Labor Optimization in the New “Everywhere Commerce” Retail World

The Internet has revolutionized the way consumers shop and in the process has put unprecedented pressure on the retail supply chain to keep up or lose sales and customers. New shopping channels and fulfillment processes such as buy online/pick-up in store, buy online/return to store, and buy online/fulfill in store are forcing retailers to design greater flexibility into their extended supply chains to respond to the new normal of “Everywhere Commerce” that is today’s retail landscape. This makes the old adage of getting the right product at the right place at the right time more difficult than ever to meet the increasing demand of consumers to shop how, where and when they want. The result is a new set of challenges that make an efficient supply chain essential on a strategic level to survive in such a volatile, competitive world.

In a recent study of more than 600 global supply chain executives conducted by McKinsey & Company, the top three challenges today are:

1. Demand volatility
2. Increasing consumer expectations
3. Cost pressures on logistics and transportation

McKinsey Global Survey Results – The challenges ahead for supply chains
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In response to these new challenges, some retailers have become adept at designing more flexible supply chains, allowing them to be significantly more responsive at a competitive cost. Strategically, retailers have made significant investments in distribution networks and have leveraged innovative distribution strategies, such as segmenting their supply chains to accommodate erratic levels of demand and employing advanced distribution solutions such as cross docking. Tactically, leading retailers have invested in Supply Chain solutions such as inventory visibility and trading partner collaboration, incorporating flexibility in the fulfillment process so they can respond to increasingly volatile demand. These solutions allow retailers to re-direct inventory in real time anywhere in the supply chain to ensure the right product is available when and where the consumer wants it.
As supply chains become faster and more agile to meet increasing consumer demands, so must labor resources evolve to support the new paradigm in buying patterns. Retailers who have added the flexibility to fulfill when and where the consumer wants it in dynamic real time must also evolve their labor resources to ensure they have the right number of people at the right place at the right time in the store, in the DC and across the fleet.

Not to optimize the distribution workforce to match the new normal in the retail supply chain puts the retailer at a disadvantage in terms of costs, service levels and competitiveness.

Historically, the distribution workforce has been a full time (often union) fixed shift operation that has been largely treated as a fixed annual cost. Retailers are more concerned with how productive their employees are as opposed to how many employees they need at any given time. Schedules are established and shifts determined on an annual basis and unless there is a significant change in the network, the number doesn’t change except for natural attrition. Because in most distribution centers labor makes up nearly 55% of total costs, if inventory levels are adjusted based on fluctuating demand, shouldn’t workforce costs be adjusted in the same manner to reduce costs and increase efficiency?

The figure above vividly depicts the historical annual throughput levels within a retail distribution center as compared to the static headcount of the labor force. The full-time fixed shift workforce does not mirror the actual demand for workers as dictated by consumer buying patterns. Synchronizing actual throughput to needed labor levels is the challenge facing most employers. Too much labor and the total cost to serve will be excessive, resulting in being unprofitable or noncompetitive. Too little labor and service levels are sacrificed and sales are lost. Neither scenario is acceptable in today’s highly competitive marketplace where retailers are fighting for every customer.
The key is for retailers to predict when the peaks and valleys will occur and establish appropriate staffing levels to minimize the use, and associated costs, of temporary and overtime workers. Throughput, however, is a moving target affected by a myriad of forces including:

- Economics
- Training
- Network Change
- Order Size
- Process
- Globalization
- Productivity
- Technology
- Demand Volatility
- SKU Proliferation
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- Demand Volatility
- SKU Proliferation

Workforce optimization must account for these variables. To do so requires a hierarchy of processes that ensures the synchronization and correct balance of labor (full time, temporary and overtime) to handle the peaks and valleys in day-to-day throughput levels and get the most work done at the lowest possible price while delivering the highest level of service. To reach this goal the hierarchy is based on three fundamental steps:

1. **Strategic Workforce Forecast**
   - Annual labor budget
   - Temporary and OT planning
   - Capacity planning

2. **Workforce Schedule Optimization**
   - Day, shift and job planning
   - Employee scheduling
   - Resource assignments

3. **Milestone Workforce Optimization**
   - Promotions
   - NPI
   - Major operational impacts

**Step 1. Strategic Workforce Forecast**

The first step to optimizing the workforce, usually completed on an annual basis, is to forecast the projected throughput for the year. The inputs generally include historical throughput, projected volume increases/decreases, employee productivity, new process improvements and network or facility changes. The outputs from this optimization exercise include a forecast that plots the amount of labor needed to perform the projected work by day, shift, job and zone, an analysis of where there is too much labor and where there is too little, as well as the cost associated with the projected labor plan. The user can also simulate “what if” scenarios to gauge the impact of adding temporary or overtime labor to fill the gaps and determine the most effective balance of full time, temporary and overtime resources needed to perform the projected workload.

Forecasting the workload as well as the labor requirements in advance provides better visibility as to where bottlenecks may occur and allows the end user to address issues long before they arise.
Step 2. Workforce Schedule Optimization
The second step in synchronizing the workforce with actual demand, usually completed on a monthly or even weekly basis, is to schedule the labor in an optimal manner to handle the inventory at the lowest possible cost. This requires taking into account every individual employee’s productivity, labor rates and qualifications and balancing that against every other employee’s productivity, labor rates and qualifications to determine the optimal time and activity to schedule each employee. This is much more complicated than it may seem. In a typical warehouse with 100 employees and three shifts the variables run into the millions. Only by leveraging advanced optimization technology can a company effectively arrive at the optimal schedule.

The result of this exercise is a schedule aligned with current demand for each employee, by day, by shift, by zone. This optimization means that supervisors no longer view labor allocation in terms of individual area, but in terms of what is best for the overall facility.

Step 3. Milestone Workforce Optimization
The third step involves forecasting and scheduling labor around preplanned milestones or events that create unique impact on demand, such as new product introductions, promotions and seasonality. Precise spikes in demand created by event milestones are difficult to quantify. Analyzing past history and massaging the data for a specific milestone offers visibility to the potential impact and provides a basis for adjusting regular, overtime and temporary labor. It also optimizes the scheduling of individual employees so that new and different work can be completed in the most cost-effective manner.

The result is a labor resource allocation plan that is tailored to the event.

Summary
Just as companies are developing faster, more nimble supply chains to respond to the new “Everywhere Commerce” retail environment, they must also optimize their labor resources to align with the constantly changing demand and throughput. Labor, more than half the total cost of the distribution center, is a critical consideration in both delivery and service levels and can be the key to profit or loss. To ensure the proper level of labor, companies must address these key issues:

- Plan and forecast annual workforce budget.
- Establish appropriate level of regular workforce for projected work.
- Optimize the mix of Regular, Overtime and Temporary labor.
- Plan for seasonal changes, new product introductions and promotions.
- Continually optimize staffing levels by day, shift job and zone.

By aligning labor with optimizing the supply chain, companies are realizing substantial savings, increased efficiency, more productivity, higher employee morale, and most of all, higher profits and happier customers.
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