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Workplace safety trainers: staying agile in the midst of a pandemic

Anthony McCreery wrote this case under the supervision of Julie Gosse solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

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It was Sunday evening on May 24, 2020. Clarissa Wang, senior business analyst at Workplace Safety Trainers (WST), was working yet another weekend. Operations at WST had been greatly affected by COVID-19 throughout all aspects of the business. Wang had decided to source personal protective equipment (PPE) from overseas and was now adapting the systems at WST to handle the massive influx of demand. Wang was evaluating numerous investment alternatives that she imagined would increase efficiency while maintaining the necessary safety precautions to protect workers at the shipping and logistics office.

**COVID-19**

Severe acute respiratory syndrome coronavirus 2, the coronavirus that caused the disease widely known as COVID-19, was first discovered in late 2019. On January 27, 2020, the first reported Canadian case of the novel coronavirus was confirmed in Toronto, Ontario.[[1]](#footnote-1) Soon after, on March 12, the National Basketball Association postponed its season, alongside many other sporting leagues. Universities, schools, and offices quickly began to shut down, implementing a work-from-home policy. In late March, Canada had tightened restrictions on travel, closing the Canada–US border. The Ontario government demanded that residents stay isolated, with penalties and fines applied to gatherings in excess of five people. By May 23, 2020, Ontario had eclipsed 25,040 confirmed cases of the virus.[[2]](#footnote-2)

The economic impact of the virus was wholly represented in the plummeting stock market. Within a month, the S&P/TSX Composite Index, the primary gauge for the Toronto Stock Exchange, fell by over 37 per cent from the historic highs seen in February.[[3]](#footnote-3) By May 23, the stock market had rebounded slightly, but businesses all over Canada were still struggling to maintain profitability. The cessation in operations for many businesses had resulted in a real gross domestic product decline of 7.5 per cent in March and 11.6 per cent in April.[[4]](#footnote-4) With many businesses unable to stay open, in April 2020, the workforce suffered a drop in employment of nearly two million workers, adding to the roughly one million workers who had lost their employment in March.[[5]](#footnote-5) Many of these personnel were furloughed, meaning they had been laid off temporarily so that the company could avoid bankruptcy and stay in operation. The government was forced to step in, using federal aid to support families and businesses. Emergency wage subsidies and interest-free loans were granted for smaller businesses to help companies keep workers on their payroll.

**WORKPLACE SAFETY TRAINERS**

WST was a small business based in London, Ontario, with additional offices in Mississauga and Cambridge. The company provided workplace health and safety training to the public, both online and in class. Classes ranged from instruction in the safe operation of a lift truck to joint health and safety committee certification training. WST also offered consultations for businesses to help improve their safety programs. Overall, in-person training accounted for roughly 70 per cent of WST’s business.

WST also sold physical goods and products. One of WST’s highest-selling products was a mandatory book for Ontario businesses that outlined legislation about workplace health and safety. More recently, the company had started to sell safety supplies. Products such as automatic external defibrillators and first-aid kits were sold across Canada and to the United States. These safety supply products generated close to CA$70,000[[6]](#footnote-6) in sales in 2019.

Before the coronavirus, WST had close to 70 people on staff. These employees included trainers who hosted in-person training and evaluations, curriculum developers who created course content, web developers who ran the online store, and marketing analysts who generated demand. The shipping and logistics department was in charge of sourcing, warehousing, and shipping physical goods.

**CLARISSA WANG**

Wang was hired at WST in August 2019, primarily to source physical goods for the shipping and logistics team. Wang was a graduate of the master of business administration program at Ivey Business School at Western University. Before beginning her work at WST, Wang had worked as a consultant in Toronto, Ontario. Alongside these accomplishments, Wang was fluent in several languages including French, English, and Mandarin, which allowed for ease of communication with international suppliers.

The IMPACT OF COvid-19 ON WORKPLACE SAFETY TRAINERS

Along with the many other businesses that were forced to scale back operations as a result of the coronavirus pandemic, WST was forced to stop all in-person training for the first time in the 20-year life of the business. This meant that WST temporarily lost an income stream that accounted for 70 per cent of its revenue. With the uncertainty surrounding the pandemic, WST was forced to place half of its employees on a COVID-19 shortage-of-work leave.[[7]](#footnote-7) Many of the remaining workers opted to work remotely, in an effort to reduce possible transmission of the virus.

On March 23, 2020, WST had an emergency managers’ meeting on Zoom[[8]](#footnote-8) to develop a strategy for increasing cash flow during the shutdown. Noticing the increased demand for PPE in Canada, Wang suggested that WST source this protective equipment from overseas, to sell online through its safety supplies shop. On March 23, WST secured product from a variety of manufacturers, to be shipped within 15 days. By March 24, the company had generated pre-order sales of over $700,000. The ensuing weeks resulted in round-the-clock efforts by the shipping and logistics team to ship out backlogged product to the customer. The second month of this venture saw a stabilization in PPE sales, with demand for product totalling 2,150 orders.[[9]](#footnote-9) Wang projected that this demand would be more representative of product sales in the coming months and years.

WST’s primary customers were other business accounts. Many companies were reopening their offices, leading to a last-minute scavenging for PPE to follow appropriate safety precautions. WST also sold products to individuals and families who required PPE to enter grocery stores and other essential locations.

**THE CURRENT PROCESS**

Many workers in the shipping and logistics department at WST were brought back to work after the spike in demand for PPE. The shipping process changed drastically within the first couple months of selling these supplies, as the unprecedented sales required an adjusted operational procedure. Operations included waybill printing, sealing, labelling, and picking and packing orders. Five full-time workers and one part-time worker were responsible for these steps in the process and were paid $19 per hour. All full-time employees worked the same eight-hour shift[[10]](#footnote-10) for five days of the week, with a half-hour unpaid lunch break and two paid 15-minute breaks throughout the day. These employees also received two weeks of unpaid vacation time per year[[11]](#footnote-11).

WST sourced and sold five distinct product types that fell within two different PPE product categories (see Exhibit 1). The first product category was protective facial equipment. This category included three-ply masks, KN95 masks, and face shields. The KN95 masks were the best-selling product and were highly sought after by essential workers. The second product category was sanitizing products, which included sanitizing wipes and small bottles of hand sanitizer. By the third month of operations, a significant stockpile had accumulated as inventory in the warehouse. All of the products in each product category needed to be sealed and labelled as a unit before being shipped out.

The process began with waybill printing. At this step, two full-time workers would receive orders and assign a box size and weight for each order based on the amount of product purchased. They would then copy and paste the shipping address information into the courier account. After all of the information was recorded correctly, the waybill printer would purchase and print a waybill for the order. Overall, each worker at waybill printing would take an average of seven minutes to print a single label. This waybill would then be sent to the picking stage in the process.

While the waybills were being printed, across the warehouse floor, one full-time worker and one part-time worker sealed and labelled product, respectively. The sealer would take a polyethylene tubing bag and seal one end with a heat-seal machine, then take units from inventory and place the units into a bag in the appropriate quantity, resulting in a single order. The sealer would then seal the other end of the bag. The total sealing step in the process took a total of 20 seconds per order. The product would then be passed from the sealing step to the labelling step, where a single worker would place a sticker on the sealed unit, which would take approximately 10 seconds per unit. The sealed and labelled product would then be placed in work-in-progress (WIP) inventory, where it would eventually be picked and packed.

Next in the process was the picking stage. Here, a single full-time employee would fold the suitable box size (as chosen by the waybill printer) and tape the bottom of the box. The employee would then walk over to the WIP inventory, find the appropriate product, and place it in a box, with bubble wrap protecting the product and filling the void space in the box. This step would take a variable amount of time depending on the size of the order. On average, picking a single order took roughly five minutes, including the travel time to and from the WIP inventory. The picker would then place the open box by the packing station, where a full-time packer would seal the box, tape on the waybill, and set the box in the retrieval area, where it would eventually be picked up by the courier service. This packing step took one minute per order. An average order had a shipping cost of $14.50. This cost was charged to WST’s customer in full so that WST would not need to pay shipping on freight-out shipments.

The process included some additional restrictions, which mandated that workers remain six feet (1.8 metres) apart at all times, as per the COVID-19 guidelines set by the government. Therefore, when items were being passed from one step to the next, the workers needed to leave the item on a table, rather than pass items to another worker directly. All employees were required to wear masks and gloves while in the warehouse to ensure the necessary safety precautions were being met. The workers noticed that throughout the day, the largest buildup of product occurred at the picking step in the process. Orders sometimes did not ship out on time due to the backlog of product at this step.

**THE PROPOSAL**

With the objective of increasing efficiency in the shipping and logistics department at WST, Wang was considering a range of alternatives.

**ShipStation**

The current waybill printing process was disorganized. With orders being processed both by the sales team and through the website, the waybill printers were sometimes challenged to keep track of which orders had already been completed and shipped. This confusion resulted in approximately 10 orders per month being unnecessarily reshipped, due to poor order management and tracking. These 10 orders were not returned to WST, resulting in unnecessary cost increases due to poor data management.

Wang was considering implementing a new e-commerce fulfillment platform called ShipStation in WST’s shipping and logistics department. The platform would act as a central hub for shipping data, with orders filtering in from WST’s website and through the sales team’s Salesforce[[12]](#footnote-12) account. This platform would allow the workers at the waybill printing step to better import, track, and manage orders, and would effectively eliminate the costs associated with unnecessary reshipping and lost product.

ShipStation would not only allow for better management of orders but also drastically reduce the time for waybill printing to 2.5 minutes per worker. As such, the waybill printing step in the process would require only a single worker. To implement this software, WST would need to hire a developer to set up the application programming interface so that all orders would properly filter into the ShipStation account. The developer would need to learn about the current processes at WST before setting up the pathways. All told, the developer would spend roughly four weeks setting up the account, working 40 hours per week at $60 per hour. After this initial set-up cost, the ongoing cost of the ShipStation account would be $99 per month.

Wang was unsettled that she would be hiring a contract developer at such a high rate while many of WST’s employees were still furloughed. However, she believed this new platform would push the company in a new, more proactive direction.

**Sealing and Labelling Machines**

Another option that Wang was considering was the implementation of a partially automated assembly line at the sealing and labelling steps in the process. Wang had used her sourcing expertise to find two separate suppliers who were willing to sell and install the sealing and wipe-on labelling machines. The first supplier would sell and install new equipment with a five-year warranty. The sealing machine from this vendor was $9,000, and the labelling machine was $13,000. The second supplier was willing to sell and install used machines at a significantly lower rate but with no warranty. The used sealer would cost $4,500, and the labelling machine would cost $7,600. Wang knew that she would have a hard time justifying an expensive purchase to upper management at WST, but she felt that the used equipment came with significant risk. The partial automation of this line meant that, together, a single unit of product could be sealed and labelled in 15 seconds. With the sealing and labelling partially automated in one combined step, only one full-time worker would be required.

The added cost for the custom material to fit the machines would total an additional $20 per month. Wang also predicted that the used machines would require a total of four hours of maintenance per month, at a rate of $36 per hour. If the routine maintenance was ensured, the used machine had a useful life of roughly two years.

**THE DECISION**

Wang sat back and stared out the window in her home office. She wondered whether it was worthwhile investing in any of these alternatives, as, due to restricted cash flows, WST was limited in what it could afford. Any alternative would need to pay for itself quickly to justify the purchase. She was growing increasingly frustrated at being locked down in her home and was wondering when she would be able to head back to work to see her colleagues in person. Ultimately, Wang was looking forward to the day when she could sleep without having nightmares of lead-time delays in air-freight shipping.

EXHIBIT 1: Personal Protective Equipment PRODUCT BREAKDOWN

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Product** | **No. of Pieces per Unit** | **Selling Price per Unit (CA$)** | **Landed Cost** **per Unit (CA$)** | **Sales Proportion (%)** |
| Three-Ply Face Masks | 50 | 29.00 | 18.50 | 20 |
| KN95 Protective Face Masks | 10 | 35.00 | 24.00 | 40 |
| Protective Face Shields | 10 | 30.00 | 16.50 | 10 |
| Alcohol Sanitizing Wipes | 10 | 26.00 | 17.50 | 15 |
| 50-millilitre Sanitizer Bottles | 3 | 5.50 | 1.50 | 15 |

Source: Company files.

1. Tristan Bronca, “COVID-19: A Canadian Timeline,” Canadian Healthcare Network, April 8, 2020, accessed July 21, 2020, www.canadianhealthcarenetwork.ca/covid-19-a-canadian-timeline. [↑](#footnote-ref-1)
2. Government of Canada, “Coronavirus Disease (COVID-19),” accessed May 23, 2020, www.canada.ca/en/public-health/services/diseases/coronavirus-disease-covid-19.html. [↑](#footnote-ref-2)
3. TMX Money, “S&P/TSX Composite Index,” accessed August 1, 2020, http://web.tmxmoney.com/quote.php?qm\_symbol=^TSX&locale=en. [↑](#footnote-ref-3)
4. Statistics Canada, “Gross Domestic Product by Industry, April 2020,” *The Daily*, June 30, 2020, accessed August 4, 2020, www150.statcan.gc.ca/n1/daily-quotidien/200630/dq200630a-eng.htm. [↑](#footnote-ref-4)
5. Statistics Canada, “Labour Force Survey, April 2020,” *The Daily*, May 8, 2020, accessed August 4, 2020, www150.statcan.gc.ca/n1/daily-quotidien/200508/dq200508a-eng.htm. [↑](#footnote-ref-5)
6. All dollar amounts are in Canadian dollars. [↑](#footnote-ref-6)
7. A shortage-of-work leave was a temporary contract pause that would render workers unemployed for an undisclosed period of time. [↑](#footnote-ref-7)
8. Zoom was a video-conferencing and communications software that allowed users to host virtual meetings. [↑](#footnote-ref-8)
9. The orders averaged 11 units per order. [↑](#footnote-ref-9)
10. All part-time workers worked half the amount of time that full-time workers worked. [↑](#footnote-ref-10)
11. Although the Employment Standards Act stated that hourly workers in Ontario were entitled to a minimum of two weeks of paid vacation by the employer, this company was protected from paid vacation. [↑](#footnote-ref-11)
12. Salesforce was a cloud-based platform for customer relationship management. [↑](#footnote-ref-12)