

*Design Research Report: Melbourne Metro Train
Investigation*

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EXECUTIVE SUMMARY

A double diamond analysis was implemented to assess the current metro train network system located in Melbourne Australia. The analysis is composed of an interview as a primary source of data featuring an individual who works as an insurance broker. The worker's daily schedule involves working 9 to 5, 5 days a week.

An empathy Map and Journey map were used in accordance to the interview. This information was used to cross analyze the subject's responses to the questions asked in the interview to provide a greater depth and understanding of the subject daily life routine. From this information, the pros and cons of the current metro rails system can be pin pointed.

Based on the subject's responses there were a number of issues relating to the current metro system mainly aimed at how time, comfortability and efficiency has affected his experience riding the Melbourne Metro train system.

Positives that were found from this analysis was that the subject found that the security and current standard of train facilities were beneficial.

As a result of the findings, it was concluded that several designs can be implemented to improve the overall experience of the subject. Based on the analysis, the subject recommended in response to;

Time – There should be a direct train that bypasses certain stops as it moves form Sandringham station to Flinders Street Station.

Efficiency – The current ticketing system should be removed and an online and mobile application for ticketing purchasing should be available.

Comfortability – Due to excessive amounts of commuters taking the train every morning, there should be more trains available including televisions for the ride home.

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INTRODUCTION

Melbourne Metro is the current train service in place in Melbourne city Australia. Melbourne Metro has over 100 train stations throughout Melbourne which stretch East, West, South and North of the city. The train stations currently run in accordance to a specific line. The trains move linearly based on the direction they are heading. All the trains meet at the same point in the city where there is a city loop that runs around key landmarks of Melbourne's Central Business District.

Everyday commuters take the Melbourne Metro to and from the city. The demographic of commuters ranges significantly across Melbourne depending on where the commuters are coming from. Depending on their location they may have a varied experience to others, where some train lines have significantly more stations, may require a train change over the duration of their journey or even feel significantly unsafe throughout their Journey.

Melbourne Metro has requested that an analysis on a commuter's experience take the train to gather data on where areas of their current system need improvement and where their current service is meeting the public's expectations. Based on this information Melbourne Metro can use the data with intention of improving their service in the future to accommodate to the needs of those who use their service.

A double diamond analysis will be used in order to conduct an analysis on the current Melbourne Metro Service. The double diamond method of analysis will involve an interview with a commuter that has agreed to take part in the analysis. Based on a constructed interview, the subject's daily routine will be mapped and an empathy map as well to understand their perception on the current Melbourne Metro system.

The subject that was selected for the analysis was a 45-Year-old male insurance broker. He is divorced and has 2 children and currently living alone. The subject currently resides in Sandringham located in the South-Eastern suburbs of Melbourne. He commutes 5 days a week, Monday to Friday to work, and on weekends tries to avoid using the train. He has a highly structured day rarely deviating from his routine.

Based on the interview, Journey map and Empathy map an analysis will be constructed based on his routine and thoughts on where Melbourne Metro can improve their service.

Following the analysis various methods, designs and prototypes can be discussed to improve the service as a whole based on time, comfortability and efficiency.

1 INTERVIEW

1.1 Subject Analysis

The subject of the interview in this research project was a 45-year-old male who decided to rename nameless for this study. Based on several questions to develop a sense of the individual's character it was found that he had grown up in Melbourne his entire life. HE has also lived in Sandringham his entire life. He has been married and recently divorced with two kids. He works 9 to 5, Monday to Friday, as an insurance broker for a company located within the Central Business District of Melbourne.

1.2 Interview Design

The interview behaves as a primary source of data. The intention of this data is to extract as much information as possible from the subject with the time and questions that have been proposed. The way the interview was to be conducted was by implementing various techniques to get the most information out of the interview as possible. Firstly, the interview was conducted in the place of subject's choice. This allows the subject to feel as if they have a sense of control during the interview process as well providing the subject with a place, they feel most comfortable in. This allows for a more organic response to the questions proposed (Anyan, 2013). Questions devised for the interview were planned to be quite tangible and organic. Rather than bombarding the subject with questions straight away, general conversation was used as an opener. Questions as simple as asking how work was today? Is this your favorite coffee shop? This builds a rapport with the subject. Being able to create a positive and comfortable environment for the subject it allows them to speak honestly as there is mutual respect developed between the two parties (Dempsey, Dowling & Murphy, 2016). Using positive and open body language as well as higher pitched tones elicits more of a response in an interview process. These behaviors encourage the subject to elaborate and talk more rather than speaking over the top and or using closed body language. This builds on the concept of allowing the subject to feel more comfortable based on the circumstances (Barkai, 1990). Open ended questions encourage the subject to further elaborate on concepts and ideas. This involves avoiding questions that can be answered with a 'yes' or 'no' response. Where questions are answered with a yes or no response the interviewer responds by asking for further elaboration (Doody, & Noonan, 2013). Lastly, emphasizing the participant's perspective and treating them as if they are the expert. The intent

is to avoid impacting the subject's responses based on loaded questions in order to acquire a natural response (Alby & Fatigante, 2014).

1.3 Interview Transcript

Refer to Appendix 5.1

1.4 Interview Analysis

The interview conducted shed a great insight into the commuter's thoughts and experiences using the Melbourne Metro Train Network. Having moved past the pleasantries of building a rapport with the individual meeting at his favorite coffee shop, he was come off as avoidant about talking about his personal life in relation to his job and family, by only give short hand responses such as "I'm just an insurance broker", "I'm separated from my wife". Though this is only relevant to small portion of the research it was becoming clear that it was point that was not be pushed for information.

After starting the probe by asking me to explain his day to me, it was clear he was very 'down the line' with his responses. His responses to his day were step-by-step methodical account of his day. Following each step taking a pause waiting for my response with a head nod or a sound of affirmation. From his tone that he used it sounded like his everyday commute was monotonous and almost burdened him.

His key points that he made in his routine was that he arrived at the train station 10 minutes early in order to find a car park and get a coffee. This also allowed for time if he needed to load money on to his Myki card. In some instances, he has missed trains due to the line of people paying for their train card.

Once he started to discuss his thoughts and ideas about the current system his demeanor changed. From shorthanded responses he was providing an emotive response with deep thought on a lot of the issues. Without using leading questions, he was providing information on possible improvements that he thinks should be implemented based on his experiences in other countries and their train networks such as Norway and Germany.

It is evident that he has been subject to a lot of thought about the topic. Based on the interview it was clear that time spent on the train was to long as if he missed a train it would result in him being late for work. The other being the efficiency of the network purchasing

train tickets has resulted in him being late to work. Lastly, comfortability of the ride was problematic due to lack of trains available at peak hour times. These were the key areas of focus that the subject was drawn talking about the most based on the significant thought he put into discussing them and talking about them the most without the interviewer leading into a response.

2 EMPATHY MAP

2.1 Empathy Map Application

In order to gain an insight into the subject's perception of their commute using Metro Train Network, creating and utilizing an empathy map can create a significantly greater understanding of an individual's experience's (Ferreira, et al, 2015). Ideally, creating an empathy map allows researchers to develop the subject persona in an attempt to imagine context's the user experiences and how they would feel based on all sensory awareness such as sight, hearing, smell. All these factors attribute to the user's experience. With this information we can extrapolate the data and attempt to fully immerse oneself in their thought process when dealing issues using the Melbourne Metro service, based on their values, goals and motivations (Ferreira, Barbosa & Conte, 2016).

The empathy map (figure 5.2) is based around a series of directed at the researcher to imagine how they feel following the interview. The empathy map was constructed based on the subject's responses involves questions such as; What do they see? What do they do?, How do they feel?, Who are empathizing with? These questions provide a basis of who we are interviewing and their perceptions.

2.2 Empathy Map

Refer to appendix 5.2

2.3 Empathy Map Analysis

The Empathy map (figure 5.2) clearly illustrates some key thoughts and experiences the commuter is subjected to on their daily commute. Following the interview process using the empathy map helps create a persona of the individual. It is evident that we are able to determine the individual's pains which is that there may never a change to the current train network and that the increasing population in Melbourne could make the morning commute

worse. Hence more reason to try and mend the issues sooner rather than later. Whereas we have the potential gains. Though some of the thoughts are quite substantial in that a lot of resources would be required to meet these needs.

Based on the subject's personal life, he would be working in the city to support himself and his family. It is a necessity that he makes this commute every day. This provides some perspective on how much the commute affects the individual's life through constant exposure to these experiences. These thoughts, feelings become more prevalent. This similar to that of what the commuter hears and says about the train network every day.

The commuter would be able to draw supporting conclusions by assuming the other commuters' complaints and expressions in the morning would give some support to the commuter's initial thoughts about the service. This is also evident when the commuter hears about work colleagues discussing the same issue. Even in relation to his family who take the train for other reason such as going to school and they share similar experiences despite their age and usage of the train network system.

3 JOURNEY MAP

3.1 Journey Map Application

The intent of the journey map that has been constructed based on the subject's responses to the questions posed in the interview. The journey map provides another form of research to help visualize where problems are encountered throughout a process that might not be so clear to the subject (Halvorsrud and Følstadm, 2016). The use of the journey map allows a routine to be dissected based on the relative occurrence of events/stages of the day. From this information problems can be easily identified and easily determined if they are isolated or linked with other stages of the process. The journey map also aides in seeing both the benefits and problems in each process. This is useful tool to use in relation to cross examining data and provide another perspective on the problem rather an interview (Lemon, and Verhoef, 2016).

3.2 Journey Map

Refer to appendix 5.3 (Rosenbaum, Otalora, & Ramírez, 2017)

3.3 Journey Map Analysis

On analysis of the Journey map that has been created based on the subject's average day to day routine, it can be seen that the individual is very time conscious. He aims to arrive at his destinations early in case there is any unexpected changes to his morning schedule. Based on this, it is evident that all stages are connected to one another. If there is delay in the morning and a train is missed, the commuter's day throughout the rest of the stages would be subsequently affected by it. Clear indicators of this the ticket machine. If the line is too long for the ticket machine, he commuter could miss the train as a result getting to work late or not being able to get a seat for the long journey to the city. Another variable is finding a car park in the morning. If the commuter doesn't arrive early enough, he may miss out on being able to park the car again resulting in a missed train. As a result of time it has a direct impact on the train services efficiency and comfortability for the commuter. If time can be managed correctly by Melbourne Metro, then then efficiency and Comfortability for the commuter would be improved.

The journey map has also illustrated some underlying issues with the train service which were not directly spoken about by the subject. In discussing his daily routine, it was clear that finding a car park in the morning is a subsequent issue with the service as well as general efficiency of people getting in and out of the train. These are problems that didn't appear to be detrimental in the interview has proven to give a wider lens to improvements that could be made to the service.

There were some benefits were also listed that were not discussed in the interview and that includes having a coffee prior to work. The current train service provides commuters with the ability to drink coffee on the train in the morning create a comfortable ride. Also providing commuters with time to relax before going to work if the train isn't too crowded of a morning. The Journey Map only covered the morning train ride to work. The journey map is missing key information about the ride home. As it were mentioned in the interview there are other parts of the service which are appreciated such as the extra security of a night coming home from work.

4 RESEARCH ANALYSIS

4.1 Research Analysis

Based on the 3 tools used; interview, empathy map and journey map a cross analysis of improvements to the current metro train network can be seen. Based on the findings it was found that the commuter would like to see improvement in 3 key areas of the service; time, efficiency and comfortability. Based on these three key concepts a series of potential design improvements were discussed in each of these areas. Although their areas that require significant improvement the plausibility of them happening in the near future is questionable.

Keys areas for improvements were identified as

- more trains
- directs trains to the city
- redesign the train floor plans
- install television monitors on trains
- New payment method using an application

The benefits that were found in current system include the facilities such as coffee shops at the train station and security that is available to all commuters when coming home from the city. In relation to comfortability the trains have climate control and rarely late.

4.2 Potential Deign Improvement

Based on the data that has been recovered from the primary source of data several areas for improvement to the Melbourne Metro train network have been identified. Potential service improvements are focused on the three identifiable areas for mentioned by the subject in the interview process; time, comfortability and efficiency.

Going to work everyday time, is an important factor of the subject's morning. The subject has little time between arriving at the station and catching the train. It is evident that more time is required in the morning. From the information that has been gathered, creating more time in the morning the passenger can be achieved in a couple of ways. The first way is by implementing an express/direct route train from Sandringham station to Flinders Street Station. This would mean that there would be potentially 1 stop in between Flinders Street and Sandringham Station or a direct route. Due to the current duration of the train trip being approximate 40 minutes every day, reducing the number of stops could potentially cut the trip duration in half.

In relation to efficiency of the passenger's morning commute, they made a particular effort to discuss the method of payment to take the train every morning. Instances where the ticket machines are broken and or there is a line to load money on to the Myki card has resulted in trains being missed. The possibility of using technology that is already implemented around such as in Norway, maybe be beneficial in Melbourne also. Removing the necessity for of machines to pay for the train ride removes issues relating to ticket inspectors and debating whether or not the machines were working. Turning to a paid application can allow passengers to pay on the train if they didn't have time in the morning and also reduce traffic of people being in the terminal lining up to upload money.

Comfortability was the last identifiable theme discussed by the passenger. He made specific reference to lack of stimulation and little personal space on the train. Potential designs to increase comfortability on the train ride would include a redesign of the floor plan and seating arrangement on the train to utilize the space in a carriage. More trains during peak hour times will disperse the number of commuters per train more evenly resulting in more space for commuters. Lastly, installing televisions to help provide commuters on long journeys with some form of visual stimulation.

4.3 Process of Implementation

Based on the identified improvements to the Melbourne Metro train network service it is evident there are adjustments that can be made. The plausibility and likelihood of these adjustments being made however is dependent on numerous variables based on funding, time and resources.

Process of implementation in relation to the improvement of service in relation to time could be quite difficult to achieve. Prototyping would not be difficult to achieve by using a couple of test days to determine the duration and time saved of having a trip that is direct from Sandringham to Flinders Street Train station. The issue would be upholding this service. There could issues where other trains online stopping at every station would be holding up the direct line train. This could also increase the likelihood of train accidents due to level-crossing and the high speeds of trains. A variation of this improvement could be reducing the number of trains stops by half rather than eliminating all trains stops.

efficiency of the Metro Service could be easily implemented. The current ticketing system isn't required to be removed as there are a significant portion of people who still own and have paid for the Myki Service. In conjunction with Myki a supporting application could be created to improve efficiency. The system could be designed and or bought from an external contractor and prototype for a year or less. Based on the results there could be the chance of implementation of the service. Issues relating to this service though is that there could be a significant amount of money that would be required to prototype and design the app.

In relation to the comfortability of the train service there are several alterations that could be made. Following the international standard of public transport, like that in Germany televisions that are fixed to the roof of the train only contain substiles and imagery could be installed quite easily to the current trains. They are fully equipped with state-of-the-art safety and climate control, the possibility for implementation is quite high. The relative cost of installation would be significantly low in comparison to redesigning the entire train carriage to fit more people/sits on the train. The likelihood of implementing more trains in the morning would most likely result in less train services to other train lines due to the limited number of trains available. Purchasing more trains is a costly and lengthy process in order to achieve a desired result.

5 APPENDICES

5.1 Interview Transcript.

Interview Transcript

Interviewer: Cameron Beveridge

Subject: Identity Withheld

Location: The Bluff Café

Date: 2 April 2018, 1:00pm

Interviewer: Hi how are you going today?

Subject: I'm good thanks, how are you?

Interviewer: I'm not doing too badly actually. Nice coffee shop that you chose to meet at? Good coffee here?

Subject: Yeah, I come here most days on the weekend with my kids. They have the best coffee trust me.

Interviewer: Haha I am glad to hear. Do you kids still live at home or are they adults now?

Subject: No, no, they aren't too old. One is at the University of Melbourne and the other goes to school in Windsor.

Interviewer: you must be busy looking after the two kids and working

Subject: Well not so much, they live with their mother since we separated so it's not as busy as you would think.

Interviewer: I take it the kids take the train most days then?

Subject: Yeah, they do pretty much every day.

Interviewer: How is that for them?

Subject: Yeah, they aren't too fond getting up that early in the morning and dealing with the rush hour commute.

Interviewer: Do you find you self-taking the train as often as them?

Subject: Train? Well, I take them every day. I travel from Sandringham to Flinders street and I take that same train home again. So you can imagine how I feel about trains.

Interviewer: Hahaha, I'm sure I can, but can you please elaborate on why you take the train?

Subject: I work for a company on Collins street. So it is necessary for me to take the train every day. I refuse to pay for parking or being jammed in traffic for 2 hours every morning. I wake up and make sure I am on the 8:02 train from Sandringham, buy a coffee at the train station, hopefully top up my myki before my train leaves, I then enjoy the long and cramped

train ride and arrive at Flinders street station by 8:42 and walk up to the office and get there by 9.

Interviewer: So how long are you on the train for then?

Subject: 30-40 minutes. Depending on delays. But this takes longer because I get to the train station 10 minutes before to park my car if I'm lucky to find a car park, and if I have enough time to top up my train ticket and have a coffee. And I also have to factor in the time it take for people to let me off the train when I arrive at Flinders Street station haha.

Interviewer: How do you feel about the duration of the trip?

Subject: For me it is too long, considering I get on the train at the end of the line, trains need to be faster getting to the city, there are too many stops with too little distance in between especially through Brighton they have 3 train stations stretched across one suburb.

Interviewer: How many stops are on the Sandringham line?

Subject: 14 including Flinders St, it's boring sitting on a train between stops.

Interviewer: Boring? Do you feel as if that is making you experience on the train less comfortable?

Subject: Trust me, from what I've seen in other countries around the world major adjustments could be made, I remember seeing tiny televisions showing sporting events and news with subtitles.

Interviewer: So something more stimulating to make the time go faster?

Subject: Exactly, I don't mean music or anything like that, but something that isn't looking at brick walls as well drive past or an advertisement.

Interviewer: I understand where you are coming from especially when you are taking the train every day.

Subject: We that's it, I'm not the only person doing this every day, you should see how busy the trains are of the morning. Sometimes I feel that everyone who is starting work at 9 is taking the same train as me so they have enough time to walk to the office from the train station.

Interviewer: It sounds like the number of people are a bit of an issue?

Subject: Of course it is, I swear they need more trains running at that time just to cater for the all the people. I've tried taking an earlier train but it is just as busy and I can't afford to take a later train because I'll get to work too late.

Interviewer: Could you take another train line?

Subject: It would take twice as long driving between stations trying to find a car park when it is that busy.

Interviewer: Do you think the service you are paying for is worth the money?

Subject: Honestly no. The amount I spend on taking the train every day, roughly 10 dollars, would cost the same amount in petrol for me.

Interviewer: What service would you expect for 10 dollars a day?

Subject: a commute that is more beneficial than me taking my car to work in relation to time, money and comfort, and I'm not getting that.

Interviewer: How do you find the myki system?

Subject: I hate it. Regularly machines are broken and then I am held accountable for not paying for their service. In Norway I know they have an app where you can make an instant purchase of a ticket and the officer can scan it. I don't know why the systems aren't more intuitive here honestly. We only just managed to get rid of the old ticketing system.

Interviewer: It's clear that there are a lot of areas that need improvement, but what is the advantages of taking the train why not drive then?

Subject: You are right, of course the issues with the service stand out more than the positives. Service can always be improved. What I do like about the current service is that most of the train stations have good facilities like coffee and food, it's exactly what I want on my way to work if I'm running a little bit late.

Interviewer: It is good they cater for certain individuals and their lifestyle choices. Does anything else stick out?

Subject: Since they have placed protective service officers on all the platforms, I feel significantly safer coming home late from work. I think that benefits everyone.

Interviewer: So metro does have some more beneficiary services than you thought when you buy your ticket?

Subject: Yeah I guess they do. Mind you in the summer though I am glad we do have air conditioning, there are so many places that even lack that with their trains.

Interviewer: From what I have heard it sounds like the travel time, payment method and comfortability are the major issues related to your journey on a regular commute. What changes would you like to see happen?

Subject: Having spoken to you about this, numerous thoughts have crossed my mind about a variety of these issues.

In relation to my time spent on the train, due to the number of stops in between Sandringham and flinders street I think it would be beneficial if they had a direct train running straight through the line making maybe one stop halfway. A non-stop train would half the time it would take to get to the city. Or better yet they need a connecting train line that is like the

loop in London. This way if there are any delays, I can always take a different train line with ease.

Interviewer: And how about the payment method and comfortability issues?

Subject: Well I think the comfortability issue can be sorted quite easily. I think they just need to place more trains on the train line. That way trains can leave every 5 minutes rather than 10. Have more trains during the busy period to reduce the number of people. Plus, like I said earlier, just some little television with some live news would be nice for the ride home. You think they would have enough money for that.

Interviewer: And the payment, I really like your idea on an alternative payment app.

Subject: Yeah? Like I said earlier, I saw the system in Norway. So even when inspectors get on public transport it causes people to buy tickets. Rather than the inspector's being law enforcement officers they behave more regulators ensuring people have purchased tickets. You would think it might even be cheaper for them because they don't to sell cards, and fixing their ticket machines

Interviewer: I think you are right, there has been a lot of negative publicity surrounding Myki Card since it's release.

Subject: I'm not an expert but hey, if they are saving money maybe they could put that money in to better resources such as more trains and comfortability.

Interviewer: Do you think anyone else has these same views as you?

Subject: Absolutely, you just have to look at the faces of the people on the morning commute, it just constant bickering between the kids going to school about how crowded it is.

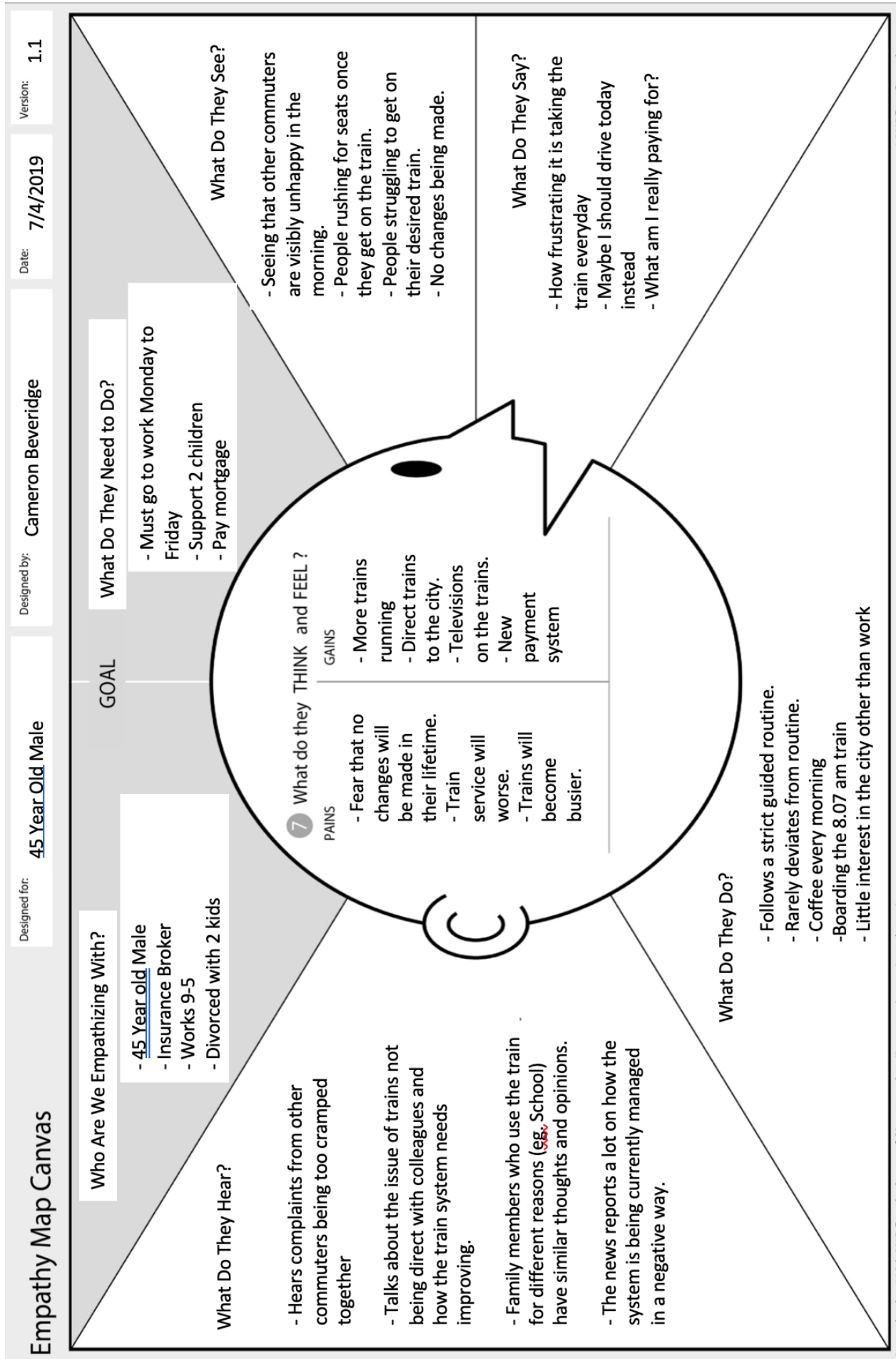
Interviewer: And work colleagues?

Subject: It's our favourite thing to do is to complain about the current state of the train network.

Interviewer: Well I think I have everything I need. Thanks for the good coffee, try and enjoy work tomorrow.

Subject: I'll try.

5.2 Empathy Map



5.3 Journey Map

Subject: 45 year old Male **Occupation:** Insurance Broker
Train Usage: 9:00am – 5:00pm Monday – Friday
Journey Map Time Frame: 8am to 9am

STAGE	Train station Arrival	Ticket Purchasing	Boarding the train	Riding the Train	Departing the Train
Action/Motivation	<ul style="list-style-type: none"> - Finding a car park in order to board the train to work. - Arriving 10 minutes earlier than the train. - Ordering a coffee at the train station to save time in the morning to drink on the train to work. 	<ul style="list-style-type: none"> - Check to determine if myki has money to take the train. - Use the Myki machines to put more money on the card. - Tap on to pay for the train. 	<ul style="list-style-type: none"> - Waiting for the train to arrive to the platform. - Board the train once all passengers have gotten off. - Take a seat on the train 	<ul style="list-style-type: none"> - Transport from home to the city. - Attempt to complete work on the train. 	<ul style="list-style-type: none"> - Standing up and preparing to depart train. - Exiting the train when the doors open. - Get off the train before everyone else tries to get on.
Problems	<ul style="list-style-type: none"> - Finding a car park in the morning can be problematic due to the amount of people taking the train at a similar time. 	<ul style="list-style-type: none"> - Ticket machines maybe broken and therefore cannot top up money on to the card. - Limited ticket machines at a train station could result in a missed train due to waiting. 	<ul style="list-style-type: none"> - Due to a large number of commuters taking the train to work in the morning, it is difficult to board the train at the correct time - Train carriages that are overcrowded results in a less comfortable ride due to space or not obtaining a seat. 	<ul style="list-style-type: none"> - Lack of stimulus in the morning, resulting in an unsatisfactory ride. - Not enough space to on the train to be comfortable - Other patrons reading newspapers/listening to loud music. 	<ul style="list-style-type: none"> - Other patrons trying to get on the train not allowing others to get off first. - Myki machine may not be operating to tap off the train.
Opportunities	<ul style="list-style-type: none"> - Arriving to work earlier than train allows for a less likely chance of missing the train to work. - Having a coffee at the train station saves time in the morning. - Arriving early allows you to complete other tasks for any unexpected events. 	<ul style="list-style-type: none"> - Ensuring there is enough money to use the train service. - Efficient way to board the train by simply tapping to pay for the service. 	<ul style="list-style-type: none"> - Waiting for the train sooner increases the likelihood of getting a seat. - Waiting for other passengers to depart first allows for greater efficiency. - Getting a seat means a more comfortable journey. 	<ul style="list-style-type: none"> - Riding the train allows for less time spent in traffic. - Save money on petrol. - Saving time. - A chance to relax before work. 	<ul style="list-style-type: none"> - Increased efficiency getting to work avoiding car parking. - Enjoyable work for exercise walking from train station to work.

References

Ferreira, B. M., Barbosa, S. D., & Conte, T. (2016, July). PATHY: Using Empathy with Personas to Design Applications that Meet the Users' Needs. In *International Conference on Human-Computer Interaction* (pp. 153-165). Springer, Cham.

Rosenbaum, Mark S., Mauricio Losada Otalora, and Germán Contreras Ramírez (2017). "How to create a realistic customer journey map." *Business Horizons* 60, 143-150

Lemon, Katherine N., and Peter C. Verhoef, (2016). "Understanding customer experience throughout the customer journey." *Journal of marketing* 80.6, 69-96.

Halvorsrud, Ragnhild, Knut Kvale, and Asbjørn Følstad (2016). "Improving service quality through customer journey analysis." *Journal of service theory and practice* 26.6, 840-867.

Ferreira, Bruna, et al. "Designing Personas with Empathy Map. (2015)." *SEKE*. Vol. 152.

Anyan, F. (2013). The influence of power shifts in data collection and analysis stages: A focus on qualitative research interview. *The Qualitative Report*, 18(18), 1-9.

Dempsey, L., Dowling, M., Larkin, P., & Murphy, K. (2016). Sensitive interviewing in qualitative research. *Research in nursing & health*, 39(6), 480-490.

Barkai, J. L. (1990). Nonverbal communication from the other side: speaking body language. *San Diego L. Rev.*, 27, 101.

Doody, O., & Noonan, M. (2013). Preparing and conducting interviews to collect data. *Nurse researcher*, 20(5).

Alby, F., & Fatigante, M. (2014). Preserving the respondent's standpoint in a research interview: Different strategies of 'doing' the interviewer. *Human Studies*, 37(2), 239-256.