**Analysis on Shelf-Labels**

**at Shoppers Drug Mart**

for

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**Introduction**

Shoppers Drug Mart (SDM) is a pharmaceutical and retail chain owned by Loblaw with over 1000 stores located across Canada (*Our Company*). In retail, an important factor that determines whether a customer purchases a product is the price. As such, shelf-labels play the crucial role of communicating prices to customers.

At SDM, shelf labels are simply label paper held in place by a plastic cover, and the maintenance of the paper label system may be an issue. With each new product addition, removal, relocation, or adjustment, the respective labels must also be added, removed, and adjusted accordingly. This label update process requires a significant amount of time and is also susceptible to human error because they must be manually changed.

In the event of an error, SDM experiences losses in multiple ways:

* Shelf label errors reflect incompetence onto the store
* Both customer and employee time are wasted while verifying price-label differences
* Scanning Code of Practice entitles customers to receive additional discounts, further compounding losses for SDM

What is the Scanning Code of Practice (SCOP)?

A code resulting from the collaboration of the Retail Council of Canada (RCC), Neighbourhood Pharmacy Association of Canada, and the Canadian Federation of Independent Grocers (CFIG) that attempts to improve customer relations by emphasizing accurate scanner pricing. An excerpt from a Scanner Price Accuracy Code ticket is as follows:

If the scanned price of a non-price ticketed item is higher than the shelf price, or any other displayed price, the customer is entitled to receive the first item free up to a $10 maximum. If the item is more than $10, the customer is entitled to $10 off the lowest advertised price (“Scanner Price Accuracy Code”).

One possible solution is to switch from paper shelf-labels to electronic ones. With the text being configurable for each electronic label, product prices and labels could both be modified to reflect the corresponding product. In the case that multiple SDM location have electronic shelf-labels, all labels could be centrally managed, ensuring consistency across all store locations. Additionally, without the need to print thousands of labels for products, electronic labels are an environmentally friendlier option compared to their paper counterparts.

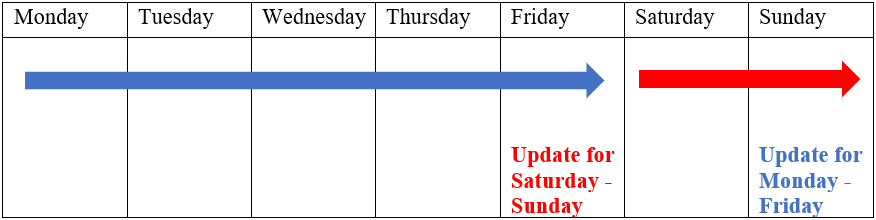
The purpose of this report is to investigate the paper shelf-label system at SDM and determine if electronic shelf-labels are a suitable replacement. To do this, the report analyzes information gathered from SDM employees along with information researched from reviews of electronic shelf-labels. This report discusses the current state of the paper talker system, advantages, and disadvantages of both the paper and electronic shelf-label system, along with customer and employee preferences.

**Data Section**

**The Current State of Shelf-Labels at Shoppers Drug Mart.**

Shoppers Drug Mart (SDM) currently uses a paper shelf-labelling system. The update cycle, maintenance, advantages, and disadvantages are discussed below.

**The update cycle at Shoppers Drug Mart.** During an interview with a SDM supervisor, the following information was obtained. SDM shelf-labels are normally setup to work in a 5+2 day cycle. For Monday through Fridays, new product prices are set in the pricing system, and their prices are reflected in-store by adding and removing talkers (stickers placed over shelf-labels used to capture a customer’s attention). These talkers are red in colour and are most commonly used to communicate that the product is for sale by showing both the original and sale price. On Friday evenings, another wave of product prices are updated in the system for Saturday and Sunday; and likewise, another wave of talkers must be added or removed for each product price change (Lam, Vincent. Personal interview. 15 November 2020.). Figure 1 shows the weekly price change schedule below. (!!!add pictures of labels and or talkers?)



**Figure 1.** Weekly Price Change Schedule at Shoppers Drug Mart. Arrows represent the duration of the price change. Colours used to emphasize the 5+2 cycle.

**Maintenance of the paper shelf-label system.** During the weekly changes, SDM employees are responsible for three key tasks: removing expired talkers, printing the updated prices onto new talker stickers, and sticking the new talkers onto the corresponding shelf-labels of each product (Lam, Vincent. Personal interview. 15 November 2020.). According to an assistant store manager of SDM, employees of SDM can expect to spend approximately 3 – 5 hours on Friday shifts and 30 – 60 minutes on Sunday shifts performing talker updates on product shelf-labels. Occasionally, the Friday updates are so large that they require additional time from Saturday morning shifts to fully complete (Bui, Madeline. Personal interview. 19 November 2020.). In terms of paper consumption, each round of talker updates usually requires 50 – 60 pages of special sticker paper (Lam, Vincent. Personal interview. 15 November 2020.). This implies that a single SDM store can easily go through 100+ pages of sticker labels per week.

Approximately once per quarter, SDM changes the layout of products in select sections (oral care, first-aid, candy, etc.). Sometimes this change is made to accommodate the introduction of a new product, removal of an old product, or to simply shift existing products into a different location for efficiency or presentation purposes. These quarterly changes typically cover half the store at a time (about 10 sections) and requires adjustment of each affected shelf-label as well. As such, SDM often uses this opportunity to update the base price of products. Since the shelf-label itself is a much smaller piece of paper, roughly 15 pages of label paper are used to complete the quarterly update. However, the time required for this change is much longer than the average weekly cycle, about 20 hours of work for the entire process. (Wong, David. Personal Interview. 17 November 2020.).

**Advantages of the paper shelf-label system.** While there are not many advantages of the current system, they do exist. The current system is easy to understand, teach, and use. When new SDM employees are hired, training them on updating shelf-labels is as simple as sticking and removing talkers on existing shelf-labels. Additionally, the use of talkers in itself is a feature of the paper system. Because the labels are covered by a plastic covering, talker stickers can be used to indicate temporary price drops and removed when the sale is over (Bui, Madeline. Personal interview. 19 November 2020.).

**Disadvantages of the paper shelf-label system.** As mentioned previously, major weaknesses include the need to manually update each shelf-label or talker, the significant time cost, paper cost, and human error. Additionally, although the use of talkers allows shelf-labels to reflect price changes relatively quickly, each successive talker leaves residue on the plastic cover, decreasing the visibility of the original shelf-label (Lam, Vincent. Personal interview. 15 November 2020.).

**Table 1.** Overview of Advantages and Disadvantages of the Current Shelf-Label System.

|  |  |
| --- | --- |
| Paper Shelf-Label System | |
| Advantages | Disadvantages |
| * Easy to understand, teach, and use * Can use talkers to quickly reflect product sales | * Manual process * Significant time cost * Paper cost * Subject to human error * Sticky residue |

**A Digital Alternative: The Electronic Shelf-Label System**

The proposed solution in this report calls on the use of an electronic shelf-label (ESL) system. Instead of using paper labels, ESLs utilize an LCD or E-ink module to display product information to customers. The advantages and disadvantages are discussed below. (!!!add picture?)

**Advantages of proposed electronic shelf-label system.** There are many advantages of electronic shelf-labels (ESLs), some of which are model-specific features; however, the basics tend to always include: reduced manual labour, reduced paper waste, and consistent pricing across the store system, point of sale, and shelf-label (Chalberg). Depending on the model of ESL, other advantages could include: inventory tracking, central management of all SDM product prices, customer data collection, product finding, and much more (Chalberg; Lynn; Swedberg). The list of advantages can vary and extend so far that it would be beyond the scope of this report to determine which model SDM should consider. Perhaps the largest benefit that merits reiteration is the reduced labour cost. With every price change, the cost of paying a SDM employee to spend hours updating talkers or shelf-labels is reduced to near zero. Over time, this compounds into a return on investment measured upwards of 400% over 5 years (Valk). Furthermore, the many hours that employees normally spent on updating shelf-labels and talkers could then be put into customer service, loss prevention or other duties.

**Disadvantages of proposed electronic shelf-label system**. Despite the numerous advantages, a switch to an ESL system still includes disadvantages. The initial investment is undoubtedly high. Although no amount of research could reveal a number or rate for replacing paper shelf-labels with ESLs, multiple sources have hinted that the period at which ESLs tend to pay themselves off is about 12 – 16 months (TRUNO; Valk). Another disadvantage is error propagation. As an extension of being centrally managed, should a pricing error occur for a product within the central system, that error would propagate to all ESLs corresponding to the product. Finally, as with any change, it will be necessary to retrain staff on using the new technology of the ESL system (Mertlich).

**Table 2.** Overview of Advantages and Disadvantages of an Electronic Shelf-Label System.

|  |  |
| --- | --- |
| Electronic Shelf-Label System | |
| Advantages | Disadvantages |
| * Reduced manual labour * Reduced paper waste * Consistent pricing information * Inventory tracking * Central management * Data collection * Product finding * Much more | * High initial investment * Error propagation * Retrain staff |

**Customer and Employee Preferences**

The examination of customer and employee opinions should also be considered prior to SDM selecting between paper or electronic shelf-labelling systems. Below are the results from analyzing survey responses from the two groups.

**Customer Opinion.** When asked about the visibility of the paper shelf-labels, 12 out of the 24 respondents selected “easy to read” with the other half choosing “sometimes difficult to read”. Meanwhile, of the 21 respondents who have visited a store with ESLs, 16 responded with the ESLs being “easy to read” and the remaining 5 choosing “sometimes difficult to read”. A possible explanation for this readability difference is perhaps the sticky residue left behind from talkers on the paper shelf-label system.

Finally, when given the option of shopping in a store with paper shelf-labels, electronic shelf-labels, or no preference, 2/24 chose paper, 10/24 chose electronic, and 12/24 had no preference. Figure 2 visualizes the preference results below.

**Figure 2.** Pie Chart of Customer Shelf-Label Preference Responses.

**Employee Opinion.** The employee survey results follow a similar trend to the customer results. When given the option between having paper shelf-labels, electronic shelf-labels, or no preference, not a single employee chose paper. 11 out of the 13 chose electronic and the remaining 2 did not have a preference.

This can perhaps be explained from the results of two other survey questions. The employees were asked how often they encountered incidents regarding shelf-labelling inaccuracies within a week and were given the following options:

1. 0 incidents
2. 1 – 2 incidents
3. 3 – 5 incidents
4. 6 – 10 incidents
5. 11+ incidents

Additionally, the employees were asked how many hours they worked per week with the following options:

1. 4 – 7 hours
2. 8 – 16 hours
3. 17 – 24 hours
4. 25 – 32 hours
5. 33 – 40+ hours

Due to the nature of the survey questions, precise averages would be impossible to calculate, but averages at the low end (using the upper limit of hours and lower limit of incidents) and high end (using the lower limit of hours and upper limit of incidents) can be calculated. Using the gathered information, which is also visualized below in Figure 3, the incidents per hours worked can be concluded to be somewhere between 0.132 and 0.275 incidents per hour. In terms of an 8-hour shift, this equates to roughly 1 – 2 incidents.

**Figure 3.** Relationship between hours worked and number of incidents involving shelf-labelling inaccuracies.

**Conclusion**

**Summary of Findings**

The main advantages of paper shelf-labels are ease of use, understanding, and teaching, along with the use of talkers to indicate sale prices. The disadvantages include being a manual process that requires significant time and paper cost, subjection to human error, and the sticky residue from talker stickers that can affect shelf-label visibility.

On the other hand, the main advantages of electronic shelf-labels include a massive reduction in manual labour, reduced paper waste, consistent pricing information, inventory tracking, central management, data collection, product finding, the ability for staff to allocate time to other more important duties, and much more. The disadvantages of ESLs are the high initial investment cost, need to retrain staff, and the possibility of error propagation.

Customer surveys show that the vast majority either prefer ESLs (12/24) or do not have a preference (10/24); only 2 out of 24 customer respondents prefer paper shelf-labels.

All SDM employees surveyed either prefer ESLs (11/13) or do not have a preference (2/13); no SDM employee prefer paper shelf-labels.

**Interpretation of Findings**

Although switching from paper shelf-labels to ESLs would require a high upfront cost, each year after the first adds to the compounding return on investment. Moreover, the many disadvantages of the paper system become advantages in the electronic system while still retaining the old strengths. While ESLs still have disadvantages, both the high initial investment and need to retrain staff quickly disappear with time, and the possibility of error propagation is as simple as fixing the root of the error.

With widespread approval from both customers and employees, SDM should consider the switch from paper to an electronic shelf-labelling system.

**Recommendations**

Given the many limitations of this report:

* Small sample sizes
* Samples sources from a single SDM store
* Inability to find accurate figures for the initial investment,
* Current pandemic limiting information gathering from individuals working in stores with ESLs already installed

Consider the following suggestions:

1. Perform a similar research report with a broader sample source and size using this pilot study as a template
2. Should that larger study have similar findings and conclusions, begin researching potential ESL candidates to implement