

Montreal Central Station Development (MCSD)

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Somename Systems Inc.

ECSE 326 Software Requirements

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Group 10

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I. Observation

Date: Wednesday, October 10th 2018

Time: 4:00 pm to 6:00 pm

Location: Montreal Central Station

Reasoning: Our target persona would be the every-day commuters, those who use the station at least three times a week. We chose the period of 4 to 6 pm on a working day in order to catch the commuters as they return home from their work. In addition, preliminary research showed that our chosen time period was the peak of congestion the station experienced [graph displayed in observations].

II. Observed Personas

A. Target Persona

1. Commuter

As detailed in our requirements document previously delivered, the commuters live outside the city but take the train into the city for work and leave right after to make it home to make dinner. They would enter the station minutes before their train was due, leaving little room for error. The commuters would have their daily train schedule memorized like the back of their hand, and quickly became frustrated at delays. They would rarely stop to eat at a restaurant in the station, as they would be rushing to work or home. If they were to stop for food, it would be a small food item to go, such as protein bars, chips, or baked goods, or a coffee.

B. Other Personas

1. Mother/Father with family

A busy parent would arrive early at the station with their children, to be sure that their children don't create a small delay that would cause them to miss their train. A family passing through the station is most common on the weekend or in the afternoon, as this is when the children are out of school.

2. Student

The students who take use Montreal Central station arrive around 7-8 a.m. , and they return to take the train home around 5-6 p.m. once they've completed their schooling. They rarely spend time at the station so they can arrive at class on time. If they do stop at a cafe or other service, they are buying inexpensive food easily carried from the station to class.

3. Traveller

Travellers arrive at the train station to take a train and visit other cities, or they arrive at Montreal by train to visit and/or sightsee. They usually have more time to spend at the station than the commuters, therefore they are more likely to shop at the souvenir stores, sit down at a restaurant for a meal, or explore the exhibition at the station.

4. Train Conductor

The train conductors are part of the crew on board. They would arrive at the station before their shifts and leave in the evening after the shifts ended. They don't have much time to

spend at the station before their shifts start, usually just enough to buy drinks and simple breakfast/lunch. They look for spill proof packaged food that can be eaten easily on train. Because of the time of our observation period, we only saw one conductor come off duty during the two-hour period.

5. Ticket Seller

The ticket sellers usually sit at the counter to assist customers with ticket purchase. They arrive at the train station before their shifts, and usually get a lunch break between their shifts. The ticket sellers' work consists of long hour sitting behind the counter, therefore bottled drinks are convenient for them to have during work. However, with the advent of the internet, most tickets are bought online, so the ticket booth rarely sees high demand. Only two or three ticket sellers would be on shift during our observation period, and they would assist approximately four people every five minutes.

6. Children

The children are most usually accompanied by one adult. The main things the children look for at the station are usually food, snacks, or things that can make them less bored on train such as toy and magazines.

III. Our Process

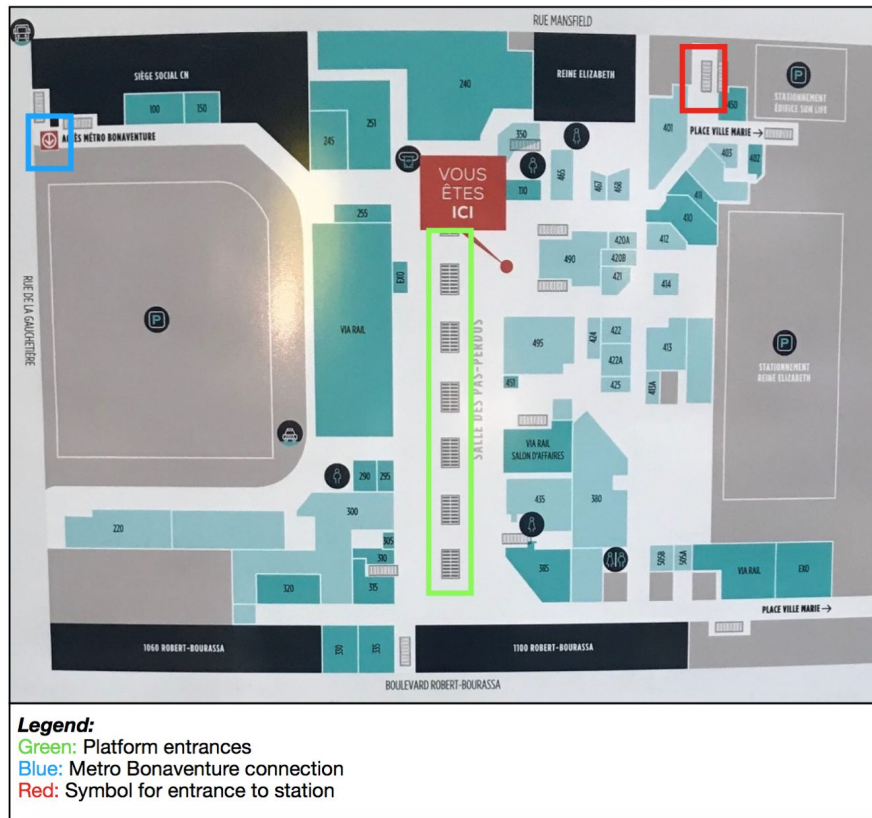
We entered the station at 4pm on a wednesday, and spent the first 15 minutes walking in a circuit around the main hub of the station, taking note of the restaurants and businesses that are located next to the platform entrances. After we had completed our circuit, we split up to observe each platform entrance to find our target persona. We observed that our target persona, the commuters, made up the majority of station traffic at the time. We were able to recognize them by their brisk pace through the station, business attire, and the suitcase or the professional satchel they carried. We spent the following 30 minutes determining any specific traits or actions of the commuter person. Afterwards we split up for about 30 minutes to find all the systems in the station and how they interact with passengers. Afterwards we regrouped to go over our findings. Finally we took a look at the food court and observed the restaurants that served customers, both sit down and to-go. After that, our observation concluded and we met once more to compile our observations and compose our document.

IV. Observations of Processes

A. Station Layout

The station has several entrances including one from each surrounding street (Mansfield, De La Gauchetière, Sherbrooke, and Robert-Bourassa). There are also entrances from the Metro Station Bonaventure as well as through the underground tunnel from Place Ville Marie. These can be shown in the figure below where the red box indicates the symbol for the entrance/exit. The main hall of the station is a simple concourse where there are the entrances to 14 different platforms. Surrounding these platform entrances are the ticketing booths and baggage check-in (for VIA rail).

Typically, the first few platforms (the ones toward the top in the **Picture 1**) are used for the EXO trains and the ones further down are used for VIA Rail. During the rush hour (in the morning around 7 a.m. and in the evening around 5 p.m.) more tracks are used for the EXO and during the day more are used for the VIA rail, depending on the train frequency and timing. The first few platform entrances did not have an escalator to go down, possibly because these tracks are more often used for the EXO, for which the users do not usually have big baggage to carry down the stairs, and more people rush onto these trains so stairs are more efficient. There are only a few seats in the middle of the concourse surrounding every platform entrance, therefore not many places for users to sit without going into a café or restaurant. There are no signs about Metro or Place Ville-Marie direction from the middle of the concourse, and the only map found was behind a wall and difficult to find.



Picture 1. The station map.

B. Arriving To Train Station

Commuters would arrive to the train station from all different entrances, mainly from the underground entrances coming from downtown where most of the Montreal offices are situated. As they came in, with hundreds of similar commuters, our target persona knew exactly at what time and track their train would be arriving. Commuters have a very efficient routine. Many of them walked straight to their platform without even looking at the train dashboard.

Many commuters arrive from the direction of Place Ville-Marie, visualized in **Picture 2**, most possibly because they work in offices located downtown. They mostly walk pass the station

and directly towards the Bonaventure Station (STM Metro station on orange line). Some, though only a very few, of the commuters stopped in the Couche-Tard at the corner of the central station. Mostly they purchased soda, packaged snack, cigarettes and at least one person bought a lottery ticket.

The on-train crew members, including train conductors, walked through the train station quickly into their check-in room. None of them were spotted to stop at the shops. The students and the travellers seemed to walk at a slower pace than the commuters, and they were more likely to stop at the food stops to buy food and drinks to go.



Picture 2. A simple map of Montreal Downtown Underground.

Source: Montreal Underground City

C. Determining Departure Platform & Time

Many commuters did not even bother looking at the train schedule to confirm and just walked on to their departure platform. This implies that many of them checked departures on their mobile phone or their computers at work before even entering the station. Some checked the train schedules right outside the platforms about 10 feet away from the entrance. They each spent no more than 20 seconds reading the schedule.



Picture 3. Hourly Approximation of the station crowd on a weekday.

Source: Google Maps Data.

D. VIA Rail

We observed a male customer in his early thirties having a coffee at a café in the concourse who would occasionally turn his head and look up to the platform display. VIA rail trains have one large platform display that shows the up-to-date information on all the trains. If a train is currently boarding people it will display the letter “N” next to the boarding time to indicate it is occurring “Now”. In addition, the remarks column will display “check baggage”. The board has a black background with bright orange letters so it is easy to see from far. However, it is difficult to see when the train is boarding immediately as the users have to focus to read the information and arch their necks to read. The board also shows whether the train is delayed and presents this in clear red letters. The customer would have to be within the concourse to be able to see the board, as there is no board in the cafeteria section with the multitude of restaurants. This can possibly lead the customer to sit at the café near the board.

E. EXO

For each platform entrance, there are two small screens on both sides that display the next incoming train and the platform number to go to organized so that the next incoming train is at the top. We observed customers who looked at the screen, noticed they had a bit of time and went over to the Couche-Tard to buy a small snack and a bottle of water. There is also one near the cafeteria but it was not seen used as often as the placing of the screen only allowed for customers passing by from cafeteria to concourse or vice versa to check the times.

F. Buying Tickets

There are eight kiosks at the ticket booth in which tickets can be purchased. However, at the time of observation there were no more than three ticket sellers occupying the ticket booth. The amount of passengers who required their service was low as well, the line built for 50 people rarely held more than two during our time at the station. The lack of customers in this line implies that most passengers buy their tickets online in advance. For EXO trains OPUS is used. There are three OPUS machines in the concourse that can be accessed to purchase tickets or refill OPUS cards to be used on trains to the suburbs of Montreal.

G. Speaker Announcement of Train Times

The train announcement was not done frequently as we heard it around two to three times within an hour. It was done in French and English (in this order) and informed the customers about delays and train boarding time. The announcement was very unclear and hard to understand. We were not able to gain access to the VIA rail business lounge, however videos online show that the announcements are also made inside and are clearer.

H. Walking To Departure Platform

Many commuters walked directly from the station entrance through the shops and straight through to their departure platform. Most did not check the time tables and just walked down the steps to the trains. The trains these commuters were boarding on were heading to Deux-Montagnes, Mont-Saint-Hilaire and Mascouche. Lines would grow quickly a few minutes before the track's train would arrive.

I. Waiting In Line For Boarding

A minority of the commuters waited in line for boarding. Only a few commuters had arrived early and they stood in a large crowd or line in front of their departure platform. Many of them had earbuds in and stared at their phones. The majority however did not arrive before their platform was opened. Two employees of the station stood at the top of the stairs to open them when the train is ready for boarding.

J. Scanning Ticket

We noticed some people would rush to tap their card onto a small machine before entering the commuter trains(EXO). The passengers who scan their ticket this way and only have to do so if they are using a solo ticket or opus card. If they have a monthly or yearly pass, they can just hop onto the train, which most customers were doing. After some research, it was shown that the customers must sign up on the EXO website for the yearly pass for which they are charged monthly. For VIA rail, tickets were scanned by an employee at the gate and also on the train.

K. Getting Into Train

The commuters taking the regional trains walked onto the train, find seats, then sit down using their phones or reading books or newspapers. Of those who were on their phone, most were either texting, talking on phone, or playing mobile games. The students in the train were either talking with friends or resting with headphones on. The people who were eating in the train would place their food on the seat table to allow more space.

L. Sit down restaurants and cafes

Sit-down restaurants looked mostly empty and people being served at them did not seem to be commuters. In contrast to restaurants, cafes such as Starbucks and Second Cup were quite full. During our observation Second Cup was the busiest place which had customers consist of people in business attire having meetings or conversations. While lines were long, it moved quickly as the average order time only took about 5 minutes to fulfill. Very few who ordered at

second cup left after they received their food, but rather sat and ate their meal in the café. Tim Hortons was also very busy and consistently had a line while we were at the station. Tim Hortons has no area to sit down so customers bought everything to go. The majority of customers purchased coffee.

M. Checking luggage

For customers on intercity (VIA Rail) trips there is the option to check larger bags. The bag check station is placed next to the ticket stall, so that after purchasing a ticket luggage can be easily checked. At the station the bag is weighed on a scale, and then handed off to the station employees. Through a background process through which we were not able to observe, the luggage would be stored underneath the passenger cars.

N. Picking up checked luggage

We observed customers arriving from an intercity trip. Around half of them walked directly to baggage claim. We followed them to the baggage claim area which was very analogous to baggage claim at an airport. Most customers stood and a few sat while a conveyor belt carousel moved bags in a circuit until they recognized their luggage and grabbed it off the line.

O. Train Timeboard

The time board is hung in the center of the station and lists the train timetable. The board includes the train number, destination, boarding time, departure time, track the train will be on, and any remarks on the state of the train. The board alternates between VIA Rail and EXO. The VIA Rail board displays both departures and arrivals, with a scrolling message displayed between the two boards. By contrast, EXO's board only displays the information for the next three trains for each of the three lines it serves Masouche, D-Montagnes, Mt-Saint-Hilare. Service to these three lines occurs about every twenty minutes. VIA Rail services train routes much farther so trains to the same place are less common, and if they do occur they are two hours or more apart.

P. Information Kiosks

VIA Rail has one large information Kiosk in the center of the station. One VIA Rail employee stands at the front and answers any questions a passenger may have. However, the employee will often walk with the person in need of assistance, leaving the post absent for anyone else who may need help. In contrast, EXO Rail has two representatives that remain stationary. In our time observing two people needed assistance at the EXO Kiosk, but only two customers required assistance at VIA Rail.