Future Series

The Planner of the Future:

Five Trends to Help Plan for Success

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To keep up with fast-changing customer demands, today's executives typically choose between planning better via improved forecasting or executing better, via increased operational agility. Blue Yonder proposes a solution: digitally integrating planning with execution, to make both processes more agile. In the future, optimized supply chains will not only adapt to the inevitable changes that happen during execution, but also detect variances early enough so adaptations can be made during planning when they are orders of magnitude more effective and less costly.

Abstract:

The last five years of supply chain have been marked by a never-ending chase: on one hand, the undeniable shift in customer expectations for instant gratification, and on the other, the exponential frustration of companies who have been trying desperately to update and digitize their operations in response. Now, the dawn of a new decade brings with it new understanding and new hope. What once was a frantic collection of technology solutions by supply chain departments with the hope of eventually collecting enough software solutions to achieve the holy grail of "digitization", has evolved into a more practical, use-case based approach. Companies aren't expecting one technology to solve all their problems; they're laying out a strategic path to success and simultaneously finding solutions that can help them achieve it.

But even with this new understanding, there is still a paradigmatic blindspot that's blocking the ultimate achievement of a digitized, autonomous supply chain. Historically, supply chain taxonomies developed out of the natural need to subdivide an intractably complex domain into smaller sub-domains (e.g. plan, source, make, deliver) that individual demand planners, network designers, logistics managers and other supply chain professionals could master. But this historical sub-division of an inherently interconnected domain has created dramatic inefficiencies that are only exacerbated by rising customer expectations and other industry re-defining trends.

One of the biggest — and most underappreciated — of these structural inefficiencies is the separation of planning and execution. The way supply chains are set up today, there are different organizational and technological branches dedicated to planning and execution. This creates a false choice for today's supply chain executive: do I focus on my supply chain's ability to adapt to unplanned exceptions (since monitoring and response traditionally sit solely within execution), or do I invest in planning capabilities that will help improve forecast accuracy. This apparent dichotomy has trapped many organizations into focusing on agile response and adaptation capabilities only within the execution phase of their operations. This mentality not only further engrains the problem of disconnected supply chain silos, it also keeps companies from achieving either truly integrated end-to-end capabilities.

Instead of keeping these branches separate, true digitization will bring them together, based on the understanding that adaptations to plan have more ROI and operational impact than reactionary measures that only happen during execution. But treating a plan as an abstraction that can never approach reality is a self-fulfilling prophecy. A "real time" supply chain is not one that can only adapt to the inevitable changes that happen to a plan during execution, but rather, a supply chain that catches variances early enough so that stakeholders can predict and pivot during planning, when corrective action is often orders of magnitude more effective and less costly.

The "plan or adapt" dichotomy is leading companies to miss a crucial strategic opportunity: the digital integration of planning and execution. Companies who bridge this fundamental gap will achieve greater return on investment and operational outcomes compared to reactionary measures that only happen during execution. Fortunately, new enabling technologies have made it possible to revisit these ingrained silos. Today, forward-looking companies can shift their approach to ride emerging trends towards a more successful "predict and pivot" planning paradigm, rather than an endlessly reactive one. A supply chain that discovers variances early enough can proactively correct, whereas a supply chain that is in constant fire-fighting mode is likely to experience an endless cycle of "read and react." Supply chains are trending toward increasing complexity, driving a great need for breaking this traditional "plan or adapt" dichotomy.

Five emerging trends that will fundamentally redefine supply chain:

1 Sustainability and Risk Management

Customers today don't just expect instant gratification; they expect companies to provide this seamless experience with a minimal carbon footprint. While this past decade has elevated climate change into a mainstream concern, the upcoming decade will be one in which operations need to transform their methods to dramatically lower waste and reduce hazardous emissions. As buyers have more and more access to information, companies won't have a choice whether to focus on a sustainable operation or not; it will be as baseline an expectation as one-hour-delivery. These new buyers — more informed and increasingly socially conscious — are taking a keen interest in where products are coming from, how they are made, and what impact these products have on the environment. This touches almost every aspect of supply chain in every industry: from ethical sourcing, to incorporating recyclability into design, to biodegradable packaging materials, to end-to-end supply chains that can lower waste, buffer, and excess and obsolete (E&O) inventory.

In the electronics industry for example, manufacturing processes and the supply chain as a whole constitute up to 80% of a typical firm's greenhouse gas emissions. And while 74% of consumers recycle containers made of glass, metal, or plastic, just 51% recycle electronics at the end of those products' useful lives.

In the food industry alone, roughly one third of the food produced in the world for human consumption every year — approximately 1.3 billion tonnes — gets lost or wasted. Food losses and waste amounts to roughly US$ 680 billion in industrialized countries and US$ 310 billion in developing countries. Produce goes bad before leaving the distribution center. Prepared foods go bad on the shelves daily. And despite programs to donate unused food, companies just can't keep up with all the food they have that can't get to the register fast enough.

Yet the future of planning holds the promise of significantly reducing this type of waste. Already leading food supply chains are using machine learning from Blue Yonder to optimize perishable inventories. Natsu, a leading provider of ultra-fresh foods to over 3000 grocers every day has reduced leftover stock by 20%. Morrisons, a leading grocery chain based in the United Kingdom, optimized replenishment with up to 30% reduction in shelf gaps while minimizing waste, and was voted the most environmentally responsible company in the UK for its pioneering work in plastics reduction.

Using traditional supply chain approaches, technologies model long-term trends to provide guidance for future inventory planning. However, this takes into account neither day-to-day disruptions, nor zeitgeist changes (for example, the popularity of wearable electronics or the growing preference for fresh foods). To get ahead of a constantly changing reality, machine learning applications can't only be backwards-facing. New technological capabilities are emerging to leverage many more signals (like local foot traffic, cell phone activity, social media inputs from influencers, etc.) to help companies better understand and adapt to real-time conditions. While most supply chain approaches take such signals to better react to changes that have already happened, there is a greater opportunity in feeding this information back into longer-term planning processes. By understanding what is happening in a certain place, at a certain time, companies can forecast with far more accuracy, holding optimal inventory in the right locations, and significantly reducing waste, excess, and carbon footprint.

2 Uniform to Personalization at Scale

While the large-scale personalization trend may have begun in targeted marketing, it has found a more substantive home in supply chain. The traditional model of mass produced, low priced items, manufactured in lowest cost-arbitraged centers and delivered through stove pipe channels is under stress. Today, there is increasing momentum towards goods produced with local content, influenced by real-time consumer demand, and distributed via a closer-to-the-consumer network. All of this, with the continued expectation of competitive prices. This preference towards mass personalization challenges the fundamentals that used to be taught in business schools around the country — economies of scale win and standardization is king.

Such a market shift requires companies to take a step back from this conventional wisdom and take a step towards a hyper-local approach. In the world of retail, for example, brands can no longer operate as one entity, with some modest, periodical segmentation. They must operate at store-level granularity, with understanding of their regional market. This impacts everything from inventory to production to distribution. To make personalization affordable, companies have to think differently about how their operations are structured.

Currently indexing on mass production and standardization, most manufacturing sites, for example, are designed to produce large volumes with few variations, trading flexibility for quantity and low per-unit cost. Traditional supply chain organizations struggle to handle this new trend because the production planning process is based on mass production with few variations. The only way to support this trend is to feed the data about hyper-local and personal preferences (historically only captured for improving execution within lead-time) directly into the demand planning and production planning process. Companies can't accomplish personalization at scale by simply making execution more responsive or adaptive,

because this approach is predicated on standardized products that can simply be moved around between distribution centers. The only way companies will be able to scale their operations to sustain the personalization trend at scale is by adapting their entire production operation to ingest data sooner, and make adjustments before production takes place.

Take for example the Lenzing Group, a supplier of high-quality specialty fibers to the global fashion industry. The Lenzing Group recently undertook a goal to connect demand forecasting, sales planning and operations planning via digitalization — creating an extremely accurate, efficient end-to-end supply chain. This new level of transparency and visibility helped Lenzing stakeholders understand the needs of both customers and end consumers, creating a more accurate forecast — and, ultimately, a much more agile and responsive supply chain. Still early in its broader digital transformation, the company has already reduced its planning and decision-making time by 50%.

3 Channel complexity/omnichannel

Growing customer expectations (instant gratification, sustainable operations, and personalized products and services) increase the urgency of providing a seamless, consistent buying experience regardless of where a purchase is made: online, mobile, or in store. While the traditional multi-channel experience is about providing the buyer with options (with no guarantee for a standard of service across the different channels), the omni-channel experience is about integrating all channels to give the customer freedom to purchase what they want, where they want, when they want.

To adapt supply chains to omni-channel needs, companies must remove the silos that currently separate the different sales channels. This means looking at ways to gain efficiencies, for example, disintermediating warehouses and having manufacturers ship straight to the retailer or buyer. While these kinds of structural changes can have significant impact, they don't solve one of the key pain points that make omnichannel challenging: the need to scale a variety of customer journeys in real-time while customer preferences remain volatile. In other words, trying to create a seamless experience across millions of moving targets, needs, and desires.

Machine learning and AI solutions can enable omnichannel strategies to scale by providing insights into continually changing needs and preferences of customers early enough to impact production rather than distribution. In turn, this lets companies create tailored customer journeys that scale and deliver consistent experiences across all channels, so customers don't feel a distinct preference for one over the other.

Similarly to tackling personalization at scale, the answer to taking on omnichannel challenges requires a holistic and interconnected approach. Limiting powerful AI/ML technologies only to making minor adjustments in finished goods inventory allocation within the distribution network is like spitting on a forest fire. Currently, finished goods are produced in the same limited number of locations, regardless of channel. Therefore, approaches that only address the factory-to-consumer half of a supply chain can never adapt effectively to changes that span multiple channels. To unify customer experience across multiple channels, companies need to impact production plans.

Coca-Cola Bottling Company Consolidated (CCBCC) is an example of a company taking on the channel complexities of the future head on. Meeting the fickle demands of consumers is a daunting challenge in the beverage industry where new product introductions and categories are constantly created, crowding shelves and heating up competition. A higher degree of micro-marketing at the channel and chain-store level complicates matters further as each side fits into different package categories. To unravel this complexity, CCBCC teamed with Blue Yonder to upgrade its demand planning, collaboration and transportation management capabilities, reducing inventory levels by up to 50 percent while increasing customer service levels by 15 percent.

4 The Drive to Autonomous

Not long ago, the quest for an autonomous supply chain seemed like a fantastical daydream. But as we enter 2020, we're already seeing practical applications like autonomous resolution of recurring issues or segmentation of products across different regions that point towards an autonomous supply chain being a reality sooner than we think. According to a 2019 joint study of supply chain executives by Blue Yonder and KPMG, 82% of supply chain executives plan to deploy or test cognitive analytics and 62% plan to deploy AI/ML in the next 24 months.

Where teams used to spend the majority of their time solving recurring problems as if they were new ones, today there are platforms that use machine learning to track behavior to not only repeat proven resolution steps, but also make recommendations to improve efficiency. Additionally, where in the past teams spent weeks on segmentation exercises to distribute products by region based on a myriad of individual assumptions, today, software can do this in milliseconds. Not only is this faster, it can take into account many more factors than a human brain — which, incredible as it is — can usually only balance a few dimensions of information at most.

This means that companies taking steps to begin running their operations on such platforms are leaving the world of "big bets" behind, and entering a new era of enlightenment: using data not to better respond to problems but actually foresee — and forestall — problems.

5 Economies of Intelligence

The rise of mobile, geo-spatial, social media, and IoT has led to an exponential explosion of data availability. Just as the access to land, capital, or labor separated the winners from the losers during the industrial age, the access, synthesis, and understanding of data will be the determining factor of success in the digital age.

The capacity of an organization to learn — to process and synthesize massive amounts of data into actionable insights that can be applied and tested to drive more insights — represents the most fundamental competitive differentiation in the coming years. And everyone is rushing to take advantage: according to IDC, companies spent over $190 billion on data, analytics, and AI technologies and services in 2019 alone .

But whether human or machine, learning only works when the learner has access to all the relevant information. And when it comes to supply chain, the proliferation of information silos represents a critical barrier to effective adoption and application of AI. Whether the goal is predictive forecasting, autonomous allocation, or continuous modeling, advanced intelligence applications will be stymied if real-time data cannot flow across traditionally disparate supply chain functions and phases. The ability to continuously learn — and apply those learnings — at scale depends on end-to-end platforms that enable data and insights to frictionlessly flow between planning, execution, monitoring, and adapting activities and processes.

Bringing it all together

Most companies still don't see supply chain fires coming. By the time they do, they are already behind and must quickly attempt some sort of rapid response, often fighting these supply disruption fires with spreadsheets or other insufficient tools. This results in expensive band-aid solutions, costly resolutions and disappointed customers. What's worse, supply planners seldom have visibility to the cause and effect of disruptions across complex supply networks, so they're not able to update or canonicalize future best practices. This makes every inevitable fire an at-hoc affair.

As a result, supply planners spend an average of 70% of their time on fire-fighting disruptions. Not a very good use of their time and talent, especially considering that most companies say their planners should be spending 75% of their time on strategic supply planning.

What if instead of trying to respond rapidly when a disruption comes in, planners could predict probable disruptions ahead of time and make adjustments to avoid them? What if your planning systems could sense potential disruptions in real time and both notify planners and, if appropriate, autonomously respond with prescribed resolutions? What if when your planners arrived for their shifts, the planning system provided an intuitive, prioritized list of potential disruptions based on cost and service impacts, along with recommendations for the most optimal resolutions? And what if planners could then collaborate online with partners and simulate resolution outcomes? Potential disruptions would be resolved proactively, as opposed to in a wild chase. Solved before they could impact the business, reducing costs, service delays and customer issues.

But in order to enable this predictive, adaptive, proactive supply chain operation, it is imperative to break the artificial dichotomy between plan and execution. A dichotomy, which by definition, is reactionary. This dichotomy assumes that plan and execution must always live on two different spheres — and no matter how good teams are at fighting fires, they're one step behind. They are responding, rather than anticipating.

At the dawn of the revolution

How quickly can you predict and pivot to disruptions caused by random events, news and weather — predicting and preventing future business disruptions, improving supply chain forecast accuracy and elevating business performance with speed and agility? How closely can you tailor a platform to your needs, integrate applications or tools, and power a supply chain that is constantly ahead of your customers' needs?

For the last five years, we've been hearing about the changes that will take place in the industry due to rising customer expectations. We are no longer talking about the future; the future is now. Supply chain solutions must find solutions that deliver end-to-end planning platforms that look across demand and supply synchronously, and concurrently across both short- and mid-term horizons. Today's supply chain must be more intelligent, predictive and capable of delivering to your customers when, how and where they want it. Like never before, your supply chain must deliver differentiated customer experiences and business outcomes by not just rapidly responding, but predicting and pivoting with speed and agility.

There's a reason

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of Gartner's Top

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supply chain companies rely on Blue Yonder to set the stage for success in the 2020s.

Learn more at blueyonder.com

1 https://www.sourcetoday.com/news/buying-trends/article/21866676/the-greening-of-the-electronics-supply-chain

2 https://www.businesswire.com/news/home/20200121005105/en/

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