Return address?

March 15th, 2020

Thorsten Ewald
British Columbia Provincial Manager
Canada Post
5940 Ferguson Rd.
Richmond, BC V7B 1M6

Portable Data Terminal (PDT) Software Upgrade for Canada Post

Dear Thorsten,

Please accept this letter of transmittal for the proposal of a software upgrade for the Portable Data Terminal (PDT). The PDT is carried by all employees at Canada Post, yet their usage is merely for the tracking of parcels and registered mail. A software upgrade adopting the newest algorithm to incorporate live GPS geolocation, traffic information, sharing of route information, and an integrated AI that calculates the best route every day will increase efficiency in route planning, accuracy in deliveries, and establish seamless communication between letter carriers.

Canada Post is an organization well-respected across Canada, and a part of every Canadian's life. Yet archaic procedures were never updated to reflect the current fast-growing technology. The result of this is the inefficient and non-standardized way of route planning, avoidable communication lapses within the organization, and failure to keep up with the growing rate of online orders.

This proposal consists of 7 sections detailing from? an analysis of the problem, proposed solution, implementation, reasoning behind every decision, cost, and how success can be measured.

Our team of programmers include people who worked for Amazon and Fedex, who have seen firsthand how big-name competitors use a similar design that maximizes parcel deliveries while protecting customer privacy.

We propose a small implementation to test the feasibility of this new upgrade in the North Fraser Delivery Depot in Burnaby, and then ease into other bigger depots.

If you are interested, please arrange a meeting with us and we will be glad to give a detailed presentation as well as moving forward to discuss next steps.

Respectfully yours,

Jack S.
Senior Project Manager
Happy Driver Delivery
jackshih@hpdelivery.com
604-325-2324

Portable Data Terminal (PDT) Software Upgrade for Canada Post

Submitted to: Thorsten Ewald

Submitted by: Jack S.
Ricky C.
Animesh K.
Risham J.

Submitted on: March 19, 2020

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The pages of the orientation (navigation) section were supposed to be formatted in lower case Roman numerals.

SUMMARY

This proposal offers a solution for Canada Post to boost the efficiency of its mailing and delivery services. We will provide a software upgrade to the Portable Data Terminals (PDT) and create a web application for dispatchers to use. These additions will help Canada Post keep up with the exponential growth of parcel deliveries across Canada.

With the success of e-commerce around the world, the numbers of parcels being shipped has grown considerably. The current system of sorting and creating routes for parcels is inefficient. It gives little information to carriers, relying on them to fill in gaps. This system can be prone to errors, and is unfit to handle the growing volume of packages being shipped.

Our solution is a software upgrade for the PDTs used by letter carriers. The software will sort mail deliveries and deliver route information to carriers. Dispatchers will use a new web application to complement the PDT software. These new additions focus on streamlining the preparation of delivering packages. With our software, carriers won't have to do extra work to get all of the information they need.

It will take 4 months to develop the software and complete its visual design. Development will start by planning out goals, then developing the solution after. This development stage will have programmers and designers working in parallel. After development is finished, the team will install the upgrades in mailing depots across BC. The cost of the project will involve the software and hardware we need to purchase, and contract new developers. The total cost is projected to be $110,680.

With these upgrades, Canada Post can keep up with the demand of parcels now, and in the future. Carriers and dispatchers will have a quick way to communicate issues in the field. With the workload reduced for employees, job satisfaction will vastly improve. To start the upgrade, we recommend implementing it at a single depot. Workers will be trained to use the software at that depot, and then we will move on. We will monitor the results of the upgrade regularly as it is rolled out. With this upgrade, deliveries will be quicker, and customers will be satisfied with the improved service from Canada Post.

INTRODUCTION

With booming E-commerce worldwide, major companies including even supermarkets such as SuperStore have shifted their focus to the online market. Brick-and-mortar stores are closing their doors due to a shift in demand to online platforms, with Sears closing 175 of its stores in 2019 (Peterson, 2019). Meanwhile, online retailers such as Amazon have rapidly grown to become giant corporations, with Amazon's 2019 sales increasing by $47.63 billion, a 20.8% increase compared to the previous year (Stambor, 2020). The success of online retailers directly translates into a flourishing parcel delivery market.

In 2018, global online sales were estimated at an excess of US$2.7 trillion, estimated at a growth rate of 24% per year (Apex Insight, 2019). With the exponential demand for parcel delivery, it is increasingly critical for Canada Post to adapt quickly to take advantage of this global trend to stay competitive and profitable.

Historically, Canada Post made a chunk of its revenue from LetterMail items. In 2006, 54.8% of its total revenue ($3.2 billion) was from LetterMail items, versus 20.5% ($1.2 Billion) from Parcels (Canada Post, 2009). For years, all of Canada Post's operations, from depot layout to route planning, were based on optimizing the delivery of LetterMail items using a system of relying on paper route maps for route planning and route information. And this has stayed mostly unchanged since the 1990s, which was never designed to account for the increase in parcel volume as we see now.

Problems

This section describes three problems in the operation of Canada Post that can be addressed by our proposed software upgrade: the increased parcel volume, ….

Parcel Volume Increase

In 2018, parcel revenue grew by $308 million, or 13.6%, and volumes grew by 54 million pieces, or 21.7% compared to 2017. As of 2018, mail volume declined by 44% compared to 2006, and by 5.5% compared to 2017, which is a $151 million decline (Canada Post, 2019). With LetterMail revenue declining by 15% every year, business will go to other parcel-focused delivery companies such as FedEx. A comprehensive demonstration of the parcel to mail ratio is depicted in figure 1 below.
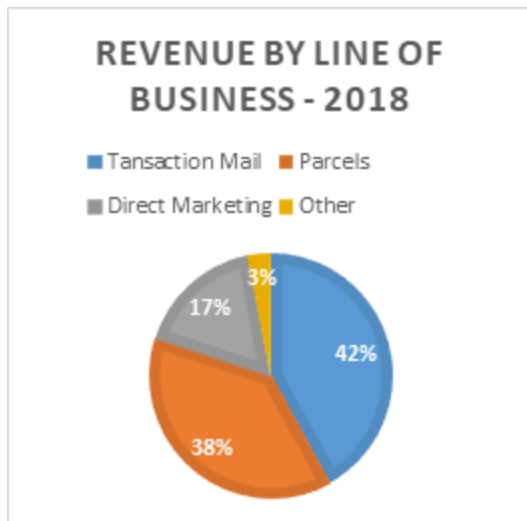
Figure 1 Revenue By Line of Business - 2018

And the yearly decline of LetterMail is shown in figure 2 (Canada Post, 2019) below.

Transaction Mail (excluding outbound)	2007	2008	2009[1]	2010	2011	2012	2013	2014	2015	2016	2017	2018
Delivered volume percentage change	(1.3)%	(1.6)%	(5.5)%	(3.9)%	(3.7)%	(6.1)%	(4.9)%	(5.0)%	(5.9)%	(7.7)%	(5.4)%[2]	(6.1)%[2]
Delivery addresses percentage change	1.4%	1.4%	1.2%	1.0%	1.0%	1.0%	1.0%	1.2%	0.9%	1.2%	1.1%	1.2%
Mail volume percentage decline per address	(2.6)%	(2.9)%	(6.7)%	(4.9)%	(4.6)%	(7.0)%	(5.9)%	(6.1)%	(6.8)%	(8.8)%	(6.5)%[2]	(7.2)%[2]

1. Amounts for 2009 were restated for comparability as a result of a methodology change in 2010. Amounts for years prior to 2009 were not restated and, therefore, may not be comparable.
2. Adjusted for trading days.

Figure 2 Transaction Mail Decline

Canada Post already has a good network of letter carriers experienced in door-to-door deliveries. The key is to make use of modern-age technology to increase productivity and optimize route planning to shift Canada Post from a mail-delivery-centric company to a first-class parcel delivery company. To achieve this, we propose making use of the portable data terminal (PDT) that is already used by every postal worker in Canada Post.

Sortation Inefficiency

All sorting is done manually in a sorting case. Parcels do not come pre-sorted. Letter carriers must match parcels against an address sheet to organize the parcels. The only things provided to letter carriers for route planning are a route header board and a route map, both printed on paper (see figures 10 and 11 in Appendix A). This results in lengthy pre-delivery preparations as well as high likelihood of human error.

Lack of Route Information

Currently at Canada Post, nothing is digitized and the only capability of the PDT is to scan parcels and registered mail for tracking purposes. All modifications to route details are done only through supervisors who would need to submit the change to headquarters and wait for approval.

PDT provides no live updates whatsoever, such as road and traffic condition, vicious dog alerts, house vacancy, mail redirection, customer special requests, and en-route information.

Our software upgrade utilizes the PDT to give a multitude of features that may help expedite the flow of route information between customers, letter carriers, drivers, and supervisors, and in turn facilitate and speed up deliveries.

SOLUTION

This section describes the proposed solution to the discussed problems. Intro the subsections

Driver Buddy

Our solution will be software upgrade that will benefit letter carriers as following:

- It will help sort and route packages.
- It will help keep the real-time tracking of each route for the dispatching process.
- It will assist rerouting the stops to avoid traffic.
- It will include a user interface to access special route information.

What it will include

It will include a software upgrade for the PDT, and a web application that will run on computers for sorting, routing and dispatching processes. The web app will have various components and interfaces for different tasks, such as letter carriers, depot clerks, or postal clerks, and resource access will be provided according to the hierarchy structure of the organization. Every employee will get his/her own login credentials and will be responsible for their assigned tasks. We also propose a new position to Canada Post: the dispatcher, who will act as a control centre for real-time route handling.

Sorting and Routing

Every package will be assigned a unique tracking ID and a respective bar code label will be printed and pasted on all of the packages. The shipping address of the packages will determine their barcodes. These identification numbers will be used by the system to group the packages and prepare routes. With the help of AI, the system will generate ordered route numbers and a set of packages will be assigned to each route. The number of routes generated and the package count per each route will be controlled by the number of available letter carriers plus the volume of the packages the company has planned to deliver per day.

After the routes have been generated, the packages will be sorted into the groups of 15-20 and each such group will be placed into containers with unique IDs, as shown in figure 3 below. Then the groups of containers will be sorted and assigned to their respective routes. Along with the digitized order list of stops per route, the system will also generate a paper manifest with a list of all stops and order in which these should be delivered.

Figure 3 Sortation Area, Organized by Route Numbers

Letter Carrier Interface

The AI will assign the routes to the scheduled letter carriers based on their previous performance. However, the scheduler or dispatcher will also have the authority to reassign the routes. Once routes are assigned, letter carriers will use their credentials to log in and they will be able to see their routes on the PDT. The interface will allow letter carriers to see their service area for the day, package count and the order of stops. It will have a list view as well as a map view of all the expected stops, as shown in figures 4 and 5 on the next page. Each stop will also have an AI-generated expected time of delivery.
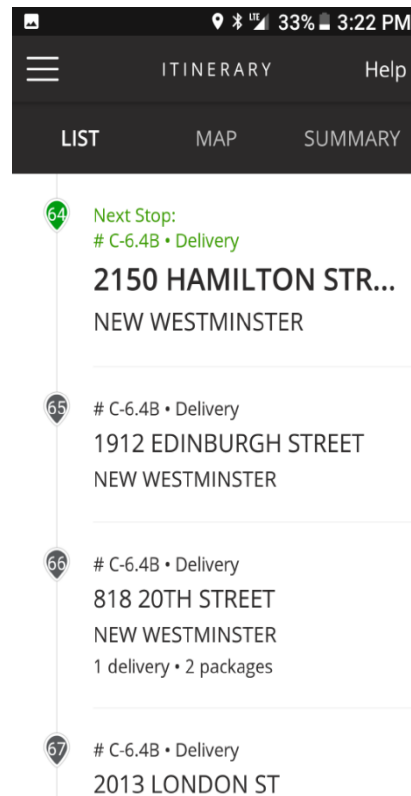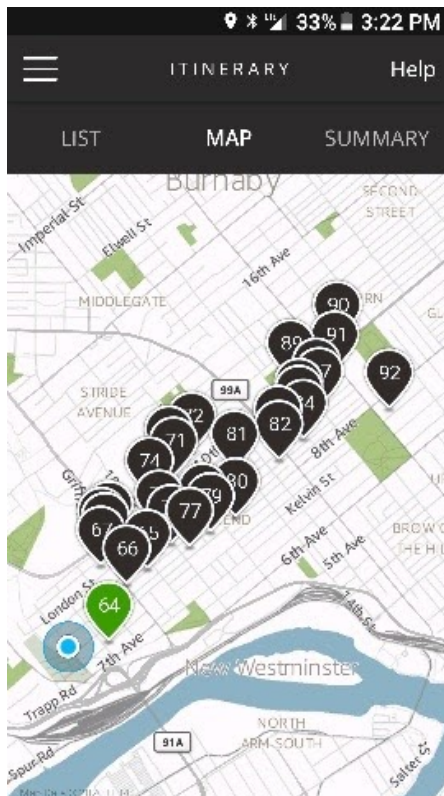
Figure 4 Delivery Stops on the map   *Figure 5 Delivery Stops in List View*

Picking Packages

Letter carriers will start their day by signing in to their accounts and picking the packages. Our software will use the PDT to scan barcode labels. Letter carriers will scan the containers to ensure that they are picking the right set of packages. An error will be shown if a wrong container is scanned under a given route number and will not allow the letter carrier to proceed until he/she has scanned all the right containers.

Marking Deliveries

After scanning and picking the correct containers, letter carriers will start the delivery process. The software will direct letter carriers to their respective stops. The software AI will provide the navigation for each stop considering the current traffic conditions and congestion. For each stop, the letter carrier will scan the barcode on the package to ensure the right package is being delivered to the correct address. And for each delivery, the letter carrier will have to specify the method of delivery as shown in figure 6 on the next page.

Options include

- deliver to mailbox,
- deliver to front/back door,
- deliver to basement,
- hand to the customer or household member,
- deliver to receptionist, or
- deliver to a safe/hidden place.

For front/back door, basement and safe/hidden place deliveries, letter carriers will be prompted to click a photo of the package. Similarly, for the options of the customer/household member and the receptionist, letter carriers will be prompted to take the signature of the receiver.
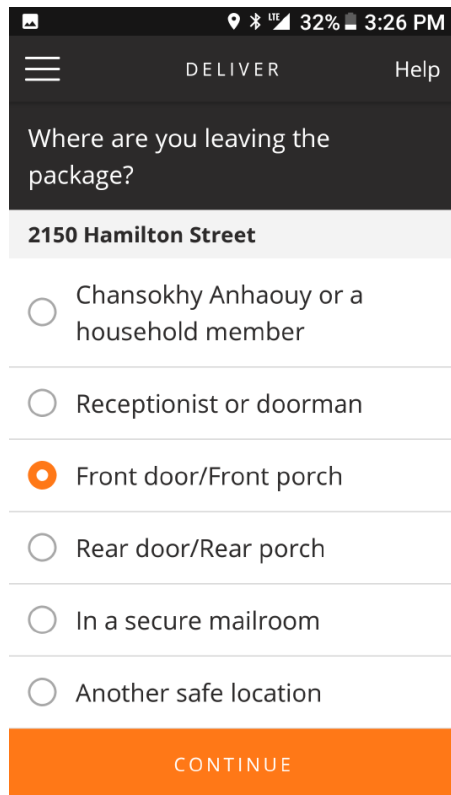
Figure 6 Parcel Location

For undelivered packages, letter carriers will have the following options to specify the reason:

- It was unable to access the property.
- There was no safe place to leave the package.
- Customer requested to receive delivery on future date.
- Customer rejected the package.
- It was unable to locate the address.
- Business was closed.
- It was out of delivery time.
- It was out of service area.

Each time a package is marked undelivered, a notification on the PDT will prompt the letter carrier to record the reason, as shown in figure 7 on the next page, and the parcel will be redirected to a nearby post office for pickup at the customer's own convenience.

Figure 7 Prompt for Reason for Failure to Deliver

Route Tracking

Each time a delivery is marked by a letter carrier, the system will generate a timestamp and it will be evaluated against the expected delivery time scheduled by the system. This will enable the dispatcher to keep track of all letter carriers. The dispatch will be able to see the progress of each route and will have the complete information on how many packages have been delivered so far and how many are still on the road. And what are the reasons behind the undelivered packages? The system will use the location service of the software being used by letter carriers to track them. All letter carriers will be represented by a blue dot on the map, depicted by the current location of the letter carrier and for the letter carriers who are falling behind their schedule, the blue dot will turn red. This will help dispatch to plan out rescues more efficiently. The screens for the features described above are depicted in figure 8 on the next page.
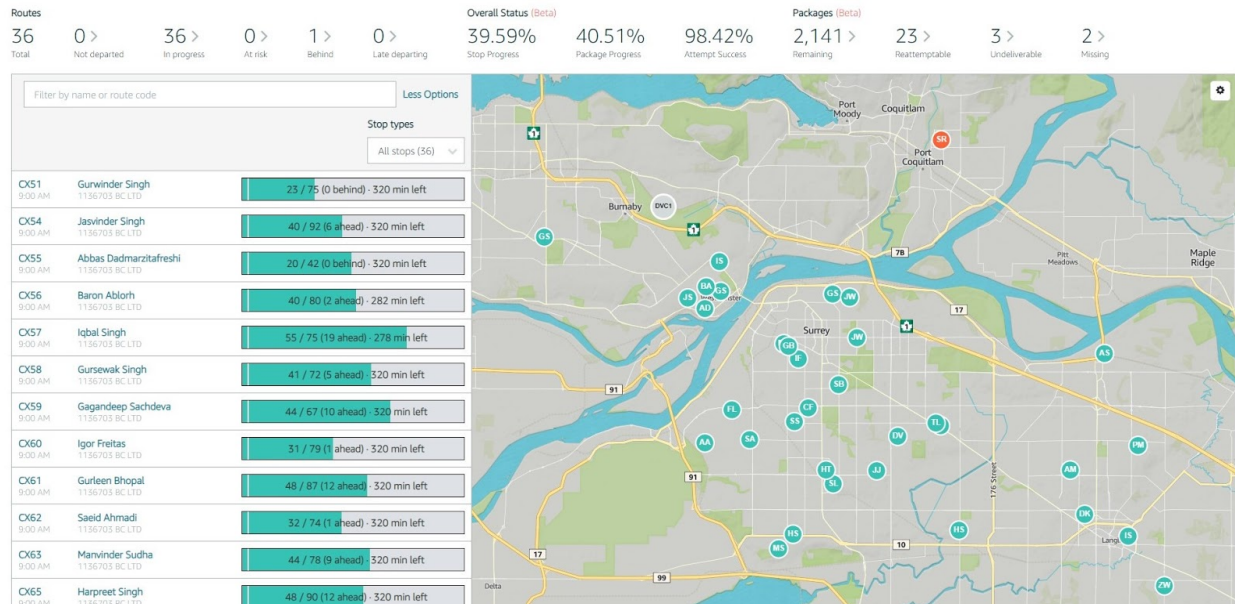
Figure 8 Parcel Delivery Progress

Standard Work Procedure (SWP)

According to the standard work procedures, letter carriers are required to follow specific steps for delivering packages and the system will record each step to evaluate letter carrier's performance.

SWP will include

- scanning all the containers during load-out,
- scanning the package at the right address at the time of delivery,
- marking the package with the right code,
- clicking a clear picture of the package with an adequate view of the background in case of front/back door delivery, and
- getting the signature of the receiver if requested by the sender.

Support

Letter carriers will have the option of adding comments to any addresses they deliver. Carriers can mention things such as watch out for vicious dogs, this customer has moved from the current location, slippery stairs, garden gate does not lock, mailbox hidden behind bush, etc. A notification will pop up every time a letter carrier tries to attempt delivery at this particular stop as a reminder. This will help letter carriers prevent themselves from being injured and will facilitate an easier sharing of information between letter carriers.

Our software will also have the option of calling support from the PDT. This call will be directed to the dispatcher, who can assist carriers with any difficulty on the road.

How it will improve the efficiency

The performance of letter carriers will be calculated on the basis of time in which they finish their routes, how many packages they are bringing back and whether they carried out standard work

procedures for attempted deliveries?. The system will rate the letter carriers on the basis of photo-on-delivery compliance and call compliance. And since our system is intuitive, it will use the letter carrier's ratings to assign them routes.

At the end of each shift, the system will generate End-of-shift (EOS) reports. The EOS will list all the routes, starting and finish time of each route and all the packages brought back from each route with their respective reason codes. We will use google sheets to store all this information which can be downloaded into excel sheets at any time.

IMPLEMENTATION / SCHEDULE

The development of the Driver Buddy software will be complete at most within four months. The majority of time will be spent on the development and implementation of the software. The planning phase will take two weeks to cover all the details of the software and lay out the goals . Development along with testing will take two months to create the finished product. The longest phase will be the implementation of the product, as letter carriers will need to be trained in its use. The implementation phase will be repeated for each depot across Canada. Shown below in figure 9 is a comprehensive chart for the implementation schedule.
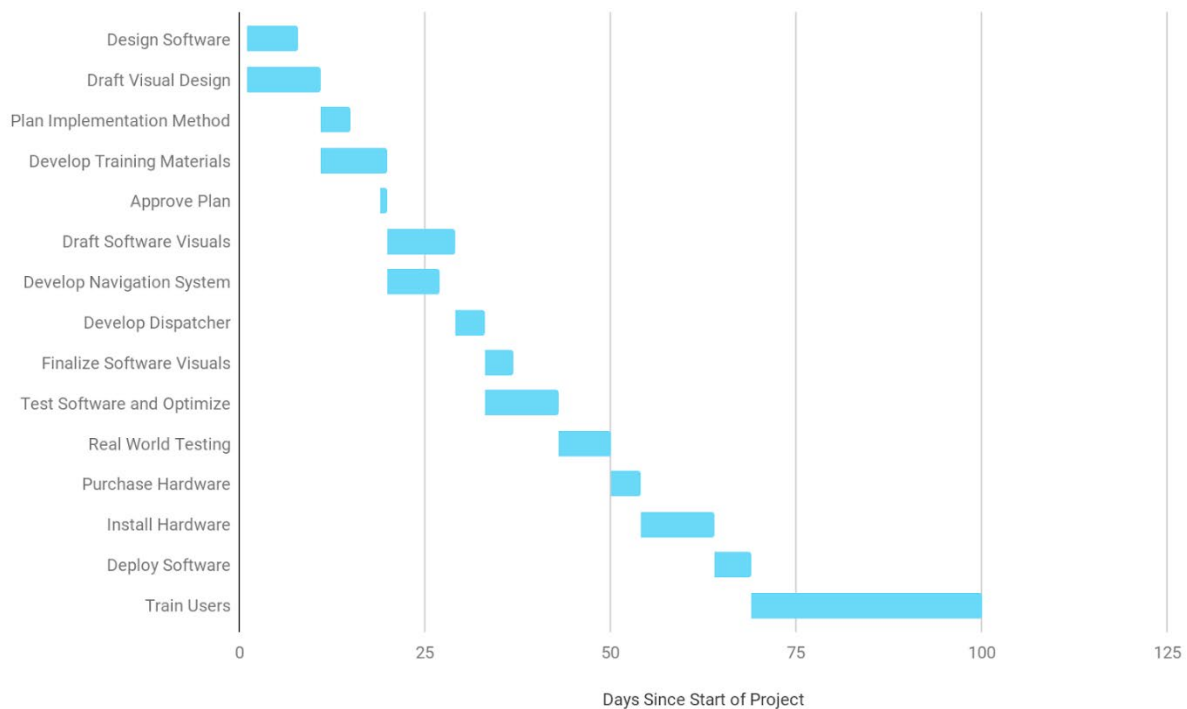

Figure 9 Implementation Schedule

Design Software Stage?

In the software design stage, We will make a flexible design for the solution, allowing our primary users (delivery men) to quickly include it into their workflow. The Details of the proposed features will be realized here. The team will figure out how to implement GPS tracking for letter carriers and traffic

monitoring to help letter carriers minimize wasted time. The team will also focus on preparing lines of communication between letter carriers and dispatchers.

Draft Visual Design Stage?

The visuals of the Driver Buddy will also be determined? near the beginning. Colours and logos will be decided at this step. Drafting programs such as Figma will help in creating the design for the PDT's screen size. The layout of the software's features will be decided later once the software has been developed further.

Plan Implementation Method

The team will need to estimate hardware specifications to support the system. We will devise the best way to implement the system into Canada Post's operations without interference.

Develop Training Materials

Training material for when the software is deployed will be created. Two sets of documentation will be written to explain the use of its features. One for drivers, and another for dispatchers.

Approve Plan

The plan will be presented for approval. We will take criticisms and tweak our plan to fit user needs. After approval, the team will have an idea of what needs to be created, and can continue on.

Draft Software Visuals

Designers will create the first draft of the software's layout. Logos and menus will be created and placed. We will create different layouts to suit letter carriers and dispatchers. Designers and developers will work together so the layout will help users in interacting with features.

Develop Navigation Systems

Developers will create the main tracking system that letter carriers will use. The system will be made to keep the letter carrier's interaction as simple as possible. They can keep their focus on driving and delivering packages. The routing system will also be developed by using an AI and traffic information to optimize a carrier's route. Development will be done using the Java language in the Eclipse IDE.

Develop Dispatcher Application

The web application that dispatchers will use needs to be made as well. The web app will be made using Javascript. This web app will interact with each carrier's PDT software in that region. The web app will be deployed on Canada Post's intranet, and will have security measures to protect confidential information.

Finalize Software Visuals

Once the Driver Buddy is sufficiently developed, designers will finalize the software's visuals. At this point, work on the visual design for the PDT software and web app is finished.

Test Software and Optimize

With main development finished, the design and functions of the software will be tested extensively in a controlled environment. Any bugs will be fixed and designs will be tweaked if needed.

Real World Testing

After controlled testing, a mailing depot will be chosen to test the software in the real world. The letter carriers themselves will test the software and provide feedback. Letter carriers and dispatchers will be asked to give their feedback through a survey. Past and present performance metrics will be compared to see how our solution improves Canada Post's current system.

Purchase Hardware

Developers will decide on what hardware specifications will properly run the software for each depot. A company will be selected to order computers from. Once decisions have been made, the order will be placed.

Install Hardware

Each depot will need to have the hardware installed to facilitate the software and the region's specific map layout. letter carriers will need to install the software on their devices, or each vehicle may have a dedicated device to hold the software.

Deploy Software

With the machines set up, we will deploy our software and address any possible performance issues. All PDT's will have their software updated. Dispatchers will receive new login information for the web application. After deployment, special attention will be given to rural areas for connection issues.

Train Users

Letter carriers will need to be trained to use the Driver Buddy properly. They will be told how to use the information the software gives them, and how to set up contact with dispatchers. Training will start with 5 carriers, and 2 dispatchers. After that, the rest of the employees will be trained gradually. Documentation needs to be printed for each user to reference. Deployment and training will be repeated for each depot in Canada.

EVALUATION

The result of implementing Driver Buddy will be evaluated in three ways: (1) comparing the current revenue with the past, (2) recording the average delivery time per route, and (3) reviewing the customers' complaints. The project/Driver Buddy will be deemed successful if the revenue increases over 0.005% compared to the last three months (see table 2 in appendix B), the average delivery time becomes shorter, and the number of customer complaint decreases.

We propose a test implementation starting with the North Burnaby Delivery Depot, as it is a smaller depot covering the Metrotown area, including a wide range of residences such as highrises, lowrises,

businesses, duplexes and detached single houses. If the implementation in North Burnaby area is successful, then Driver Buddywill be implemented in the whole province and other provinces as well.

BUDGET

Software licenses will have to be acquired for the team to use development programs. New computers must be purchased to support software services. Costs will also include training carriers to use the Driver Buddy effectively. Implementation costs are for British Columbia only, before we move on to the rest of the country. Extra staff will be brought in to develop this project, and documentation will be printed for future reference by our users. Staff hourly wages are based on rates shown on PayScale (PayScale, n.d.).

Table 1 Budget of the Project in Detail

Software Licenses		
Adobe Creative Cloud	2 licenses for 4 months	$640
Hardware		
Server Computers	Facilitates dispatcher communication.	$25,000
Staff		
3 Developers	$25/hr for 4 months	$48,000
2 Designers	$22/hr for 1 month	$7,040
Implentation Costs		
Training Users	Train each distinct user.	$15,000
Documentation	Print documents for users.	$10,000
Software Deployment	Deploy web app for dispatchers.	$5,000
Total		**$110,680**

CONCLUSIONS

Driver Buddy will boost work efficiency in terms of instant communication between dispatchers and letter carriers and automation of routing and container assignment. If there's an inevitable change to make on the planned delivery route, letter carriers and dispatchers can communicate with one another through Driver Buddy and come up with effective alternatives. All these procedures are carried out through a digitized network, so it becomes possible to check and review the routes and decisions made via Driver Buddy. Thus, Driver Buddy will improve the employees' working conditions by reducing the time and effort, which will lead to an increase of their job satisfaction compared to the past. In this way, the overall performance of the employees' work will improve and delivery time will become much faster. Accordingly, customers will be satisfied with shortened delivery time.

Improved working conditions will reduce the possibility of labour strike in future (Canada Post, 2018). Shortened delivery time and customer's satisfaction would improve the company's revenue. Therefore, Canada Post needs to implement Driver Buddy to improve their delivery performance and efficiency.

RECOMMENDATIONS

To improve the performance and efficiency of the delivery process at Canada Post, we recommend the following:

1. Implement Driver buddy starting with the North Burnaby Delivery Depot.
2. Train staff using our PowerPoint slides and video tutorials.
3. Train five letter carriers regarding the new PDT software and two dispatchers for the web app within a week's time, starting with five routes in the North Burnaby Delivery Depot.
4. Gradually train all other employees.
5. Document all the processes and evaluate the results at the end of every month.
6. Carry out nationwide implementation.

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APPENDICES

Appendix A – Canada Post Route Information

Shown below in figure 10 and 11 are examples of a route header board and route map. No additional information is provided regarding a route.

CANADA POST / POSTES CANADA	OAKVILLE STN MAIN - LC0008		Imprimé/ Printed	2017-04-12
Heure de Début / Start Time	8:15	Total POR/ POC		855
Heure prévue de départ / Estimated Departure Time	9:15	Quart fractionné/ Split Shift		n/a
Téléphone/ Phone	555-777-1234	Clefs / Keys	10815, 1055	
Instructions spéciales/ SPECIAL INSTRUCTIONS	Tie out Special 23 - 345 Church St: uses 10815 also			
Livraison d'itinéraire AM / AM delivery portion	1 - 22N	Livraison d'itinéraire PM / PM delivery portion	Special 23 - 57	

Ramassage à horaire fixe par le client / Scheduled Customer Pickup

Compagnie / Company	adresse/ Address	lun / Mon	mar / Tues	mer / Wed	jeu / Thu	ven / Fri	temps / Time
SIXTH SENSE PUBLICATIONS	25 LAKESHORE RD E	X	X	X	X	X	
ROSANNA DARLING	190 CHURCH ST.	X	X	X	X	X	

Surtemps / OT SPLITS	3/4 portions / 3/4 May	1	Sort, tie-out 1-15	2	16 - Special 23	3	24 - 38	4	39 - 57
	1 portions / 1 May	1	Sort, tie-out 1-24	2	25 - 46M	3			47A - 57

CM/HH Livraison Delivery	2 jours / 2 Day	1	1 - 33	2	34 - Special51	3	Special 52 - 57
	4 jours / 4 Day	1		2		3	4

RTA/ FSA	Arrêt / Stop	Code attache / Tie-out	Rue/Street	De/From		À/To	R R	R HH/CM	A A	A HH/CM	C/B C/B	C/B HH/CM	POR/POC Total	R-VOL Total
			Arrêt / Stop			REYNOLDS ST								
	1		REYNOLDS ST	132	--	132					1	1	1	1
	2		RANDALL ST	300	--	296					3		3	
	3		RANDALL ST	299	--	299					1	1	1	1
	4		CHURCH ST	323	--	327					19	7	19	7
	5		CHURCH ST	342	--	342					1	1	1	1
	6		CHURCH ST	340	--	340					1	1	1	1
	7		CHURCH ST	338	--	338					1	1	1	1
	8		CHURCH ST	336	--	336					1		1	
	9		CHURCH ST	334	--	334					1		1	
	10		REYNOLDS ST	109	--	83	1	1			4	3	5	4
	11		ROBINSON ST	295	--	307					8	7	8	7
	12		REYNOLDS ST	84	--	84					1	1	1	1
	13		REYNOLDS ST	90	--	110					5	3	5	3
	14		CHURCH ST	308	--	300					2	1	2	1
	15		CHURCH ST	284	--	284					1	1	1	1
	16		CHURCH ST	284	--	284					1		1	
	17		CHURCH ST	282	--	282					1	1	1	1
	18		TRAFALGAR RD	15	--	111					7	2	7	2
	19		TRAFALGAR RD	126	--	164					12	9	12	9
	20		TRAFALGAR RD	135	--	123					5	2	5	2
	21		CHURCH ST	293	--	309					5	3	5	3
			Arrêt /Stop Total				1	1			81	45	82	46
			Arrêt / Stop			CHURCH ST.								
			CMB located at AT PARKING LOT ADJACENT TO 342 CHURCH ST - 10815											
	22A		CHURCH ST	342	--	342			2	2			2	2
	22B		CHURCH ST	338	--	338			1	1			1	1
	22C		CHURCH ST	336	--	336			1				1	
	22D		CHURCH ST	334	--	334			1				1	
	22E		CHURCH ST	284	--	284			1	1			1	1
	22F		LAKESHORE RD E	249	--	249			2	2			2	2
	22G		LAKESHORE RD E	333	--	333			2	2			2	2
	22H		LAKESHORE RD E	335	--	335			1	1			1	1
	22I		LAKESHORE RD E	337	--	337			1	1			1	1
	22J		LAKESHORE RD E	339	--	339			1	1			1	1
	22K		LAKESHORE RD E	341	--	341			1	1			1	1
	22L		RANDALL ST	312	--	312	1						1	
	22M		REYNOLDS ST	128	--	128	1	1					1	1
	22N		REYNOLDS ST	86	--	86	1	1					1	1
	Special 23		CHURCH ST	345	--	345			83	31	1	1	84	32
			Arrêt /Stop Total				3	2	97	43	1	1	101	46
			Arrêt / Stop			TRAFALGAR RD.								

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Figure 10 Route Header Board for Route 008 in South Vancouver

Figure 11 Route Map for Route 102 in the North Burnaby Delivery Depot

Appendix B – Average Revenue for Three Months to Justify Success

Revenue from operations in 2018 is retrieved from Canada Post annual report (Canada Post, 2019). Amounts are in millions of dollars except for the percent of increase in the table.

Table 2 Desired Revenue for Three Months

Revenue from operations in 2018	Average Revenue for three months	Desired Revenue for three months to pay the project cost	% increase
8,700	2,175	2,175.1	0.005