A Case Study
Technological Change and Work Restructuring in the Retail Supermarket Industry

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Introduction

As Massachusetts’s manufacturing base has eroded, attention has turned to the service sector as a source of jobs. The retail sector, along with health care, makes up a significant portion of the projected job growth over the next several years. The retail sector is going through significant restructuring globally (changes in the supply chain), at a corporate or firm level, and at the level of workplaces and processes. Technological trends within the industry could drastically change the job picture both in terms of the number of jobs and the quality of jobs that are available. Stiffer competition has been generated by the growth of big box retailers such as Sam’s Club, Costco, Target, and especially by Wal-Mart and Wal-Mart’s super centers. According to a consultant in the industry, “Wal-Mart pervades every decision that’s made by grocery distributors today”\(^1\).

In search of increasing productivity, the supermarket industry is escalating its use of automation as a means to reduce costs, especially labor costs, and exert greater control over its workforce. The automated transaction computer that arrived first in banking as ATM’s and has now invaded airports in the form of automated check-in terminals is increasingly seen in retail stores, including supermarkets. Behind the terminal is a computerized inventory and ordering system that affects jobs not only in the retail store, but all the way back through the supply chain. Changes in the work process, technology and human resource/labor relations practices have altered this picture significantly. With increasing automation, increasing part-time work and higher turnover, and rampant de-skilling, the collective experience is waning, which in turn affects relationships both in and outside the workplace. Radio frequency ID tags (RFID) have the potential, as the prices drop, to fundamentally change the shopping experience and the role of the retail workforce.

All these changes have a great impact on the number and quality of jobs, but also on the unions’ ability to effectively organize and resist. At this point, the mechanisms for collective input by the workforce into these changes simply don’t exist. The United Food and Commercial Workers (UFCW), the Teamsters and other unions have been struggling to maintain wages, benefits, and other conditions of employment within the retail sector, but have not yet been able to insert a collective voice into these broader discussions of technology and work organization. Contributing to this problem is the decreasing union density in the industry.

This paper will describe technological and related changes in Stop and Shop supermarkets, based on interviews with union leaders in Eastern Massachusetts. It will further examine two warehouse and distribution centers (one for Shaw’s, one for Stop and Shop), based on interviews with union leaders and a tour of the Stop and Shop facility. The paper will broaden the experiences of the workers with a brief summary of some literature on the industry.

\(^1\) “Grocery Distribution: From the DC to the table”, in the October 2005 issue of Modern Material Handling.
Warehouse and Distribution Centers

Shaw’s Distribution in Methuen, Massachusetts

About 400 workers are employed at the Shaw’s warehouse in Methuen, Mass. This warehouse and distribution center (DC) supplies perishable food for Shaw’s supermarkets in Massachusetts. The only unionized distribution center for Shaw’s in Massachusetts, the DC runs on 3 shifts, employing almost all its workers full time, with only about 5 or 6 part time workers. About 40% of its workers are Latinos, mostly working 2nd and 3rd shifts.

KEY TECHNOLOGIES AND AUTOMATION: Introducing “Voice Tech”

About 18 months ago, management at the warehouse began to introduce the “Voice Tech” technology. The Voice Tech system is made up of small wireless computers with headsets which communicate back to a computerized ordering system. This new technology replaces the old system, where workers would receive their assignments by paper with bar codes. “Selectors/pickers” receive their assignments electronically through their headset. Assignments are given step-by-step, with a selector going to the appropriate section and picking the number of boxes, then speaking into the headset to confirm that an order has been completed, thereby generating the next command. For example, a selector may be told to pick 20 boxes of mushrooms. He would go to that section, repeat the “code” to the machine – which would confirm that he was in the right place – and select the boxes onto his forklift. Only then would he receive his next assignment, which might mean backtracking or selecting a heavier product, which would then have to be placed over the lighter mushroom boxes.

The industry promotes the increased accuracy of the Voice Tech technology. Methuen workers believe that there now may be fewer errors, due to the electronic checking, but think that productivity may actually be reduced. The time standard is set by an outside company, LXLI, requiring workers to work at “reasonable expectancy”. LXLI’s website advertises that: “Our clients experience increased productivity – methods to making everything you do work better. . . We measure productivity through the practical and systematic approach of Scientific Time Management and increase performance with the techniques of Work Measurement and Methods Engineering.”

IMPACT ON THE WORKFORCE

The Voice Tech system enables management to keep track of exactly what workers have done, what is left to be done, and where they are at any point in time. This increased surveillance is supplemented by a new video camera system with 118 cameras throughout the warehouse, monitored by 2 security guards. This system can be used to discipline workers, although Methuen Steward Jim Porter thinks it could also be used to exonerate workers, “unless management erases the relevant tape”). He notes that management does not hold itself to the same standard – there are no video cameras in their offices.

The headsets prevent workers from being able to talk with each other as they work, both about how they feel about the changes in the workplace, but also about their lives. This is perhaps one of the biggest changes from the old system, and has big implications for building the union in the workplace. In the words of a supermarket industry analyst, “If you’re picking to paper, you can talk to your friend about baseball without the system waiting for you.”

The inability of workers to talk informally at work inhibits the group-building aspect of the workplace, as well as their ability to discuss collective strategies to solve the problems.

A further consequence of this new system is to further “de-skill” the jobs. With the old system, workers were able to exert some decision-making over their workday, and could apply their knowledge of the locations of the products, and their experience of how best to “build” a pallet. For example, they were able to “scoop” heavier boxes on their way to a selecting an item that was at the top of the list. Now workers don’t receive the next assignments until they have completed picking the earlier assignment, regardless of the location or the weight of the product. This planning function, as limited as it was, is removed with the new system. De-skilling and reducing training time is clearly one of the goals of the automated system. The director of marketing of Vocellect, a company making the voice technology systems, states that “Operating training time is another important benefit of voice directed technology. We’ve been in facilities where new operators were trained on the system in a couple of hours, compared to a week or more to train them to use a paper-based or bar code based system.”

The system also extends the workday a bit. Workers must work until the Voice Tech switches off just minutes before the end of the shift – instead of the old system when workers stopped work when they completed an assignment. And leaders at the center wonder about the impact on seniority and disability issues. Once Voice Tech is fully implemented, union stewards wonder what will happen to workers whose hearing is not as good – including older workers with high seniority.

**Fully Automated at the Stop and Shop Distribution Center**

While this system is not fully operational yet at the Shaw’s warehouse, the **Stop and Shop Distribution Center in Freetown, Massachusetts**, is much further down the road, having built a fully automated distribution center. This center employs about 1000 workers – many who had worked at the former, smaller warehouse in Readville which closed. These workers have been joined by some new workers from the Southeastern Massachusetts region (including some for whom English is not their native language, about 15% Spanish and Portuguese, and increasingly some Cambodians.) The former Readville DC had only handled produce and was highly manual – using lift trucks and a paper-based pick system. The new center is a huge, state of the art distribution center (designed by HK Systems); a 24 hour facility, dealing with both perishables and non-perishables. The cost of building the facility was about $250 million (according to a manager at the facility); and for which the company was able to get lots of tax breaks from the town, promising to provide new jobs for area residents. The Distribution Center has an expanding service area, serving Massachusetts, Rhode Island, Southern New Hampshire and part of Connecticut.

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4 “Grocery Distribution: From the DC to the table” in the October 2005 issue of *Modern Materials Handling.*

5 Ibid.
According to a manager providing a tour of the facility, this new automated center is part of Stop & Shop’s strategy to increase its profits. Initially, automation was not part of the plan. But management realized that the old manual distribution model would result in an increased workforce over time. By investing upfront in an automated facility, Stop and Shop could increase the volume of the work with higher productivity of the remaining workers and reduce its costs. The increase in the number of workers in the new facility is the result of the shift of distribution from other distribution centers to the new one.

The new Distribution Center (DC) developed an automated storage and retrieval system (AS/RS) that “significantly reduces the labor required to handle non-perishables and perishables for hundreds of stores.” The same workforce as needed at the previous facility now handles 40% more volume. The integrated systems (warehouse management systems (WMS); automated storage and retrieval systems (AS/RS); voice-directed picking; wireless terminals, planning software and procurement systems) used in this facility direct activities from purchasing to planning and execution in the DC and delivery to the stores. For the company, the new warehouse increases inventory control, and turns over the entire inventory in 12 days for non-perishables, less for perishables. Greater inventory control is necessary, according to an article in an industry magazine, because customers want more variety and “grocers are fighting the battle on selection and services…[having] ramifications for the distribution center.” Stop and Shop chose the strategy of consolidating operations into one central facility where “automation can drive out cost without sacrificing customer service”.

All workers use the “Voice Tech” technology, which is programmed to the individual worker. When the “selectors” arrive in the morning, they pick up their own individual unit. The computer in the unit recognizes the workers voice, including recognizing the native language of the worker, though it responds in English only. All instructions and work assignments are automated as described in the Shaw’s warehouse example. The assignments are set by a time standard in Freetown as well. Neither the union nor the company sets the time standard; the standard is set by an outside firm. The Teamsters pointed out that they oversee this standard and will challenge it if they believe that there is a discrepancy or inaccuracy in the standard. Given that the company setting the standard is an outside vendor, the ability of the union to challenge the standards is reduced. This is a common trend seen in retail and other industries where working conditions and issues in the workplace are increasingly determined by decision-maker that the union does not negotiate with directly.

The Freetown DC goes further than Methuen, with a “smart crane system” doing the storing and placing of incoming products and “picking” the products from the storage shelves to create a “floor pick location.” This system eliminates jobs which were previously done by workers (“pickers”). The union was involved in negotiating over the loss of that position, but the end result was the loss of a skilled position. The union has also lost maintenance and repair jobs as the manufacturers of the cranes fix the machines, not union workers. The Teamsters are involved in negotiations to make these union jobs in the future.

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6 From “Stop and Shop’s fresh approach” article; http://baan.ittolbox.comn/common/print.asp?i_133522
7 “Grocery Distribution: From the DC to the table,” Modern Materials Handling, October 2005.
The impact on the workforce of this automation is very similar to that of the Methuen situation. With the system enabling management to know where all workers are at all times, there is increased surveillance leading to more stress on the job. If workers don’t meet productivity standards, they face discipline. There is less communication between the members in the workplace, and with workers on three shifts, communication outside work is more difficult as well.

**At the Supermarket**

**KEY TECHNOLOGIES AND AUTOMATION**

A group of stewards from Stop and Shop supermarkets shared some of the changes that they have seen. Automation began decades ago with the introduction of register scanners, beginning the deskilling of the workforce. Cashiers no longer had to know the price of a product, or how to make change, as the machine did it for them. According to our informants, this process continued with the introduction of newer technologies, including:

1. **Self-scan registers** (begun in 2002) where the customers scan their groceries themselves, typically four per store with one cashier monitoring and assisting the customers. These have already eliminated jobs.

2. The introduction of two types of Scanners with shopping carts:
   a. **A carriage-mounted scanner** enabling customers to scan items as they put them into bags in their cart. This eliminates both the cashier and the bagger. At least one store in Massachusetts has cart-mounted scanners.
   b. The “Shopping Buddy,” which has been used for the past two years in a Swampscott store, is a wireless computer attached to shopping carts that allows customers to e-mail their grocery list to the store and call it up on their cart’s screen. The "Shopping Buddy" also lists what shoppers bought on their last trip, notifies them a product is on sale as they enter the aisle, where it’s stocked, creates personalized coupons as they approach an item and allows customers to place a deli order and get a message when it’s ready. Ultimately, these “personal shopping assistants” will allow shoppers to pay at the cart.

IBM, which is creating the carts’ computers, forecasts that they might cost between $2,000 and $3,000. Compared to the price tag for regular old supermarket carts at about $100 each, Stop and Shop must anticipate cutting considerable costs in labor.

3. **Computer Assisted Ordering**, CAO, which takes information scanned in at the register and sends the message that, “the store is half a case down of this item.” This eliminates the night crew guys making their own orders. There are still glitches in the system and it’s not fully integrated yet, but plans are to work out the glitches and fully integrate in the future.

4. **Vendors are paid electronically now.** There are no invoices; on 70% there is no paperwork. An electronic bill is sent to headquarters.

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OTHER CHANGES IN THE WORK OR ORGANIZATION OF WORK

1. Elimination of item pricing – frozen food especially, reducing the number or workers labeling products with prices. State law requires item pricing but allows the supermarket to exempt 400 items. They often exempt items with a lot of individual units, like a six-pack of soda.

2. Automated phone line – customers call in and get a menu of options (different departments). The Service Department is at the end of the list.

3. There’s a computerized job application – you fill it out, there are some tricky questions, the store manager clicks on it and if you don’t get a “smiley face”, you’re out.

4. Outside vendors taking over aisles and cutting into union work. For example:
   - Staples will take an aisle with their products and stocks the entire aisle in new superstores.
   - Boars Head or other independent contractors service their own products. Boars Head bribes deli managers to push Boars Head product. They’re very aggressive: when a union worker or business agent isn’t around, they put up their stock. If the union representative brings it up with the deli manager, they say, “They’re helping me get my job done,” and since the company is understaffing the deli counter…
   - Arnold Bakery goes right to the shelf now.
   - Imperial works eight hours in the store.
   - In Plymouth there’s an Asian food section that’s a restaurant.
   - There’s no more closed shop. The vendors are working 50-60 hours a week and killing our jobs. The general manager wanted to set aside one aisle for “manager training” and these “trainees” have been in there for two or three years.

5. **Automatic vendor tracking and payment**. Vendors go right to the aisle, they don’t check in with a receiver. Vendors get paid by what gets rung up at the register and if there’s a loss, the vendor and the store split the difference.

6. **Increased monitoring of workers** – at the checkout line and in the parking lot.
   - Cameras in the lot can focus right in on your wallet. One worker went through the register line without checking out a couple of items. The union viewed the videotape which showed that when she got to the parking lot and opened up her wallet and pulled out a dollar bill, it was possible to see George Washington’s face on the bill!
   - The store is completely covered by cameras and the new security systems save all the tapes on hard drives.
   - Every transaction a cashier makes on every register can be tracked. There’s a “shrink track” so that management can flag things that’ll lose them money – i.e. if a cashier takes too long between waiting on customers or scans in too many coupons. Management can track the cashier from register to register.
IMPACT ON THE WORKFORCE

- Monitoring leads to increased stress
- Fewer workers results in intensification of the work and increased stress
- Increased isolation
- De-skilling of the job and decrease in ability to have control over the work
- Workers are now just a cog in the system which can be moved from place to place

IMPACT ON THE UNION

Most of the technologies described above have resulted in fewer jobs and an increase in part-timers. With less skill needed, and workers functioning as extensions of machines, management has no need to hire and keep a full-time workforce. Union members described the following impacts:

1. Changes are being implemented without bargaining with the union. Self-scanning trials and rollout happened in 2002. The union asked for a list of stores where rollouts were planned and the company gave them a list mostly after the fact.

2. With management working, vendors working, and automation, union membership is shrinking. For example, one store used to have 300 union members and now is down to 122.

3. Part-timers are losing hours and they depend on hours.

4. The number of part-time workers has increased. The full-time to part-time ratio was 60 or 70 to 40 or 30; Purity was 50-50. It’s now possible to go through a whole day and not find a full-timer in the store. Some stores have cut part-timers down from 15-20 hours a week to 10 hours per week, especially if they’ve been there a long time and their wage level is high.

5. Turnover is higher than ever. The new people are mainly part-time cashiers and night crew and they come and go. Two contracts ago, the night crew full-time to part-time ratio was four to one.

6. Automatic vendor tracking and payment will eliminate receivers.

SUMMARY AND CONCLUSIONS

While the picture painted by the workers interviewed for this paper is not a pretty one, there are some things that the unions can do, many of them following the recommendations in the postal (and health care) paper.

Strategies
- Research management's goals, the new technologies and work reorganizations they plan to introduce, and their next steps. A good source is the industry media.
- Educate the union members to call up workers' intimate knowledge of the changes they are experiencing, integrate it into a picture of the whole system, and identifies points to organize around.

- Bargain with management over every change in work processes and gain some influence over them.

- Educate the public. Many of these changes are pitched as being more convenient and offering a better quality of life for consumers. (And when the store cuts down the number of cashiers, of course the lines are shorter at the automated checkout line!) A recent op-ed in the Boston Globe challenged customers to think about how the technological development in taking away jobs and asks that “Customers, who are to care, should refuse to use these lines beginning now.”

- Organize unorganized companies and rebuild union density in the retail industry.

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