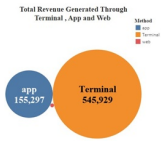


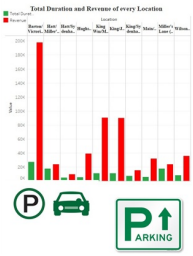
Analysis





Making Life Easier

As we are all moving towards digitalization on every aspect of the life from making payments electronically to switching on the house lights with voice commands , the question which arsies is why we are lacking to use passport app for making payments for parking ? As per data and the visual we can interpret that people are still happy with the old terminal pay at the parking instead of using the app or web . The main reason behind that is because people are scared to use the app as they might thing the interface is not easy to learn and all that can be shown on the report where most of the revenue of 2021 was generated through paying through terminal. Even the revenue of the app and web was no where around for that of terminal . All these problems can be overcomed firstly by giving knowledge about how to use the app? Secondly by not only restricting the passport app for payments but also by adding some features like booking of the parking spot in advance , see the availability of spaces in that particular parking lots, searching the nearest parking lot to the desired destination. Moreover , making the use of app compulsory in some small lots which are not very busy to see if the method is successfull or not.



Installation of License Plate Recognition Sensor in Busiest Parking Lots

The idea of installing license plate recognition sensors parking lots of Barton/Victoria - General Hospital, King WM/Mary can be a solution for auto-checking license plates for parking and security enforcement. It can help to decrease the overhead cost of permittin and enforcement and parking strategies can be manag in much more easier ways.

Some benefits after the installation of system are:

1) Accurate and real-time enforcement details, which will result in improved compliance and decreased labo
2) Reduced permitting and enforcement cost when the automation of parking management is done.
3) Increase of revenues because of improved compliance.
4) Enhancement of customer experience with pole/gate less entry and free flowing traffic.

Some of the Key Features of installing the system are:

1) Auto Chalking
2) GPS Mapping
3) Reducing Labor Costs
4) Identifying Repeat Offenders
5) Capturing Reflective and Non-Reflective Plates
6) Capturing images to support violations
7) Real Enforcement of all the parking permit types
8) Notifications of illegal parking

Benefits to Regular Customers

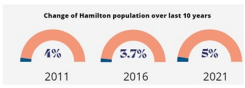
Many times, it happens that customers don't have much knowledge about different parking permits, and they park their vehicle in the lot by paying regularly. The data also reveals that the revenue is increasing through the daily vehicle parking by each person. So, people who are regularly parking can apply for monthly parking card or permits of six months instead of paying daily depending to the policies of parking lots, this will help them in a little more saving and the revenue of parking place will increase. As a part of daily/ monthly parking system, regular customers must be rewarded with some vouchers or gift coupons so that they can stick to the parking and can also become a part of the loyalty program. This will help the parking place to increase engagement with the customers and through this act they can attract more people and increase the revenue. Other and the most effective way is of updating the passport app with a feature where people can directly apply for the permits and can redeem all the vouchers instead of going to the parking municipality. In this way two benefits can be achieved :-

1) Reduced Labor cost
2) Customer experience which is the most effective and useful way to attract more customers and increase revenue





Hamilton has less ratio in public parking spaces than Berrie and Toronto but the population is not the only factors to the need of parking spaces. Other factors such as employment rate, tourism attractions and special events contribute to the supply and demands of parking.

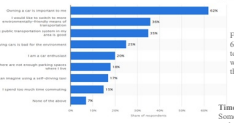




Impact of Population on Parking Lots Over The Years

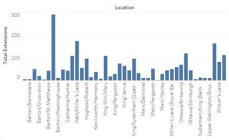
Parking is one of the key components especially in Hamilton Region and with incressing population oven the years problems associated with parking hss also incressed. High population has resulted in high percentage of vehicle ownership in Hamilton due to which parking in some areas has become a confusing situation for a lot of people.

Parking lots of bus station , shopping centers, hospitals are the busiest lots and problems in these lots are an everyday occurance.
The problems which communityy faces every day are
1) Inefficient use of exisiting parking capacity
2) Excessive automobile use which is very bad for the environment
3) Loading and unloading zones
4) Inadequate pricing methods
The best solution to manage parking with such a population is by motivating people to use passport app if they want to park their vehicle in parking lots.



From the survey results conducted in 2021, 62 percent of the respondents show interest toward owning a car. That indicates there will be a higher needs to parking spaces in the future.

Time Extention for Each Location



Time Extension by using Passport App

Sometimes it become very frustating for the parker to go back to the terminal and buy time for extention. Feature of extending the time through the Passport App gives the parker options to extend without travelling back to the terminal. This will help in good user experience and a step towards development. From the graph it can be seen that parking lot of Barton/Victoria-General Hospital has the highest number of time extentions.

Conclusion

After analysing the data and visuals it can be seen that municipal parking of hamilton needs to upgrade the features of the app by adding reservation of the parking lot for 10 min in advance, show the availability of parking spaces in the lots , time extention through app and installing LPR systems at the busiest parking lots like Barton/Victoria-General Hospital in starting and if successfull installation of the system in all the lots.

References

Global Consumer Survey 2021, February 2022, Retrieved from https://www-statista-com.ezproxy.mohawkcollege.ca/forecasts/998460/attitudes-towards-mobility-in-canada

City of Hamilton Parking Master Plan. Prepared for City of Hamilton by IBI Group August 17, 2021. Retrieved from https://www.hamilton.ca/city-planning/master-plans-class-eas/parking-master-plan

https://open.hamilton.ca/search?collection=Dataset&sort=name&tags=parking%20%26%20transportation

Municipal Parking Lots, Retrieved from https://open.hamilton.ca/datasets/d56d996d4725499da2a5555aa5e5b651_5/about

Parking lots - Toronto Parking Authority - Green P - rates – maintenance, Retrieved from https://www.toronto.ca/311/knowledgebase/kb/docs/articles/special-purpose-bodies-and-external-organizations/toronto-parking-authority/parking-lots-toronto-parking-authority-green-p-rates-maintenance.html#:~:text=The%20Toronto%20Parking%20Authority%20(TPA,approximately%20181%20parking%20surface%20lots.

Downtown Parking Strategy City of Brampton, May 2009, Retrieved from https://www.brampton.ca/en/residents/Parking/Documents/Downtown-Parking-Strategy.pdf

Parking for a Modern City (McMaster) — CityLAB Hamilton

Focus on Geography Series, 2021 Census - Hamilton (Census metropolitan area) (statcan.gc.ca).