

TOP OF THE ROCK GROUP #5



DOCUMENTATION

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INTRODUCTION

The building

Top of the rock, the upper part of Rockefeller Center, is an observation point on the higher floors of the highest skyscraper of Rockefeller Center, in particular the Comcast Building, in the American city of New York. The visitor is taken to the 68th floor by the entrance on 50th Street between 5th and 6th Avenue and a lift with a transparent roof. The Chrysler Building, Central Park, Times Square, One57, the Hudson River, the East River, the Brooklyn Bridge and the Statue of Liberty are visible. Since the visitor also has a view of the Empire State Building from here, Top of the Rock is generally considered the best vantage point in New York.



The observation deck at Rockefeller Center originally opened to the public in 1933 but was closed in 1986. A newly restored and improved Top Of The

Rock opened to the public in November 2005. The observation deck offers 360-degree views of the New York City skyline.

Top of the Rock Facts

- Top of the Rock is a six-level observatory atop the Art Deco 30 Rockefeller Plaza
- The upper decks are 850 feet above street level
- Originally designed to evoke the upper decks of a 1930's grand ocean liner, the observation deck was outfitted with deck chairs, goose-neck fixtures, and large air conditioning vents intended to look like the stacks on a ship's deck

Issues

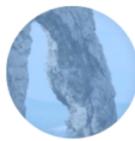
From our researches on the web (in particular on TripAdvisor website) we discovered the main problems that affect the customers during their experience on the top of the building. They result to be related to multiple factors, so we tried to summarize them in order to create solutions.

In the table below we wrapped up the main problems and then they will be explained:

#	Issue
1	The view
2	The weather
3	The money/value ratio
4	Long queue
5	Rude personnel

The view

A lot of people complained about the view because of the recently construction of two high rise buildings that cover central park. Of course, they represent something ugly to observe as well as an obstacle to get the best from the landscape. This issue does not motivate people in spending money for the tickets since the experience is to have a great view.



Reviewed March 9, 2019

Not worth it

Although the view is great, it does not offer a good view of central park anymore because of two new high-rises under construction. Our biggest problem was the absence of a waiting area on the ground floor which meant we were constantly told to move around the hallway until it was time to enter the security area. Personnel was unfriendly throughout the whole experience. If you've already gone up the ESB you can better spend your cash elsewhere.
[Show less](#)

Date of experience: March 2019



Recensito il 20 febbraio 2019



da dispositivo mobile

Not worth the visit

[Google Traduttore](#)

So there is a lot of history with top of the rock. However the views of central park from the top i feel have now been ruined due to the construction of 2 high rise buildings which is a shame. Worth a visit for the history but dont be expect to be wowed by it.

[Mostra meno](#)

Data dell'esperienza: febbraio 2019

The weather

Climate represents a huge problem for the customers since it is really difficult to predict it for people who books in advance (most of them are in New York for a very short period of time). So, the weather represents an important factor in game that can determine if the experience will be appreciated or not.



Alexica P

3 1

○○○○○ Recensito il 12 settembre 2018 □ da dispositivo mobile

Overpriced and pray for good weather

[Google Traduttore](#)

I waited for this deck as the cherry on top of the cake, last thing to do before going back home. Boy was i dissapointed. First of all, the price of the ticket is almost 40 dollars, and the only thing that I payed for, the view, was not there. **On top it was a dense fog, couldn't see anything.** The guys selling the tickets should at least tell you if it is worth it to go up in the first place, not waste 40 bucks and time to stay in the clouds and see fog. Maybe a partial refund would be a good idea. Would not recommend unless you are sure on top the weather is clear.

[Mostra meno](#)

Data dell'esperienza: settembre 2018



Praeceptor
Southsea,
Hampshire

19 24

○○○○○ Recensito il 30 dicembre 2015

Choose a clear day if you can!

On the day we visited, visibility was zero. You could only see the ground below the Tower, but on arrival we were offered the opportunity to change the tickets to another day. Unfortunately our visit did not permit this, so we went up into the... [Più](#)

Data dell'esperienza: dicembre 2015

The money/value ratio

How can you determine if the experience you had on Top Of The Rock has been good or bad? A lot of customers thought that it does not worth it for a various range of reasons. One of them is for sure the price, that can be compared to cost of tickets of the competitors (e.g.: Empire State Building and One World Observatory) and the related views. This would be even more clear if it is a family trip.



Mackee23

9 6

○○○○○ Anmeldt d. 12. juni 2017

A waste of money

This is really not worth the money. They have strict entrance times and when you get up to the top it is extremely crowded. It then takes ages to get down, so you end up waiting in line for almost an hour just so you... [Mere](#)

Dato for oplevelse: juni 2017



●●●●● Anmeldt d. 19. oktober 2016 □ fra mobile enheder

Too expensive

Great views but extortionately expensive . 120 dollars for two adults and two young kids. They then try to charge you 30 dollars for a photo. Complete rip off.

Dato for oplevelse: oktober 2016

hertsman2015
Hertfordshire,
Storbritannien

20 3

Long queue

A crowded mezzanine represents an annoying situation in which customers prefer to take part. This depends of course from the inflow of people in a particular day that can be difficult to predict (e.g.: not a public holydays).



●●●●● Recensito il 7 luglio 2018 □ da dispositivo mobile

Could be great, but huge lines, even at midnight.

Google Traduttore

Nice views from this building. Nothing like One World Trade Center, or the Empire State Building. Do not let what... [Più](#)



●●●●● Recensito il 31 agosto 2015 □ da dispositivo mobile

LONG lines

I chose this because of the impression they sold limited tickets . I have never spent so much time in so many ridiculous lines. The view was great IF you could get close enough. But with so many people it was possible. Not worth \$30!!

Data dell'esperienza: agosto 2015

Skyllonen
Olympia,
Washington

31 4

Rude personnel

A visit in someplace can be ruined if you find some rude personnel that in cases of pressure (e.g.: overcrowded situation) reply to you in an impolite way. They should be always very kind with you since the customer is “always right”. The property management should include some courses for the staff in order to be ready in all kind of situation that can happen.

●●●●● Recensito il 7 settembre 2018 □ da dispositivo mobile

Rudest staff in New York

[Google Traduttore](#)

This attraction hosts the rudest staff I've ever encountered even for nyc standards. There were too many people up there (heaven knows what you would do in an emergency) and the staff were incompetent, verbally aggressive and downright disrespectful. Worst attraction in New York save your money because visiting TOTR is like throwing money in the bin.

[Mostra meno](#)

●●●●● Recensito il 22 luglio 2018 □ da dispositivo mobile

Overpriced and rude employees made the experience a bad one

[Google Traduttore](#)

We were charged \$5 extra because supposedly at 7pm it was already dusk. Total for two adults almost \$100 and... [Più](#)



●●●●● Recensito il 1 aprile 2015 □ da dispositivo mobile

Treated awfully.

The staff here were very rude and unorganised. Took ages to get to the top and it was very stressful. Stick to the Empire State Building, this is a waste of time.

Hilts94

8 8

BUSINESS MODEL

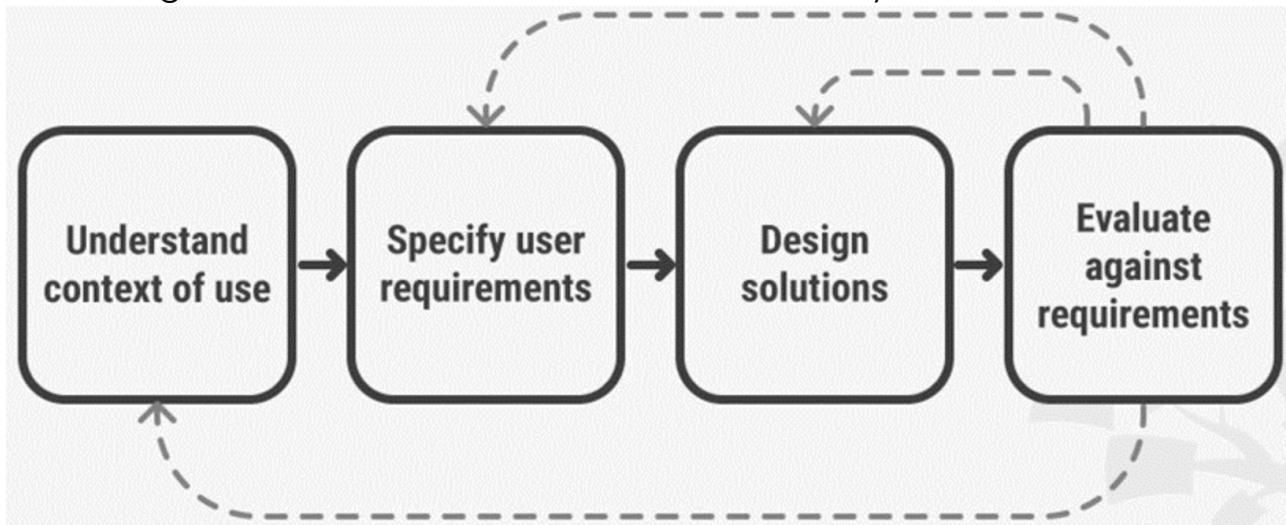
User-centered Design

User-centered design is an iterative design process in which designers focus on the users and their needs in each phase of the design process. UCD calls for involving users throughout the design process via a variety of research and design techniques so as to create highly usable and accessible products for them.

User-centered design demands that designers employ a mixture of investigative (e.g., surveys and interviews) and generative (e.g., brainstorming) methods and tools to develop an understanding of user needs.

Generally, each iteration of the UCD approach involves four distinct phases. First, designers attempt to understand the context in which users may use a system. Subsequently, we identify and specify the users' requirements.

A design phase follows, wherein the design team develops solutions. The team then proceed to an evaluation phase, and assess the outcomes of the evaluation against the users' context and requirements so as to check how well a design is performing—namely, how close it is to a level that matches the users' specific context and satisfies all of their relevant needs. From here, the team makes further iterations of these four phases, continuing until the evaluation results are satisfactory.



Target Group

Target group is the end consumer to which the company wants to sell its end products. Target marketing involves breaking down the entire market into various segments and planning marketing strategies accordingly for each segment to increase the market share.

Here are some questions to get you started:

- Are your target customers male or female?
- How old are they?
- Where do they live? Is geography a limiting factor for any reason?
- What do they do for a living?
- How much money do they make? This is most significant if you're selling relatively expensive or luxury items. Most people can afford a carob bar. You can't say the same of custom murals.
- What other aspects of their lives matter? If you're launching a roof-tiling service, your target customers probably own their homes.

In our business case the target group taken in consideration is "Tourist in NYC". In particular we that there are around 60 million tourists in NY every year and around 2.5 million visiting Top of The Rock.

This particular group is interested in:

- New experience to memorize
- Photos
 - City
 - Themselves

So in order to be consistent to what they request what we offer is : a "Must Do" experience in New York, a unique photos possibility and a deep knowledge of New York.

Than we asked ourselves how can we get customers more involved and we came up to these ideas:

- Making each visit different
- Unique features through the app
- Make customers want to return

Persona

A persona is a fictional character who represents the essential traits of your customers.

Persona do's and don'ts

Should:

- be based on user research
- be based primarily on qualitative research
- be focused on users' goals
- be based on common behavior patterns
- be specific to your design context or problem
- come to life, and seem like real people

Should not:

- be focused on stereotypes or generalizations
- be an 'average' of observed behavior patterns
- be based only on user roles
- be based only on information gathered from subject matter experts
.as they cannot completely represent end users

We have reported here our 2 samples.

Marcus Hernando:

Marcus is a Spanish college graduate who is 32-year-old, and visiting NY for the first time with his girlfriend. Marcus loves his work as a banker and has ambitions of being the manager of his division. Marcus also likes going out with his friends and especially enjoys golf trips. This means Marcus doesn't have a lot of time nor dreams about settling down and creating a family.

Marcus values time and doesn't like wasting it. When Marcus is traveling he wants to see and experience as much as possible with his girlfriend. Marcus likes getting great photos and knowledge of attractions so he can share it on his social media, and tell everyone what he and his girlfriend are doing.

Interests:

- Photography and post editing
- World awareness
- Golf



- Social media (a lot)

Personality:

Marcus is an ambitious hard worker who spent most of his time at work. He is making a lot of sacrifices because he wants to achieve his dream of being manager of his division.

When he is not at work he likes to spend time at the golf club with most of his colleagues to talk about latest news. He is a charismatic person who loves to share his personal opinion on social, due to this he posts a lot of post edited photos with quotes or motivation phrases on them.

Skills:

- Math
- taking photograph, photo editing
- buying stocks (working)

Dreams:

- manager of my division
- married with his girlfriend
- have a sports car (2 seats) and a big house

Social Environment:

- Above middle class
- his golfing friends
-

3 Reasons for me to engage with you:

1. Good photo opportunity, for the city and for the couple.
2. It's a conversation start: "must see" place when in NYC
3. Cultural awareness knowledge about the city

3 Reasons for me not to engage with you:

1. Price
2. Waiting time
3. At least two other competitors for top of the rock

Pierre Durand:

Pierre is a 52 years old man from Paris, French. He works as a math teacher at the local high school. He has been married for 15 years, and have 2 daughters, which are 10 and 14 years old. *It will be the first time Pierre and his family in NY, so he desires that his family get a great experience in the city.*

Interests:

- He likes playing the guitar
- BBQ'ing in his backyard
- Family reunions.
- Beer and wine
- Collect football cards

Personality:

Pierre is a hard-worker family farther, who spends most of his day at the high school, where he works, with colleagues who all like him, because of the kindness he brings to the environment. In his spare time, he takes his daughters to football practice, where he also volunteers as the oldest daughter football team. At last he is also a kind and loving husband of his beautiful wife.



Skills:

- Math
- Music (playing the guitar for 25 years)
- great at socializing
- being a great dad

Dreams:

- how his daughters succeed in life (going to a good university)
- join a band
- becoming a coach of a semi-professional team.

Social Environment:

- middle-class

- his colleagues at work
- his family
- the people connected to the football club, where he is coaching
- old school friends

3 Reasons for me to engage with you:

1. Create a once in a lifetime experience
2. He could be inspired to write a song
3. "Must see" place
4. Knowledge of the city for him and his children

3 Reasons for me not to engage with you:

1. Fear of heights.
2. Price x4
3. Waiting-time (children aren't the best at waiting in a queue)

Thinking Hats

Used with well-defined and explicit Return on Investment success in corporations worldwide, Six Thinking Hats is a simple, effective parallel thinking process that helps people be more productive, focused, and mindfully involved. A powerful tool set, which once learned can be applied immediately.

You and your team members can learn how to separate thinking into six clear functions and roles. Each thinking role is identified with a colored symbolic "thinking hat." By mentally wearing and switching "hats," you can easily focus or redirect thoughts, the conversation, or the meeting.

	The White Hat calls for information known or needed. "The facts, just the facts."
	The Yellow Hat symbolizes brightness and optimism. Under this hat you explore the positives and probe for value and benefit.
	The Black Hat is judgment - the devil's advocate or why something may not work. Spot the difficulties and dangers; where things might go wrong. Probably the most powerful and useful of the Hats but a problem if overused.
	The Red Hat signifies feelings, hunches and intuition. When using this hat you can express emotions and feelings and share fears, likes, dislikes, loves, and hates.
	The Green Hat focuses on creativity; the possibilities, alternatives, and new ideas. It's an opportunity to express new concepts and new perceptions.
	The Blue Hat is used to manage the thinking process. It's the control mechanism that ensures the Six Thinking Hats® guidelines are observed.

So, we started this experiment and each of us started wearing a different hat and exposing its position respect the problem that we were facing. Then later we all together simulated to wear the same hat in order to provide the most possible number of solution to the problem. In the table below we collected all the reasoning procedure.

Problem	FACTUAL White	EMOTIONAL Red	LOGICAL Yellow	CAUTIOUS Black	OUT OF THE BOX Green	MANAGEMENT Blue
Weather 	If someone bought tickets in a bad day (e.g: low visibility) TOR gives money back		If... you will get a coupon for a next experience	if... and you have not a smartphone you are done (coupon is useless)	if someone bought tickets in advance and it will be cloudy, you will get 5\$ gift card (idea for add revenues)	
Too many buildings around 	The experience is not the same with a smartphone		VR is great for historical view. Swipe left for -10ys	No smartphone, what can I do now?	-Use our Vr App -Rent smartphone at TOR (add revenues)	
It is not worth the money 	-Lower the price -It cannot be possible to add floors -How do we define worth? (too personal concept)	A must! experience to be done once in a lifetime.	Improve revenues because the quality of the view has been increased	-Not possible to add floors (too historical and expensive) -There are other competitor ,try them	-Make building higher -Coupons/discounts for other activities (add revenues)	Add tablet with Smiles to review happiness/feedback.
Bad personnel 		For someone can be fine. Criticism is different / too personal		It is too difficult to do it There are high probabilities that we will collect only really bad experience (i.e: people are more interested in making bad reviews if they feel really bad)	-Find a way to mark the staff--> Different t-shirt colors for staff. -Who bought the ticket online can use the app to "grade" the personnel	A claims office/place. The managers decide what to do.

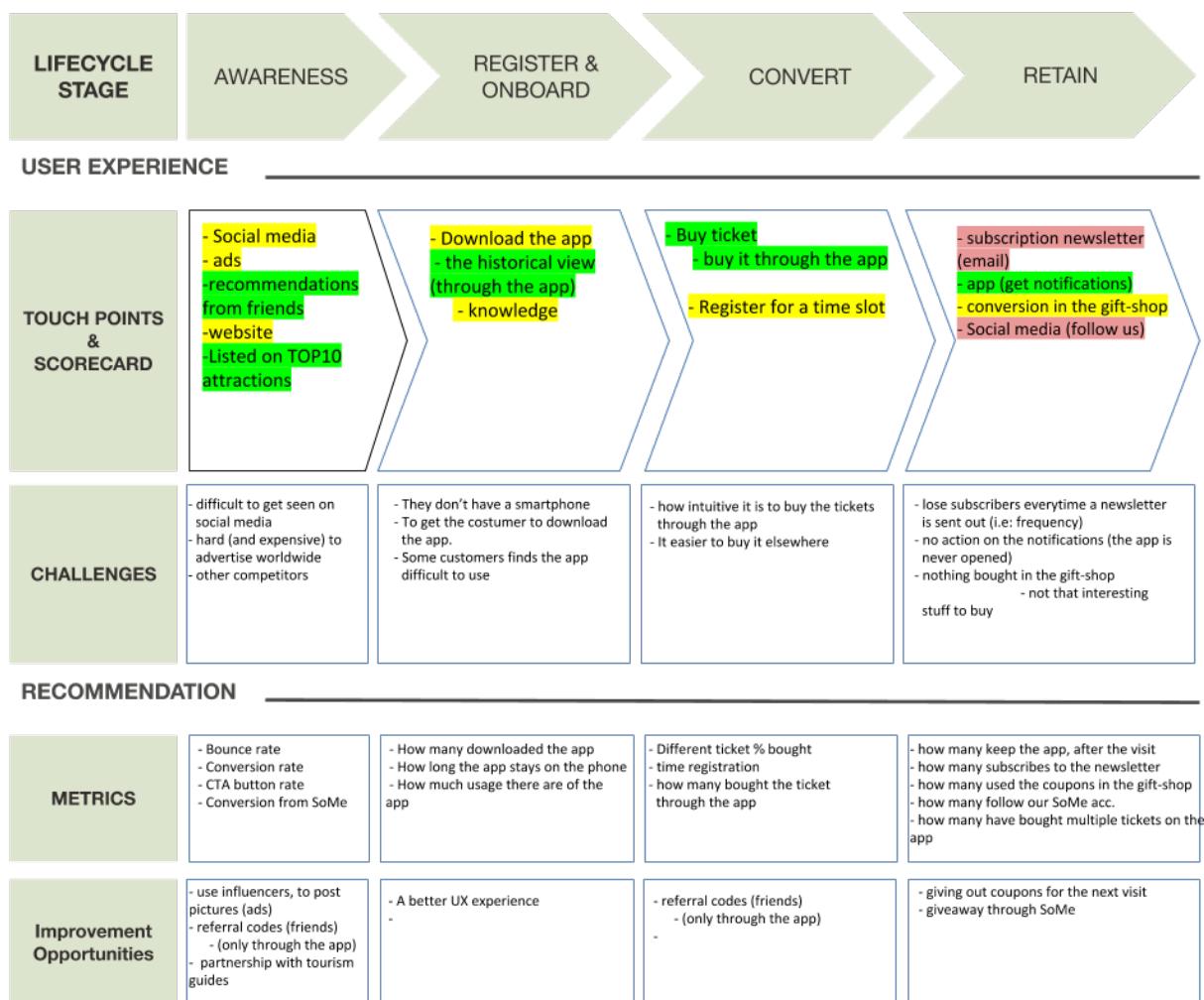
Customer Journey Maps

The customer journey map is an oriented graph that describes the journey of a user by representing the different touchpoints that characterize his interaction with the service.

To create effective visual maps that reflect customers' journeys through these channels, journey maps must be rooted in data-driven research and must visually represent the different phases customers experience based on a variety of dimensions, including customer sentiment, goals and touch points.

Behavior Line Group Technique

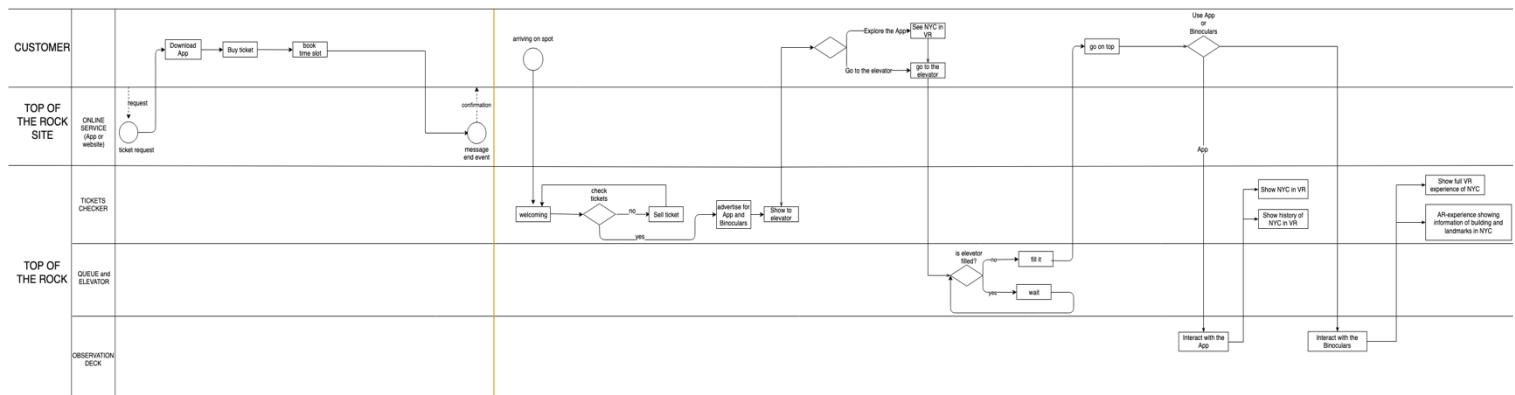
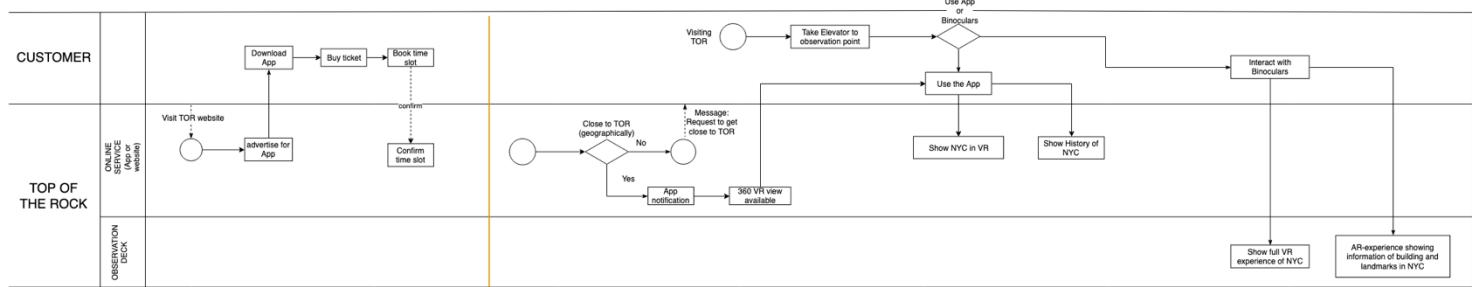
1. Identify persona and scenario
2. Design the behavior line
3. Fill in the canvas



BPM

BPM is a management practice that provides for Governance of a business' process environment toward the goal of improving agility and operational performance.

BPM is a structured approach employing methods, policies, metrics, management practices and software tools to manage and continuously optimize an organization's activities and processes.



DATA ANALYSIS

We tried to approach the Top of The Rock case with a data driven approach, using methods and tools taken from data analysis.

The Database Choice

The first task we had to face was the necessity to find a dataset containing data related with our problem. This part was harder than we thought, first because there are very few public data concerning business information of Top of The Rock, second because at the beginning every other dataset does not seem to us traceable to our case.

In the end we were able to find a dataset of a Bike Sharing company in Portugal which contains data gathered from a two year period, group by day. Here you can find the columns description:

- instant: record index
- ateday : date
- season : season (1:springer, 2:summer, 3:fall, 4:winter)
- yr : year (0: 2011, 1:2012)
- mnth : month (1 to 12)
- hr : hour (0 to 23)
- holiday : weather day is holiday or not (extracted from <http://dchr.dc.gov/page/holiday-schedule>)
- weekday : day of the week
- workingday : if day is neither weekend nor holiday is 1, otherwise is 0.
- + weathersit :
 - 1: Clear, Few clouds, Partly cloudy, Partly cloudy
 - 2: Mist + Cloudy, Mist + Broken clouds, Mist + Few clouds, Mist
 - 3: Light Snow, Light Rain + Thunderstorm + Scattered clouds, Light Rain + Scattered clouds
- temp : Normalized temperature in Celsius. The values are divided to 41 (max)
- atemp: Normalized feeling temperature in Celsius. The values are divided to 50 (max)
- hum: Normalized humidity. The values are divided to 100 (max)
- windspeed: Normalized wind speed. The values are divided to 67 (max)
- cnt: count of total rental bikes including both casual and registered

Focusing on the weather problem of Top of The Rock, we thought that this dataset could actually fit, having trends and patterns similar to the one we were looking for. In order to use it properly, we made the assumption that as for a day with bad weather conditions there are going to be less bike rented, the same can be said for the number of visitor of Top of The Rock, at least for the one who buy the ticket on spot.

NB. From now on we are going to refer to the number of bike rented ("cnt") as the number of visitors in order to make the document more understandable.

Data Exploration and Visualization

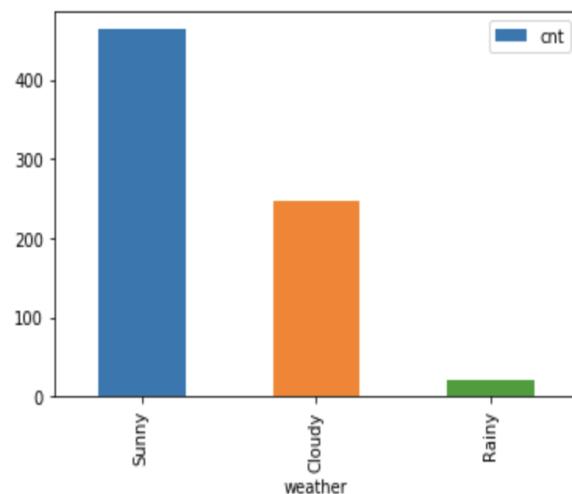
Data Exploration and Visualization is a crucial part in the data Analysis process.

The key goals are:

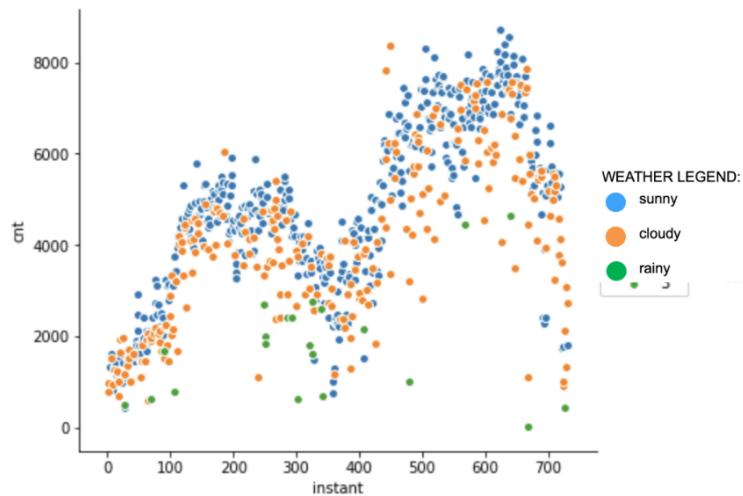
1. A preliminary exploration of the data to better understand its characteristics.
2. Helping to select the right tool for preprocessing or analysis
3. Making use of humans' abilities to recognize patterns

We briefly report some of the main results:

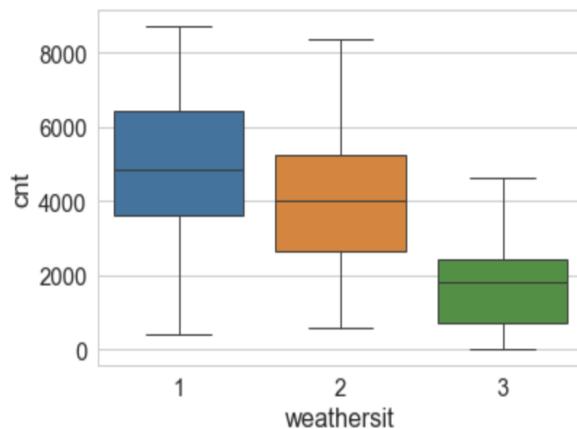
- This bar plot represents the number of samples present in the dataset for each of the three weather conditions. It seems that the dataset is unbalanced with 63% of clear days, 33% cloudy days and just 2 % of Rainy days.



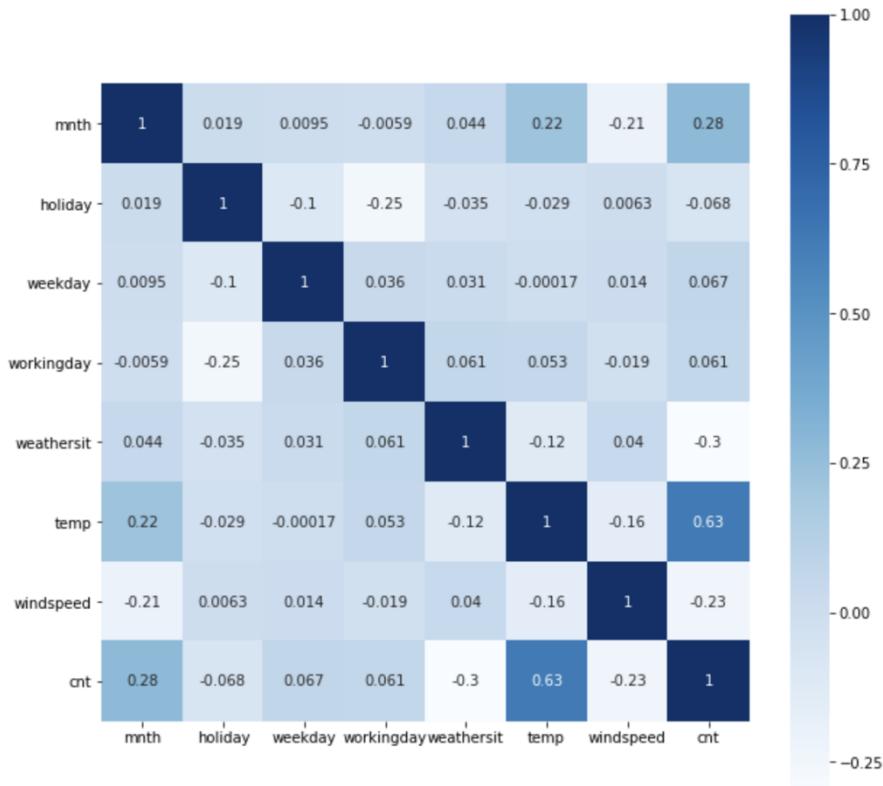
- This scatter plot shows the distribution of the number of bike rented each day, over the two years period. The colors represent the weather condition of that particular day. It is already possible to see that there is a sort of seasonality, in fact during the spring and summer there average number of visitor is higher. The average count seems to increase through the whole period, that is understandable from the fact that the second year is on average higher than the first one. This is a characteristic of the dataset we found.



- The Box plot shows, even clearly than before, how the weather condition influence the “cnt”. This chart makes us see that the position of the 50th percentile strictly decrease with the worsening of the weather condition. Generally speaking that means that usually on sunny days the number of visitors is high than on cloudy days, and again this is applicable for rainy days.



- Finally we plotted a feature correlation matrix in order to see how the features influence each other. The following chart is made with a subset of all the features. As expected “count” is strongly related with “month” and “temp”.



Clustering

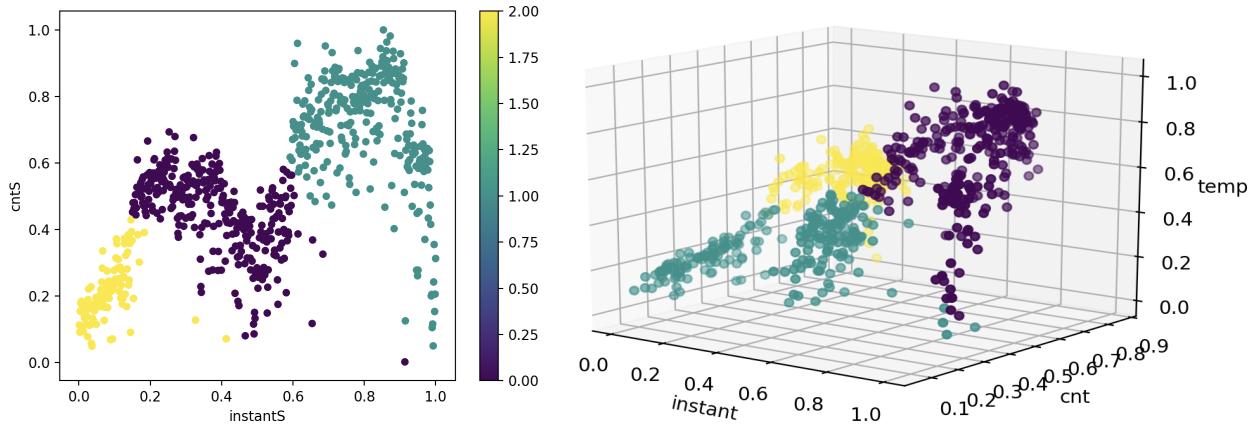
After the data exploration we did a clustering part in order to understand better our data but also to create some labels to predict for our future models. For the clusters we use two basic principles:

- Data points in one cluster are more similar to one another.
- Data points in separate clusters are less similar to one another.

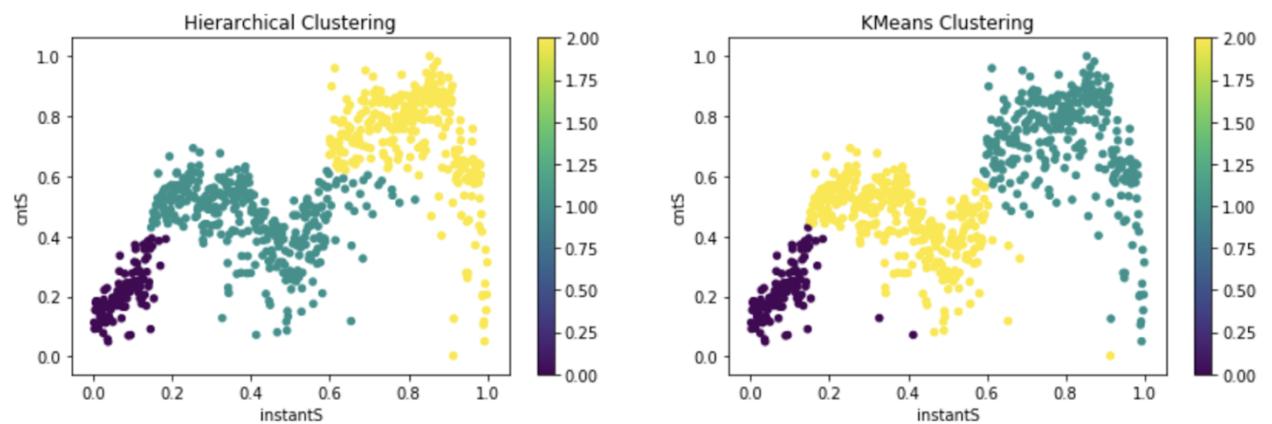
Before applying the cluster algorithm we perform a sort of normalization dividing each value ,of the column selected, for his max.

For all the clustering part we mainly used K-Means algorithm. However, just for curiosity, we tried also Hierarchical Clustering.

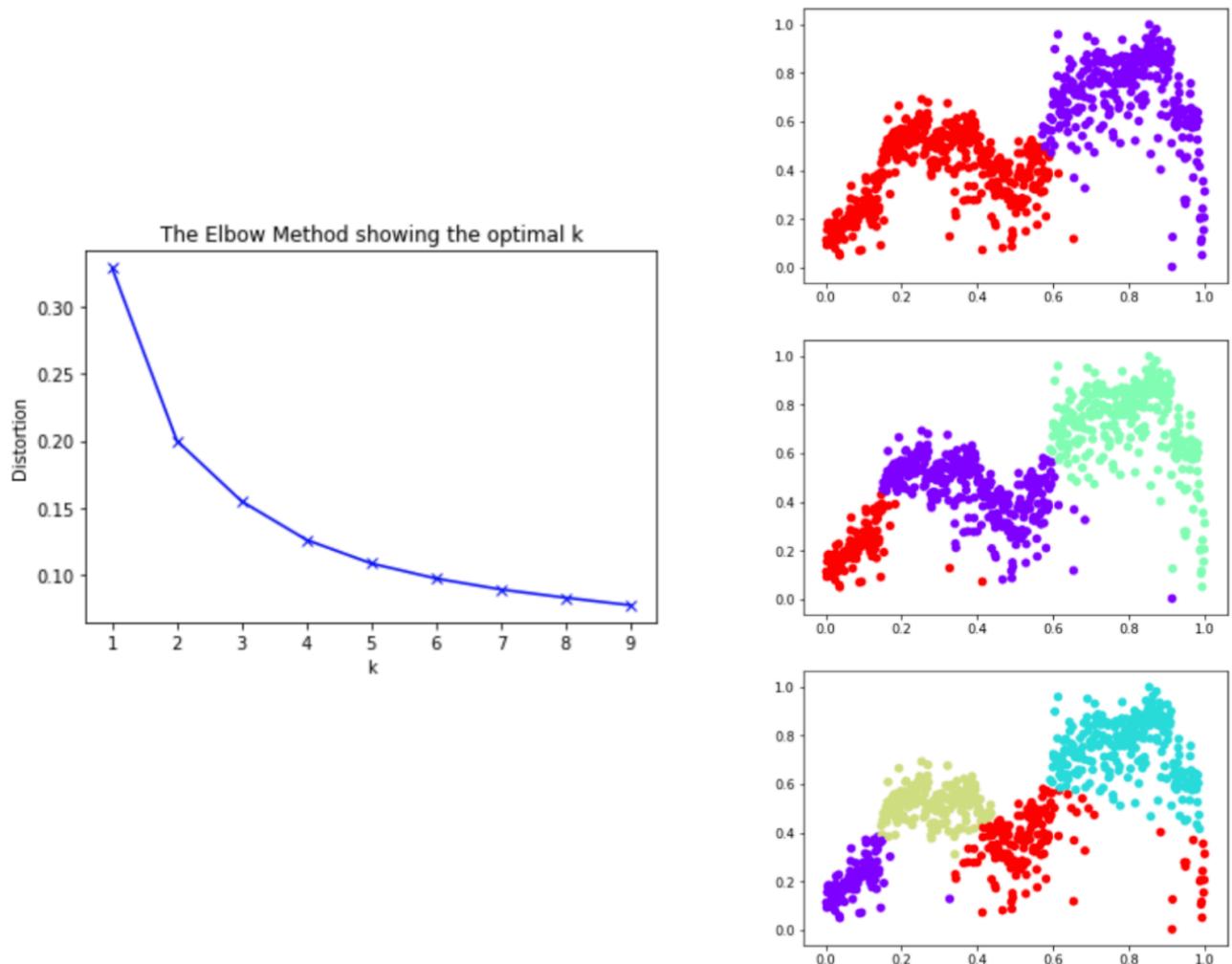
- This are some plots of K-Means clusters with K=3. In the one on left we used INSTANT and CNT instead for the one on the right we add TEMP.



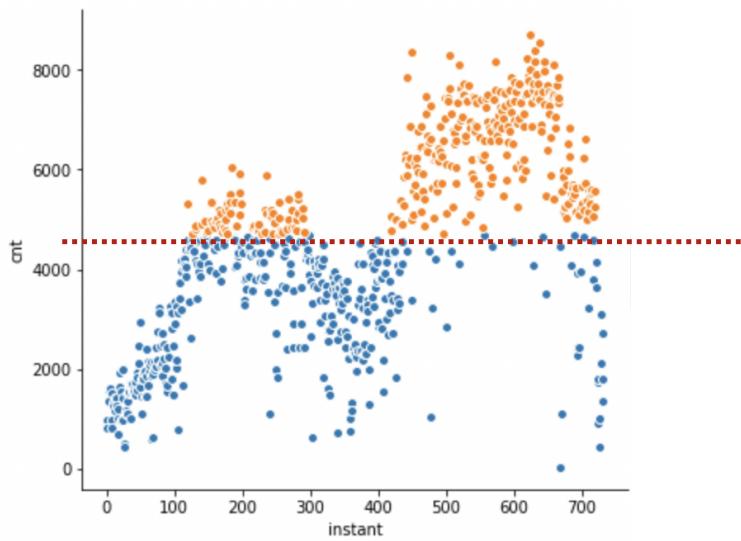
- We also tried to use Hierarchical Clustering, and we compare its result with the one obtained with K-Means but we saw that the two algorithms perform very similar.



- Finally we used the Elbow Method in order to understand which was the best number of clusters to use. From the below chart we can see that we should use a number between 2 and 4 that is why we choose K=3.



- In the end why also create two labels from an threshold added manually to 4700. We choose this number because its very near the mean and we though it could fit well our needs. The goal of this process was to create 2 labels. One representing days with high affluence and one for low ones.



Just as a quick reminder we are going to use this labels as class for the predictors.

In the implementation phase we are going to present the results obtained for the two labels obtained from the manual threshold, but the predictions made for the clusters labels can be found at the end of the notebook.

Model implementation

Later we finally approached the implementation part.

For the data we have, we thought that a Classifier able to predict high or low affluence would perform better than a Regression method predicting the exact count. But in order to be sure about it we tried both.

1. For the classification part, we wanted to use an implementation that makes easy to test the problem with different models. Due to this we created a method containing different algorithms. We tried to use both simple algorithms and complex ones. Below there is a snippet of code representing the function created. This are methods we chose in the end:
 1. *Logistic Regression*
 2. *KNeighbors*
 3. *Random Forest*
 4. *Neural Network*

```

def My_Classifier (X_train, y_train, X_test, y_test,it=0):
    col="score "+str(it)
    score_df[col]=0.0
    maxScore =0

    logreg = LogisticRegression()
    clf=RandomForestClassifier(n_estimators=1000)
    nn = MLPClassifier(solver='lbfgs', alpha=1e-5,hidden_layer_sizes=(15,), random_state=1)

    #fit
    logreg.fit(X_train, y_train)
    clf.fit(X_train,y_train)
    nn.fit(X_train, y_train)

    #Score
    score=logreg.score(X_test,y_test)
    score_df.at[0,'method'] = "Logistic Regression"
    score_df.at[0,col] = score

    score=clf.score(X_test,y_test)
    score_df.at[1,'method'] = "Random Forest"
    score_df.at[1,col] = score

    score=nn.score(X_test,y_test)
    score_df.at[2,'method'] = "Neural Network"
    score_df.at[2,col] = score

    #Score for K-Neigh
    for n in range (1,100):
        neigh = KNeighborsClassifier(n_neighbors=n)
        neigh.fit(X_train, y_train)
        if maxScore < neigh.score(X_test,y_test):
            n1 = n
            maxScore = neigh.score(X_test,y_test)

    score_df.at[3,'method'] = "K-Neighbors"
    score_df.at[3,col] = maxScore

```

2. For the Regression part we decide to use just *multiple linear regression* .

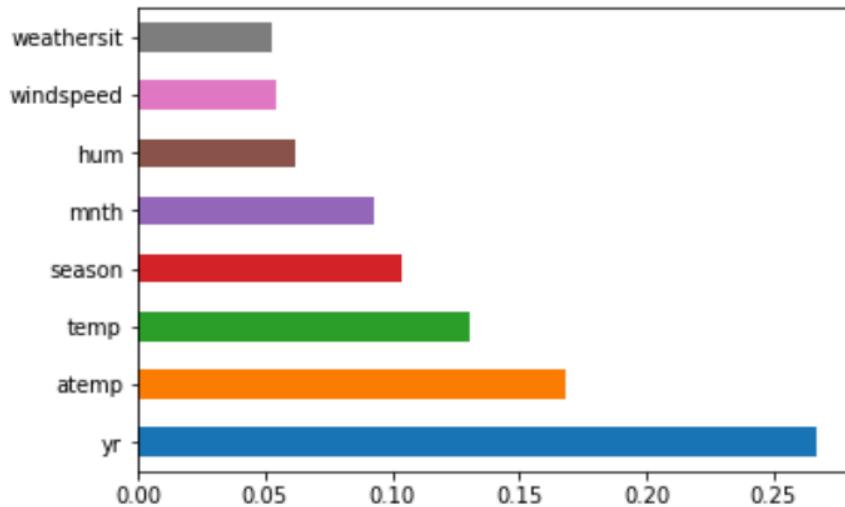
At a first try we give to all the algorithms defaults parameters, and we use all the features available. We evaluated the classifiers with ACCURACY instead the Regression algorithm with R SQUARED .

This are the results obtained.

Logistic Regression	0.8524
Random Forest	0.9125683060
Neural Network	0.868852459
K-Neighbors	0.879781420765
Linear Regression	0.815895

Using all the features, the best algorithm performing is *Random Forest*. This result could be related with the fact that it is the only one able to perform features selection on his own.

We then decided to try to understand the different importance of the various features in order to limit their number, and remove some noise. We used *ExtraTreesClassifier* to plot the result of this inspection.



As expected from the data visualization part, the year has a very important role.

We then used only this 8 features for the prediction. This is the result comparison with the one obtained before:

method	score 0	score 1
Logistic Regression	0.852459	0.863388
Random Forest	0.912568	0.918033
Neural Network	0.868852	0.887962
K-Neighbors	0.879781	0.923497
Linear Regression	0.815895	0.826689

It is possible to see that all algorithms perform way better with just the most useful features, only Random Forest doesn't improve a lot as expected from the consideration made before.

K-Neighbors is the one performing best.

Tuning

In the end we decided to focus on just one algorithm, Neural Network, and try to make it improve its performance.

In order to be able to do so we used an algorithm called *GridSearchCV*.

The way of working of this method is quite easy, we give a range of values for each of the hyperparameters of the model selected, and it computes and returns the best ones.

The main drawback of tuning is the risk of *overfitting*. *Overfitting* is the problem that arise when your model fits perfectly the train data and it is no more able to generalize on new data. To avoid to do so, tuning it is often done on a set called Validation, different from the Test one. In our case, we have few data point so we decided to avoid to split them in Train, Test and Validation , but we decided to use a small parameters space for the *GridSearch*, in order to avoid to select values too specific.

This is the result obtained:

Neural Network 0.88796174



```
mlp = MLPClassifier(max_iter=100)
parameter_space = {
    'hidden_layer_sizes': [(50,50,50), (50,100,50), (100,)],
    'activation': ['tanh', 'relu'],
    'solver': ['sgd', 'adam'],
    'alpha': [0.0001, 0.05],
    'learning_rate': ['constant','adaptive'],
}
```



Neural Network: 0.9016393

In the end we were able to improve the performance of 0,2% which is a good result.

Prototypes

We have used the software provided by the service justinmind, to create two prototypes. One which contains 2 subpage extensions for the existing Top Of the Rock website. And another prototypes in form of an virtual reality extension for both the existing mobile application, as well as the binoculars.

The Website

As written above, do our extension of the website consist of two subpages. It is possible to navigate between the two sub-pages when inside the simulation mode, by using either the “Try The App” or “Experience” button in the left menu.

“Try the App” – page



This subpage advertise the new virtual reality feature were, it is possible to see through the history of the city of Manhattan.

["Experience" – page](#)

The screenshot shows the 'Experience' subpage for the Top of the Rock. On the left, a sidebar contains links for 'Buy Tickets', 'Try The App', 'Experience', 'Group Sales', 'Contact Us', 'Redeem Citypass', and 'Languages'. It also includes operating instructions for the coin-operated binoculars and links for 'Special Offers', 'The Rock List', 'The App', and 'PRIVATE EVENTS'. On the right, a large image of the New York City skyline is overlaid with several promotional elements. At the top, a section titled 'Binoculars' describes the new VR binoculars feature. Below this are three smaller images: one showing a smartphone displaying a VR view of the city, another showing a VR headset displaying the same view, and a third showing a view of Central Park. Text overlays for these images encourage users to 'Buy your ticket through the app' and 'Try the new full VR experience on Top of the Rock'. A 'BUY TICKETS NOW' button is located in the bottom right corner of the main image area.

This experience subpage do also advertise the new virtual reality feature in the app, as well as the new possibility to buy tickets for the observation deck directly through the app.

Beside that do this page also advertise for the new "full VR experience", which is implemented in the binoculars on Top Of the Rock.

The Virtual Reality Features

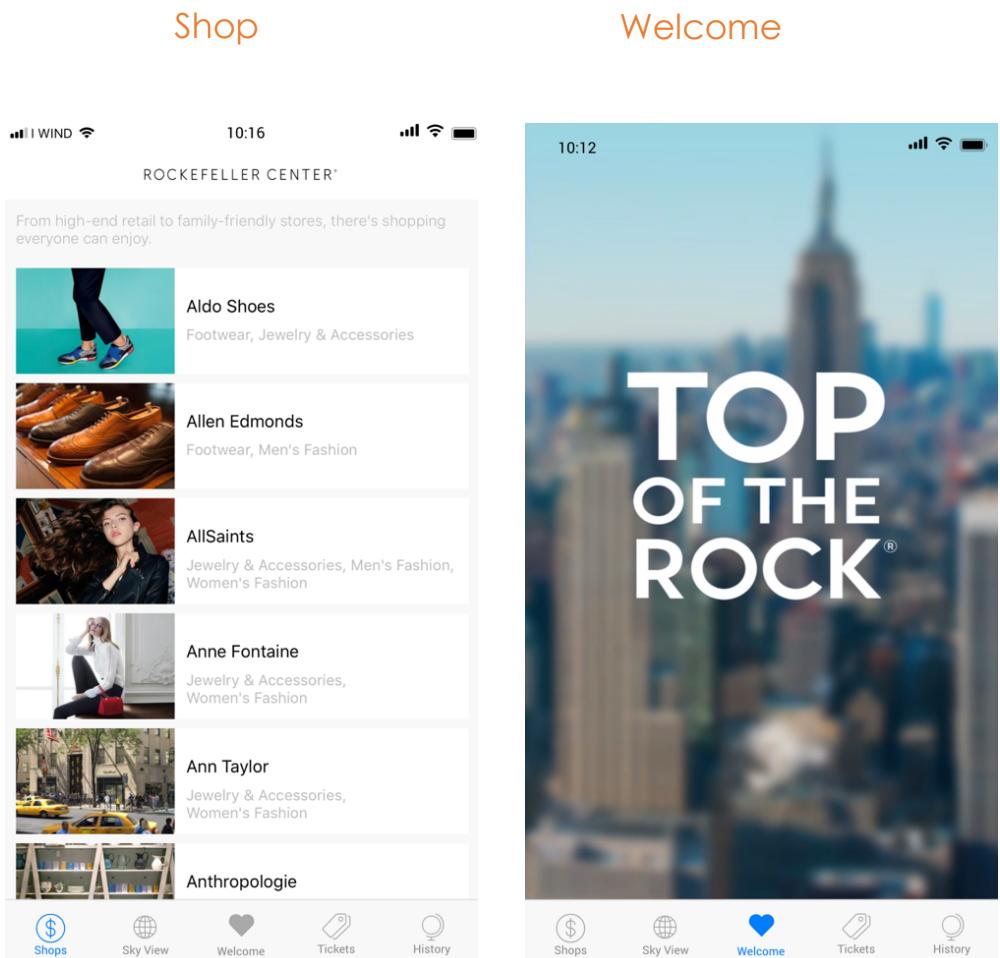
The virtual reality feature is implemented both in the mobile application and the binoculars, our second prototype only shows the experience through the mobile application. The virtual reality experiences between the mobile

application and the binoculars are very similar, and any differences will be clarified as we go through the mobile application.

The mobile application prototype consist of 5 screens, were the virtual reality feature is within the “sky view” screen.

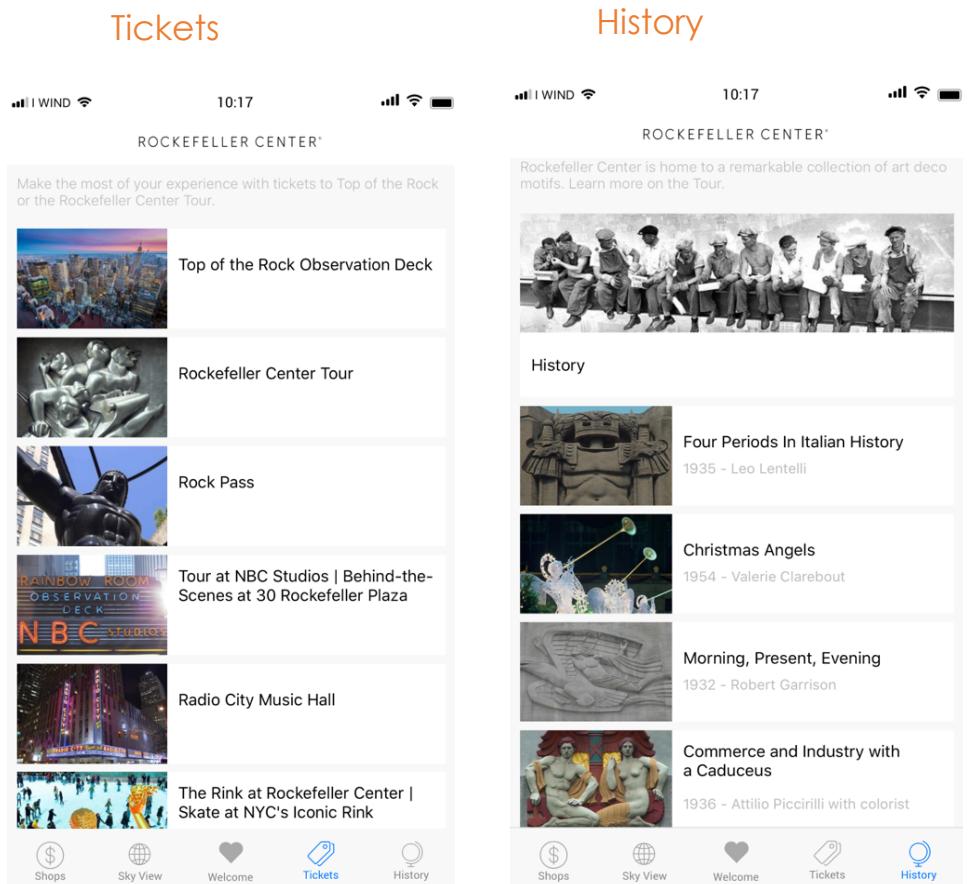
The Welcome screen only provides the “Top of The Rocks” welcome sentence.

The Shop screen, provide the user with a list of the available shops near the tower.



The Tickets screen provide the possibility to buy tickets for the observation deck and more directly through the mobile application.

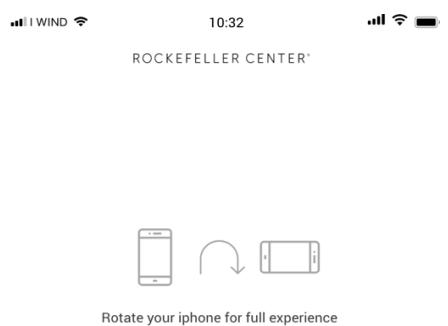
The History screen shows different historical articles about the Top of The Rock.



Sky View

When first initializing the sky view screen, in portrait mode.

Are the user presented with the screen on the right, which tells the user to turn his phone into landscape mode in order to active the virtual reality mode. The virtual reality feature can only be active when the user is near the Rockefeller Center.



Initial Landscape screen



When the user put the phone in landscape mode the following screen is presented. The user can now borrow a VR case¹. And get the full VR experience.

This view on the picture above, is very similar to what is shown through the binoculars, the only two differences between the mobile application and the binoculars are:

1. The binoculars offers a higher quality picture, which will result in a much richer and immersive experience.
2. When viewing the present through the binoculars, do the user have the option to choose between argumented reality and virtual reality.
 - a. Argumented reality, will show the real life through the lenses, but the labels for the different building will still pop up over them.
 - b. Virtual reality will be an still 360 degrees picture. Which will show Manhattan in the best weather possible.

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