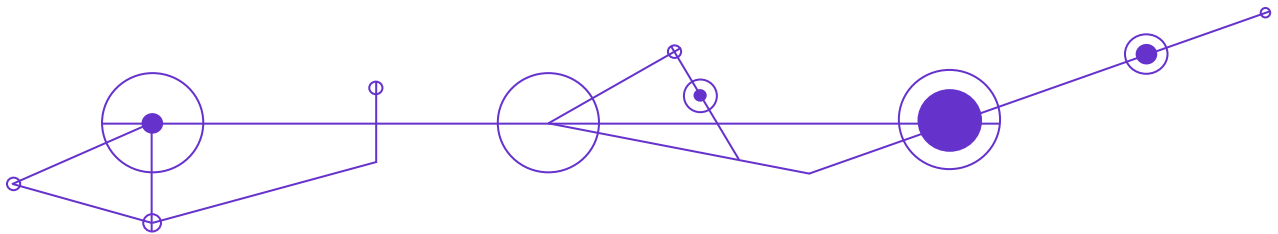


## Now for the hard part

The long return to a changed world presents a different set of challenges for grocers than managing the initial demand spike. **The best operators will use 'Practical AI' to adapt faster than competitors in the face of dramatic changes** to customer behavior and operational realities.



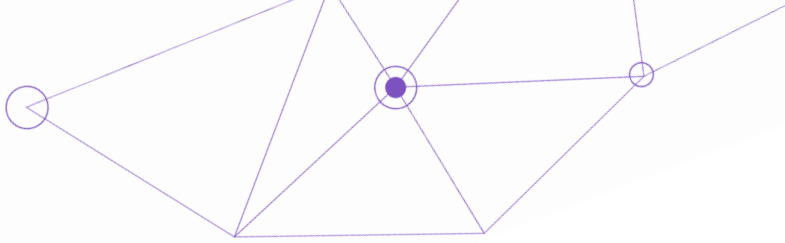
## Introduction

Grocers are in an unusual spot. As a collective, they have handled the significant demand increase resulting from the COVID-19 outbreak masterfully, hiring in large swaths to meet their labor requirements while diligently supporting the needs of their customers during a crisis.

However, most experts would agree we are largely through the first stage of this pandemic process. The initial spike in demand we experienced is tapering off, resulting in a period of deceleration. During this period, grocers need to manage their businesses effectively amidst declining and changing customer demand, which we anticipate will exhibit disparate patterns across different types of stores (e.g., rural vs. urban, hard-hit states vs. those experiencing minimal cases).

This will lead to a third ongoing phase – a new, more steady level of customer demand that will likely be quite different than it was before COVID-19. It will not simply revert to prior baselines due to significant and potentially lasting behavioral shifts initiated by the pandemic, with some observed examples being:

- Tripling of e-commerce grocery orders
- Decreased visit frequency but doubling of basket sizes
- Shift to value, store brand and comfort items
- Expanded and changed product offerings by grocers



As we see it, managing the second (deceleration) and third ('new normal') phases of this pandemic represent different, and potentially even harder, challenges for grocers. The initial immediate crisis phase lasted a few weeks and put a premium on 'do whatever it takes' solutions with cost not being a primary consideration. By contrast, managing the long recovery process will require a careful consideration of the normal economic realities of the business – e.g., staffing levels, inventory, shrink – during a period when demand will fluctuate unpredictably and then likely settle at very different levels.

We are fully confident that grocers will get this right over time. However, certain chains will adapt more quickly than others and will subsequently emerge from this crisis leading the pack in terms of financial performance. But adapting quickly will require that they change their decision-making approach to previously stable areas such as staffing and food production. This is where we see modern demand prediction software and sophisticated economic analysis becoming even more critical than before.

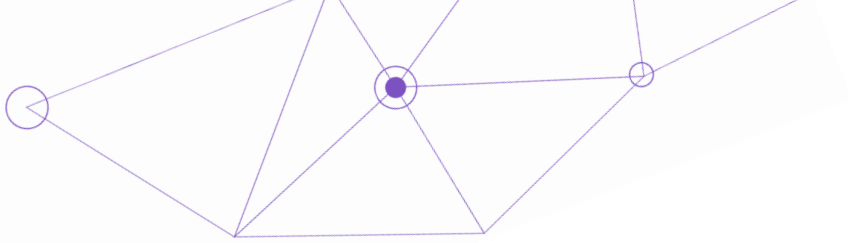
## 1000 for every 1

Profitability during phases 2 and 3 will still be heavily driven by core decisions that are made during normal and stable times, such as:

- How many people to staff, of what type, by department, when;
- How much of each product to order by store; and
- How much to produce by item for departments such as bakery and prepared foods

All of these decisions depend on predicting demand and making tradeoffs. Previously, this could be informed by years of relatively consistent historicals for each store, but this empirical data will become increasingly irrelevant in the face of the dramatic behavior changes initiated by the pandemic. So, does this mean managers need to operate in the dark until they have months of experience? Thankfully, no.

One major benefit of modern AI techniques applied to demand prediction is the ability to learn patterns not just within one store or SKU, but across many stores or SKUs, simultaneously. This type of analytical process can often detect subtle similarities between, say, all suburban stores or all stores located on a major commuting route. Modern AI tools can also learn which similarities matter to which patterns of customer demand and therefore do not need to artificially group stores into predetermined segments.



This approach is always useful in terms of improving prediction power, but it is particularly helpful now, with new demand patterns emerging. Instead of relying on each individual store to measure its new demand over months or years, grocers can deploy software to learn from every store in a network at once. Put another way, while one store can learn about new trends in customer demand one week at a time, a connected network of 1,000 grocery stores can learn and act upon 1,000 weeks of experience every seven days. This is a powerful advantage for those who use it.

Importantly, this doesn't mean that the most well-informed actions will come from some kind of 'one size fits all' solution, but rather that the best actions for each store can be customized based upon knowledge pooled from other similar stores.

Another major benefit of modern AI techniques is that they can be applied to understand critical economic trade-offs, such as the impact on total revenue of different staffing levels. During more stable times this was already useful as a way of optimizing the profitability of operational decisions, but it has become even more useful now to rapidly uncover across a system how different staffing or production levels impact revenue in a less predictable environment.

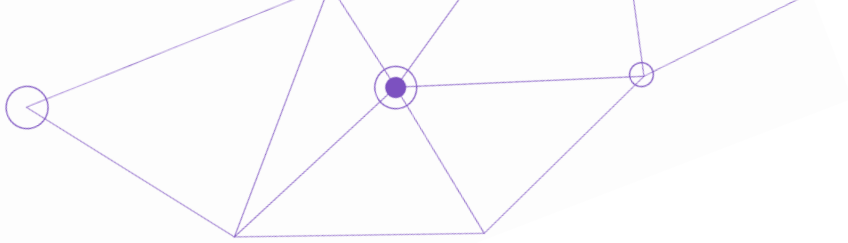
## Adapting faster with Practical AI

"AI" (Artificial Intelligence) has become one of today's most hyped buzzwords. And while catchy headlines about mechanical Jeopardy champions and algorithms developing paintings are entertaining to read, the greatest tangible business value being created by AI today is much more prosaic: software powered by the application of data and math that is designed to statistically improve key processes. We call these tools 'Practical AI.'

These tools have significant potential to help manage the difficult challenges of the current environment, but 'AI' is not something that magically works. In order to be practically useful to leading grocers' operations, our belief is that a few simple principles should be followed:

### 1. Focus on the high profit-leverage decisions

For grocers there are a few key decisions that tend to have the highest profit leverage, which include staffing, production levels in departments and inventory allocation.



These decisions are typically spread across hundreds or thousands of managers who previously could rely on their experience and institutional knowledge. This experience and knowledge is much less reliable now, yet making such decisions well or poorly will still be critical to profitability. Accordingly, focusing on how to support these individuals will be critical.

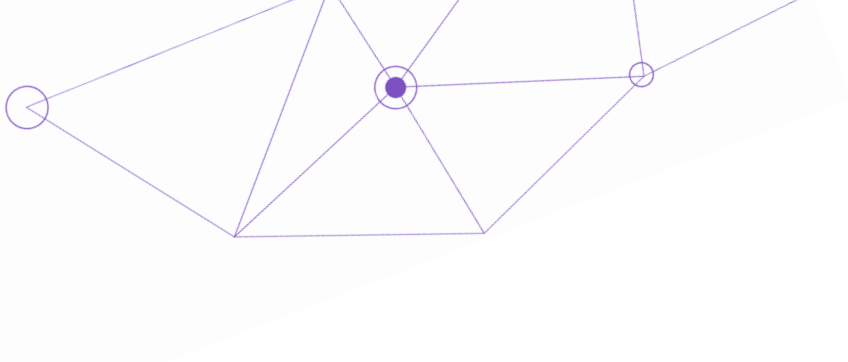
## 2. Ensure that processes are set up to learn and adapt as rapidly as possible

The factors driving customer behavior are likely to continue to change rapidly, which will put a premium on having the most responsive prediction technology possible. We believe that the following characteristics are critical:

- Tune tools to emphasize learning from the immediate past;
- Incorporate rapid feedback to identify where things are becoming clearer vs. where predictions and decisions are still poor;
- Set up tools to run their own exploration strategies to uncover new information even more quickly; and
- Ensure the highest cadence and shortest timelines are used for decisions where possible – e.g., moving from scheduling labor two weeks out to one week out, with more frequent interim updates

## 3. Bolt on support quickly, worry about integration later

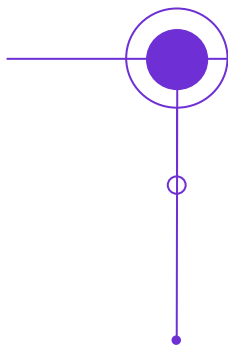
This is not the time for lengthy 18-month implementation plans. To be practically useful in this environment, any technology solution needs to be lightweight, flexible and able to connect to existing systems rapidly. Operational processes are still in flux and are likely to remain so, which means perfecting technical integrations is not as important as making sure that key processes get supported now and that this support can continue to be adapted. There will be a time to revert back and finalize technical integrations once stability has returned. The most effective companies will be comfortable applying a 'Minimum Viable Product' mentality to deploy profit-building tools quickly.



## Conclusion

Managing the difficult second and third phases of the COVID crisis will be a major challenge for grocers, requiring them to find new ways to make profit-critical decisions in an uncertain and changing environment. In stable times, legacy approaches may have been 'good enough' to manage these critical decisions. We believe Practical AI tools, applied the right way, can significantly improve the speed at which the most successful operators will be able to adapt and thrive.

Grocers who seize the opportunity to invest in the capabilities needed to help them manage these challenges now will also benefit from improved performance after more stable times return. At Predion.ai, we are pleased to be leading the development of software addressing these urgent needs and are happy to engage in dialogue about this, our organization more broadly, and the potential for collaboration.



### Now For The Hard Part

Predion.ai is a cloud-based software platform that combines a state-of-the-art forecasting engine with a sophisticated economic analysis engine to generate profit-optimized decisions for labor, inventory, fulfillment, pricing and production

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