A solution for all seasons

Using innovation to manage peak
seasonal demand

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Introduction

Seasonal peaks are something experienced by every sector in some way, and at some time. While the timings can differ from business to business, it is the distribution centers (DCs) that feel it the most when it happens. DCs can expect to double staff levels during peaks, and seasonal employees must hit the ground running at full productivity with minimum training to offset additional labor costs.

To tackle this, operations often need to be escalated with additional automation equipment, which, if necessary, can be scaled back during off-peak periods. Innovative tech can be used to meet the many challenges that seasonal peaks present, from forecasting to fulfillment and future-proofing.

"A single product in a DC might have a huge effect on seasonal demand dynamics, and good simulation software will allow you to forecast this and take the appropriate action."

Simon Shore
Supply Chain Optimization & Simulation
—Warehouse Layout & Design

Seasonal spikes

The US National Retail Federation estimates that the **winter holiday season represents 20–30% of total retail sales**, with holiday sales growing at an annual 2.5% for the last 10 years.

The solutions

Warehouse simulation

Successful forecasting and planning for seasonal peaks in modern warehouses lies in the use of warehouse simulation software. By examining a series of "what-if" scenarios, across a variety of circumstances, DCs can test their warehouse configuration to the breaking point. This helps them make assumptions on aggregate demand, and forecast for specific percentage demand increases at any point in time.

While it is less straightforward to add or subtract physical space, warehouse simulation gives warehouse operations insight into when and where they will need to add seasonal staff, how many they'll need, and which supporting technologies to deploy. It is fast, intuitive and responsive, and a major advance from the traditional spreadsheet model, which is open to error and time-consuming to produce and maintain.

Good warehouse simulation software lets DCs visualize and quantify the effects of change in demand, identifying potential bottlenecks and validating strategies to address them. This could include the deployment of voice-directed technology instead of RF scanning, or autonomous mobile robots, which could be leased and off-hired as demand dictates.

Autonomous Mobile Robots (AMRs)

There is a difference between autonomous mobile robots (AMRs) and other forms of automation. Traditional automation, such as conveyor systems, tends to be fixed into position. It cannot be moved or scaled for demand. The same applies to autonomous guided vehicles (AGVs) which move goods from one point to another. While AGVs operate with autonomous intelligence, they are mostly guided along a fixed path by some guidance mechanism. Often, these devices cannot deviate from their fixed path, will stop when obstructed, and may require manual intervention before resuming operation. Additionally, because AMRs do not require guidance mechanisms, they can often be installed into an existing operation without any significant infrastructure modifications or operational disruption.

AMRs are the next stage of warehouse autonomous intelligence, taking on many manual movement activities such as intricate product picking, fulfillment and moving pallets. Unlike AGVs, they need little to no guiding infrastructure. By taking a digital map of their environment through sensors, cameras and embedded safety mechanisms, they move with very little need for guidance. They can even detect and move around objects, or take alternative routes with no instruction.

With a growing robotics-as-a-service (RaaS) market, there is no need for large expenditure, as DCs can lease then off-hire AMRs as demand dictates. Once the robotic application is installed, adding new robots can increase capacity in real time.

Potential AMR benefits

100%
Improved picker productivity during both peak and off-peak seasons

15%
Decreased overtime spend during both peak and off-peak seasons

80%
Reduced new hire and seasonal labor training

25%
Decreased errors and improved customer fulfillment

50%
Reduced operational expenditure

Voice technology

Voice technology has traditionally been used for picking processes, but is now finding use in applications including:

- Cycle Counting
- Replenishment
- Returns
- Put-away
- Goods Inspection
- Equipment Inspection

It works by sending verbal instructions to the operative. These are fed through a headset which is connected to a mobile device on their belt. They can confirm each step through a microphone in real time, before moving on to the next task. Through voice, they can work with their heads up and hands free, and without spending time recording data onto a clipboard or handheld device. In turn, it boosts both productivity and accuracy.

For seasonal workers, voice significantly reduces training time to just a few hours compared to what has traditionally taken 2–3 weeks. Through voice, they receive bite-size step-by-step instructions and can quickly achieve the proficiency and productivity levels of permanent staff. This fast-track training also extends to supervisors brought in specifically for seasonal peaks.

bluestem brands

Voice case study: Bluestem Brands

Bluestem Brands is the parent to 13 ecommerce companies. During peak seasons it can double its operations, adding around 60 workers to each of its two shifts. Training 120 seasonal workers to get up to speed quickly and productively has been a particular challenge. Through voice, Bluestem Brands has seen dramatic improvements in not only the training speed of seasonal workers, but also the quality of training, throughput and shift turnarounds.

It's an intelligent system, too. Within less than an hour, the technology can adapt to the user's unique language inflections. It also operates in over 30 languages.

Critical success factors

While the statistics are promising, it's important to recognize that technology will not solve a warehouse's seasonal challenges alone. Putting the right processes in place must come first. By understanding the process improvements that will best serve your requirements, and keeping an open mind, you can properly apply the technology that will fulfill those needs most effectively.

When implementing that technology, the provider you select should not only install it, but also take time to understand the ins and outs of your business, and make sure the new systems align with the needs of your operation. No two businesses are the same and there is no such thing as a "one-size-fits-all" solution.

It is important not to limit your options. As mentioned, voice technologies can be used for a range of applications such as cycle counting, replenishment and goods returns. In this way, you can gain both efficiency advantages and economies of scale. Similarly, you can apply AMRs to processes across the supply chain from goods receipt to final dispatch.

It's also important to remember that innovating your processes should never be a done deal. Only by re-evaluating over time, and making the necessary changes as your business evolves, will technology deliver the best results.

> "Technology and automation should work for you and adapt to you—not the other way around."
>
> **Peter LaGow**
> Senior Business Consultant,
> Voice, Vision, & Mobility

Why Infios?

- Our global presence means we can provide local support wherever you are located

- Our solutions offer you economies of scale should you wish to roll-out simulation, AMR or voice solutions across multiple international sites

- Our emphasis on process workflows means we drive results for your business

- Our applications are widely compatible with your key host systems and tailored for every company size, sector and case-use

- Our technologies are completely scalable to different degrees of complexity, allowing you to keep aligned with your evolving business needs

"Whereas traditionally a DC may have had to ramp up during peak seasons from 50 to 100 people for example, it could now achieve the same by adding 10 people and 10 robots."

John Santagate
Vice President Robotics

CONCLUSION

DCs starting to be faced with expanding B2B and B2C omnichannel distribution, increasing product lines, order diversity and goods returns. Each are making managing seasonal demand even more complex.

When used correctly, intuitive technology will streamline processes, scale operations up or down, handle more orders and fulfill customer demand whatever the circumstance, all with speed and efficiency.

Intuitive process technology will continue to adapt and become more versatile as we move into the future. For companies that want to evolve their operational best practices, there are no real barriers to entry and the investments are minimal against the results you can achieve.

Find out more
Infios prides itself on being a long-term partner for our clients, and as your business dynamics change, we are on hand to support your emerging needs.

To integrate the right mix of process technology so you can manage your seasonal demand, please visit our website:

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