners that reviewed inventory needs and placed orders weekly instead of monthly (or monthly instead of quarterly) were able to react faster to forecast changes, have more opportunities to place emergency orders if needed, and secure inventory from alternative sources when necessary. As a result, they were able to achieve a much better outcome.

As the pandemic entered its second year, consumer demand started shifting away from durable goods and toward services as people began resuming some normal activities. Frequent replenishments from sources with shorter production and transportation lead times again allowed the planners to compare inventory position and demand forecast, and make necessary adjustments in a timely manner. On the other hand, quarterly replenishments from international sources with long lead times led to excess or even distressed inventory on hand.

S&OP

Forecasting and inventory replenishment planning serve as key inputs into the S&OP process, ensuring Wayfair has secured operational capacity to service expected inventory flows. While the company had an existing S&OP process to support capacity planning, our processes and systems have evolved considerably over the past 24 months. With growth in scale and complexity, the cross-functional teams needed step-change improvement across process and technology to deliver strong business outcomes.

First, Wayfair quickly moved to truly end-to-end integrated planning. Prior to the pandemic, our S&OP processes focused on critical supply chain capacities with the assumption that others have a wide tolerance for adjustments and were nimble to react to changes at low cost. For example, prepandemic lane-level ocean capacity was planned and secured at the yearly level as part of standard industry planning cycles, with enough buffer to manage typical variability. However, the pandemic was not business as usual, and required a more hands-on approach.

Similar to what Niels van Hove describes in his article, Wayfair established a small leadership team with decision-making authority to directly engage ocean carriers on shorter planning cycles, revising contracts with greater flexibility, and providing better visibility into the flow of goods. With the improved forecasting and inventory planning described above, the team was equipped with better data on expected material flows to then ensure we could work with carriers to secure vessel capacity.

Second, S&OP capacity-planning processes had previously been at a weekly granularity on a rolling 12-week horizon, where daily execution was handled "on the ground" with limited intra-week variability. The step-change increase in variability required planning and execution teams to pivot to a daily S&OP cadence, complementing the weekly process. More frequent alignment with relevant stakeholders armed with real-time data improved coordination, near-term planning, and exception management. A clear example of this was during the acute container backlog in Port of Los Angeles/Long Beach in 2021. With dozens of container vessels awaiting berth at port and poor predictability of raw ETA signals, weekly planning proved to be inadequate. With a small team in place dedicated to daily planning, our drayage teams were able to bring real-time data on port operations to S&OP forums so the supply chain could adjust and react to intra-week variability.

Lastly, and perhaps most importantly, Wayfair overhauled our technology platform that powers the S&OP process. Pre-COVID S&OP procedures were largely driven via spreadsheet-based planning, with supply chain planners at times manually populating and cleaning data. As Niels describes, the key value driver in S&OP is to analyze trade-offs and enable fast decision making. Daily planning via manual spreadsheets was clearly unsustainable. Although early in the pandemic we were building the plane while we were flying it, we made strategic decisions to invest in a robust S&OP platform, enabling automated data integrations, quick iteration scenario analysis, and KPI management for performance reviews. This S&OP technology platform will enhance our planning processes, setting the team up for future scale.

Ultimately, it is difficult to predict exactly what the next supply chain disruption will be, but we can agree that it's coming. The legacy approach to S&OP will not adequately prepare the supply chain to respond and adapt to rapidly changing environments in different time horizons. The pandemic forced a culture change in how we plan and operate the supply chain. Niels' recommendation on small, empowered teams that facilitate fast decision making during crises is a key lever that Wayfair has adopted in its tool kit.

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