

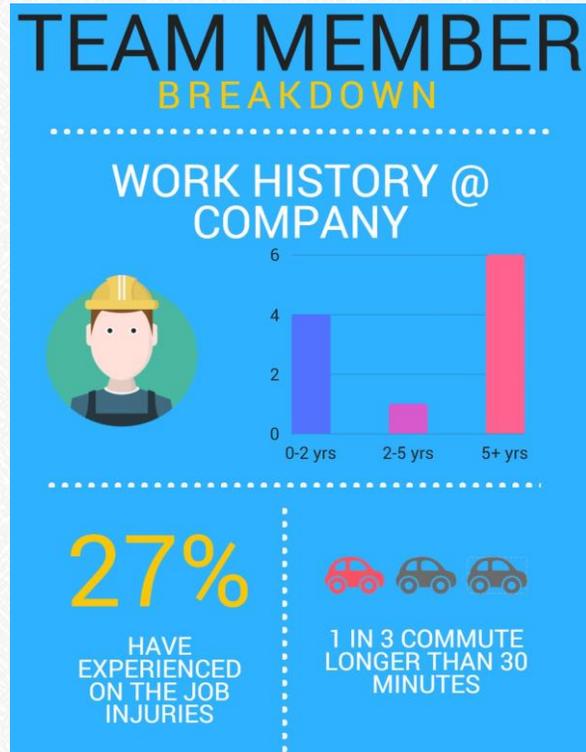


Regional Grocery Chain Case Study

Customer Profile:

Our customer is a supermarket chain that operates over 400 stores under the several different brand banners. Most of the chain's stores are located in Ohio and Pennsylvania, though the Company does have a small presence in West Virginia, Maryland and Indiana. The majority of supermarkets feature pharmacies, in-store banking, photo processing, dry cleaning services and floral boutiques. The Company has had a long history of valuing team member health and wellness, with stated Core Values that speak to this effort.

The chain's grocery stores are supported by 10 warehouse and distribution centers. Five warehouses are located in western Pennsylvania while the remaining warehouses are in the Northeast Ohio area.



Business Needs:

The safety and human resource leadership of the chain operate a multi-faceted workplace safety approach in their warehouses by utilizing corporate training programs with coaching from a 3rd party team of ergonomic coaches to provide 1-on-1 time. With these methods the warehouses have been able to drive down workplace injuries. However, as the digital revolution changes the market landscapes by increasing efficiencies, a new demand is created to drive costs down further and increase profits. From a safety and human resource perspective a few questions arise:

How can I continue to increase the health of my workforce while meeting production standards?

and

Current techniques have gotten us this far but how do we take the next steps?

Questions like these are what the Company's Director of Safety is answering in his various facilities. The operations require a tremendous amount of physical labor and with objects widely varying in both size and weight. These variations place greater stress on team members' ability to lift safely. With lifting-related back injuries making up a large portion of the warehouse injuries, the Safety Director decided to search around the industry for new and upcoming technology to help the business take the necessary next steps.

Problem and requirements:

- 1-on-1 coaching was effective however, but does not scale well.
- Solution must be easy to integrate into daily workflow and minimize interference with team member floor time.
- Majority of team members must like the platform and want to use it (adoption rate needs to be over 50% on a volunteer basis).
- Influence safety habits in daily life, as well as at work.
- Give transparency around issue of safe lifting and bring awareness to both the team members and supervisors.
- Cost effective to implement.

The Safety Director had also trialed other solutions, such as back braces, and discovered that team members found those solutions too obtrusive and uncomfortable to wear for long periods of time.

Solution:

The Company selected to implement a 2-month pilot project using the VIT Arc hardware and software platform.

3-Phase Pilot Project

1. Gather Baseline Data (3 weeks)
2. Haptic Feedback (4 weeks)
3. Data Sharing (1 week)

Regular contact with Team Members (1-2 days per week)

A VIT training team was assembled at 2 Company warehouse facilities: a dry goods facility and a perishable goods/refrigerated facility. The VIT trainers walked team members through an intro presentation around safe lifting practices, how the Arc device tracks lifting form, and how to use the devices in their daily activities.

The team members began by completing a baseline assessment period, which did not include haptic (vibration) or data feedback, in order to determine current risk levels. This period was followed by a 4-week haptic feedback phase, during which the device would vibrate when team members entered high-risk positions. Finally, team members entered an experimental 1-week data-sharing phase. By tracking the changes between baseline, haptic, and data-sharing, the Company can determine the effectiveness of the platform to reduce high-risk behaviors.

The system assigns each team member a safe lifting score designed to describe risk levels:

$$Safe\ lift\ score = \frac{SafeLifts}{TotalLifts} \times 100$$

Results:

Quantitative

Average Pilot Phase Lifting Scores by Location

Location	Baseline Score	Haptic Score	Data-Sharing Score
Dry Goods	52	69	67
Perishable	30	41	53

When considered total lifts across all team members, employees experienced a 53% increase in safe lifting score. Most team members experienced a modest increase (+0-15% increase), while select team members experienced significant increases in lifting score (+100-300%).

VIT also tracked work done as a function of total lifts. The Company found a decrease of numbers of lifts of 40% while having all the team members still hit their production numbers indicating a change towards more efficient lifting behaviors.

Qualitative

Team members were interviewed to discover the perceived causes of these results. The team indicated that there was a significant increase in lifting form awareness due to haptic feedback. Team members attempted to adjust to safer postures due to the feedback, but it became difficult to determine how effective these changes were over an entire day. Data-sharing increased the team's ability to analyze their efforts and make effective adjustments.

At the end of the 2-month pilot, VIT handed out surveys to the team members across various metrics.

Survey Feedback
(taken from 13 TM's and rating out of 5)

Comfort with tech	Ease of putting it on	Fit into the day	Noticed feedback	Caused a behavior change	Felt less likely to injure back*	Overall Rating
4	4.7	4.1	4.1	3.7	Y	4.3

* only able to ask 4 TM's this question: did they feel like wearing the device would reduce the risk for injury. All 4 TM's said Y for yes

The goal was to achieve on average a 4.0/5. rating and the team members scored VIT's solution at 4.3/5.0.

Some team members reported to their supervisors that they experienced reduced or eliminated back pain following the pilot. Team members also reported noticing phantom vibrations when away from work and performing lifting activities, indicating at least a short-term influence off the job site. With the VIT platform team members were more actively thinking about their lifting habits while at work, due to the act of wearing the devices and discussing among each other about the feedback and data.

Advanced Data Collection:

Following the conclusion of the pilot program, the Company and VIT engaged in an advanced study aimed at discovering the items and locations in the warehouses that induce the highest risk for injury. The VIT team analyzed the time-stamped lifting data alongside the Company's order tracking system data. The client had two goals for this study:

1. Identify high risk items and determine additional steps team members could take to lift them safely. These steps could include altered lifting habits or new assistive devices.
2. Identify high risk locations and determine additional steps by the facilities team to decrease risk at these locations. Locations may have different items over time based on inventory movement, so risk due to non-item related issues may be determined over time. The facilities team could alleviate risk by introducing assistive devices or undergoing re-design/replacement at affected locations.

VIT found that the items most often associated with poor lifting form were produce items, such as onions, apples, and yams. It is believed that this is due to the packaging of these items which allows significant changes in weight distribution during the lifting process and often lacks proper handholds. These items accounted for 5 of the 10 items most frequently lifted with unsafe posture.

VIT and the Company concluded that more data was needed to properly determine risk levels of warehouse locations.

Conclusion:

Working alongside the client, VIT was able to help reinforce the Company's safety culture and reduce unsafe lifting habits, thereby reducing the risk for injury. More importantly, the team members became more aware of their lifting habits and began the process of self-coaching. By having team members take safe lifting into their own hands, the Company can experience greater accountability across its organization.