# **COM5961 Final Report: Shenzhen Theatre Tour**

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Lauryenze.github.com/prototype1/index.html

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# 1. Introduction

Theatre is a general term for the performing arts on the stage that use language, movement, dance, music and other forms to achieve a narrative purpose. According to different criteria, theatre is also classified into various categories, the common ones include drama, musical theatre, comedy, tragedy, improvisation and so on. As a theatre lover in mainland China, I have been facing a frustration in recent years: as

multiple platforms, including websites and applications, can audiences acquire all the basic information about the latest local shows, such as theatre type, times, venues, staffs, ticket price, synopsis, etc. Nowadays, people can easily search for a theater or movie on platforms such as Dianping(大众点评) and Cat's Eye Movies(猫眼电影) to complete a series of actions from knowing about the film, confirming the schedule and purchasing tickets. As a relatively niche form of entertainment, theatre has room for improvement in terms of audiences-facing services.

Based on this, a website called Shenzhen Theatre Tour is developed, whose main feature is collectively present information about theater activities in Shenzhen, in order to address related problems for theatre lovers. This report will elaborate the whole process of website building with design thinking and UX elements framework.

# 2. Requirement

# 2.1 The Strategy Plane

In this part of the report, the target users of the site are interviewed to create a basic customer journey map, summarize the problems as pain points they may have been encountered on their journey to obtain theatre activities information, and develop a problem statement based on this. In response to this problem statement and related pain points, the objectives of this site will be illustrated.

#### 2.1.1 User Needs

The target user of this website is theatre lovers in Shenzhen who are accustomed to using the Internet to obtain information on theatre activities.

Based on this target user profile, two theatre lovers are interviewed to create a customer journey map (Figure 2.1.1.1).

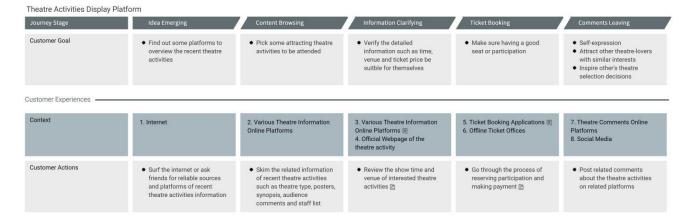


Figure 2.1.1.1 Customer Journey Map

According to the customer journey map and preliminary interview, the pain points of target users can be concluded initially as follows.

First, users always cannot be provided a complete overview of what theatre activities are holding now and will be held in the near future, because of the limit partnership between theatre organizers and information display platforms.

Second, users usually cannot learn basic information about the theatre activities, such as theatre type, time, venues, synopsis, staff list and ticket price in one time. They have to go through multiple pages to obtain the information they are interested in.

Third, it always takes an extra effort for the users, for example, by logging into a review site, or searching for keywords on social media, to see other audiences' reflection about a specific theatre activity.

Forth, there is a lack of information about the theatre activities venues. And it takes time for the users to learn about the venue and how to get there.

Last but not least, there are so many ticketing platforms for theatre activities on the market that users cannot efficiently decide which channel to use.

With the above discussion, the user needs can be summarized.

The target users need a website that can provide a **complete overview** of the upcoming theatre activities, display information about the theatre itself, such as theatre type, time, venues, synopsis, staff list and ticket price, as well as information about the performance venues, such as address and public transportation options. Users also need a **convenient way** to browse what other audiences said about specific theatre activities and to purchase tickets directly after choosing a theatre activity they

are interested in.

# 2.1.2 Site Objectives

Considering the pain points and user needs concluded above, the problem statement is that how might I help theatre lovers in Shenzhen to conveniently acquire a general overview of the upcoming theatre activities and know about their basic information so that they can select the activities meeting their interests accordingly and enjoy it better?

The objectives of the website to be built are also clear and concise: displaying sufficient information on upcoming theatre activities including theatre type, time, venue, ticket price, synopsis and staff list, so that theatre lovers can be well-informed. In terms of performance venue, details such as address, public transportation and map will be presented as well. Moreover, the website will provide convenient and direct access to reading audiences' comments and buying ticket for users, by which it helps users to better make a decision that which activities will they attend.

# 2.2 The Scope Plane

In this part, the key data and content requirements will be listed for the website-building process based on the aforementioned strategy. And the data flow of this website will be clarified through a data flow diagram.

Firstly, the content requirements are shown in the table below (Table 2.2.1).

Theatre Activities Details	Including theatre type, time, venue, ticket price, synopsis and staff list
Venues Details	Including venue address, public transportation, map and upcoming performances
Audience Comments	Including theatre name, commentator name, comment text and ratings
Ticketing Channel	Links to ticketing site
Theatre Activities Calendar	Theatre activities displayed in a calendar format

Table 2.2.1 Content Requirements

Given the above key content, the data flow of this website is illustrated in the data flow diagram below (Figure 2.2.1). The level 0 diagram shows the data flow in context level. And the level 1 diagram elaborates each step in detail.

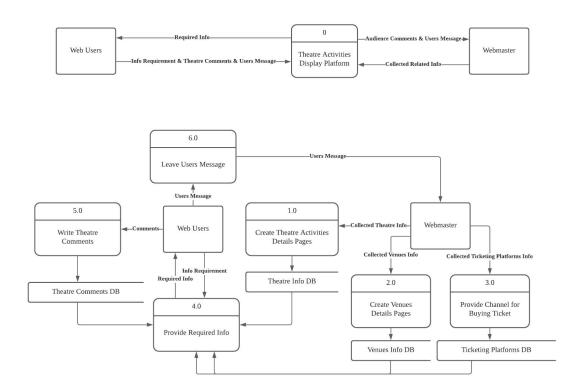


Figure 2.2.1 Data Flow Diagram

# 3. Design

# 3.1 The Structure Plane

According to the key data and content requirements, the entity-relationship diagram (Figure 3.1.1) is created below to support the development of information architecture of this website.

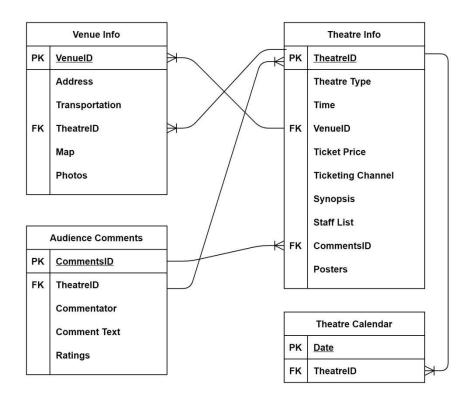


Figure 3.1.1 Entity-relationship Diagram

Then, the initial information architecture is presented (Figure 3.1.2). In response to the user needs found in preliminary research, this website's first level page is initially divided into six parts. Other detailed information on theatre activities, venues and owned comments submission will be shown in the second level pages.

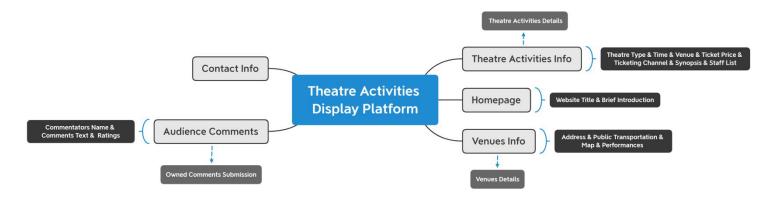


Figure 3.1.2 Initial Information Architecture

# 3.2 The Skeleton Plane

In this part, a usability test on a competitor of this website is conducted. And a

series of pain points are found from the test results. Based on theses findings, a low-fidelity prototype is developed and tested by users as well, which has some improvements over the competitor.

# 3.2.1 Usability Test on Competitor

The selected competitor is a ticketing platform named MoreTickets.com (摩天轮票务), which is a ticketing platform with ticket types covering concerts, sports events, theatre activities, dance and ballet, exhibitions, music and miscellany, etc.

During the test, the 5 participants are asked to browse the website and select a theatre activities they would like to attend based on their personal criteria, and then buy the ticket after deciding on an appropriate time, venue and price. When the test task is accomplished, a post-test interview on participants is carried out.

The test results is as follows.

In terms of effectiveness, the completion rate of 5 participants is 100%.

The efficiency is shown in the table below (Table 3.2.1.1).

Participant	Time on tasks 1 (seconds)	Time on tasks 2 (seconds)
А	75	52
В	88	35
С	58	26
D	73	44
Е	102	67

Table 3.2.1.1 The Efficiency

In general, everyone agreed that the whole process is easy, logical and straightforward. But according to the post-interview, it still has some pitfalls.

First of all, MoreTickets doesn't have the option to **sort by districts** in its site navigation. So users have to check the location carefully of each event.

Also, there is no option to **sort by theater type**. So users cannot directly pick an event according to their preferable genres.

In addition, a test participant said that compared to sorting by ticket discount, he expects a more straightforward sorting by price, which makes it easier for him to

choose activities within his budget.

The participant who is focus on the reputation of the show looks forward to seeing what other audiences have said about the show directly on the website, and is willing to post a brief review of the show for other viewers as well.

Besides, 2 participants reflected that the descriptive information including synopsis and cast introduction showed in the specific pages of each activity is a little bit messy and casual. Developers can purposefully **design different sections to present every part of content in a structured way,** allowing users to capture what they are interested in at a glance.

Last but not least, participant who lives in remote areas requests more detailed information on how to get to the venue.

Based on the pitfalls, the website's objectives can be concluded as follows.

Build reasonable navigation and sorting methods that cater for diverse needs including suitable time, venue, type and ticket price.

Show sufficient information on recent theatre activities including theatre type, synopsis, staff list, time, venue, public transportation, ticket price and audiences comments.

Present information in a structured way.

Provide convenient and direct access to buying ticket.

Develop a beautiful and clear website interface which can be used easily.

# 3.2.2 Low-fidelity Prototype

Considering the the content requirement and the results of usability test on competitor, a low-fidelity wireframe prototype (Figure 3.2.2.1 - 3.2.2.8) is created with some **improvements** over MoreTickets.com:

Build a clearer section for users to view various types of theatre.

Build a particular section for users to view theatre according to **districts** and **venues**.

Build a separate section for users to see what other audiences think about the theatre.

Provide users with a chance to write their own reflection about the theatre.

Present detailed information on theatre in a more straightforward and structured way with eye-catching title of every part.

Show users the accurate information on how to get to the venues.



Figure 3.2.2.1 Homepage

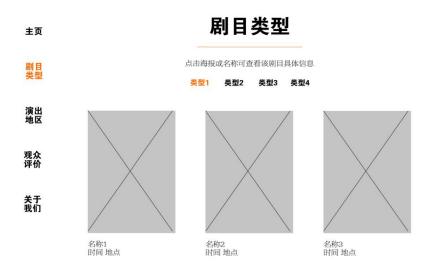


Figure 3.2.2.2 "Theatre Type" Page



Figure 3.2.2.3 "Theatre Details" Page

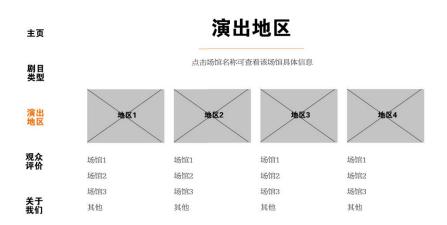


Figure 3.2.2.4 "Activities Location" Page





Figure 3.2.2.5 "Venue Details" Page



Figure 3.2.2.6 "Audience Comments" Page



Figure 3.2.2.7 "About Us" Page



Figure 3.2.2.8 Footer

For this wireframe prototype on Figma, a usability test is also conducted, which asks the participant to freely browse the website and read the content in order to select a theatre activity they would like to attend based on their personal criteria and preference.

The following are the results of the second usability test.

# Adjust the "START" button on the homepage (主页)

Based on the participants' performance on the task and their post-test interviews, the developer found that the meaning of the "START" button on the homepage caused some confusion among the participants. Although they tended not to be confused for long about the button's meaning (as it is common on other websites' homepages), one participant suggested that there were terms that better informed the user of the button's function than "Start", such as "Start browsing", etc.

In addition, one participant suggested that the three methods to accessing the "Theatre Type" page from the homepage - clicking the "START" button, scrolling down, and clicking on the navigation bar on the left - may be relatively unnecessary. Developer could consider linking the "START" button to another section that is equally important for users.

# Add a "General Browse"(综合浏览)page

In the post-test interview, one participant said that she sometimes did not pick plays with a strong sense of purpose. When browsing the web, she did not have a clear idea, such as "I want to see musical next" or "I want to see a show in Nanshan District next". More often than not, she just wanted to have a general overview of what are being performed recently.

For this reason, it is necessary to add a "General Browse" section. At the same time, even though the users may not have a clear purpose at the beginning of the browsing, the needs to "search by theatre type", "search by price", etc. may arise from time to time. Therefore, a sub-function to search by different kinds of criterion are still required in the "General Browse" page.

#### Merge the "Theatre Type" page with the "General Browse" page

For the reasons mentioned above, the "Theatre Type" page can be merged with the newly added "General Browse" page to prevent duplication of core functions. Within the "General Browse" page, users can choose to filter all activities by Theatre Type and focus on what they are interested in, which will improve their efficiency.

# Add the "Upcoming Events"(近期活动) page

In the post-test interview, a participant indicated that visualizing what theater

events would be held in the near future is a very important function for them. Although everyone has a preference for a particular type of play, "preference" does not mean that they only see that type of performance. Most theater lovers are interested in learning about all the theater-related activities that take place within a certain period of time. Often, after getting a general idea of what is going on, users concentrate on reading about the parts that interest them the most, such as the type of theatre they are most interested in, the most convenient location, and so on.

Therefore, even though the "General Browse" page shows when each event is taking place, it is not straightforward enough to meet the user's need for "visualizing what theater events are taking place in the near future". Therefore, the developer feels that it is necessary to add a "Upcoming Events" page and have the "START" button on the home page link directly to this page to make it easier and faster for these users to accomplish their goals.

# Link the "Theatre Details" pages to the "Venue Details" pages

As participants completed the usability test task, the developer found that each participant entered the "Theatre Details" page from the "Theatre Type" page, and then also entered the "Venue Details" page from the "Activities Location" page.

Therefore, the developer thinks that it is necessary to link the "Location" information on the "Theatre Details" pages to the "Venue Details" pages; "Theatre Details" pages should be linked to the "Ongoing Activities" information on the "Venue Details" pages, which helps simplify the process of obtaining relevant information and improves the user experience.

# Add common public transportation stations information to the "Venue Details" pages

In the post-test interview, the participant who cares about the location of the events reflected that she would like to see the public transportation stations near the venue in addition to the function to view a map directly on the "Transportation" section of the "Venue Details" pages. Therefore, the developer decides to add this message to the page in order to meet the needs of users who use public transportation more often.

### Add the feature of viewing audience rating by Theatre name in "Audience

# Comments"(观众评价) page

Participant who was more interested in past audience reflections of the activities, both during the actual process to accomplish the task and in the post-test interview, felt that presenting audience comments in the form of carousel did not seem to be sufficiently economical, since the carousel does not have much space for text to display. In addition, the current format to present the comments only allows users to read them in order, one by one, which is not efficient for obtaining useful information. Many viewers would firstly choose the plays they were interested in in mind and then intentionally read the reviews of those plays on this page.

Therefore, the developer decides to change the presenting method of audience comments on the "Audience Comments" page and add the feature to view comments by theatre name.

# Change the title of "About Us" (关于我们) to "Contact Us" (联系我们)

Besides, one participant mentioned in the post-test interview that, considering that the core content of the "About Us" page is mainly about how to contact the web developer, it might be more appropriate to change the title of the page to "Contact Us" to more directly summarize the functionality of the page to the users.

#### Add related links in the footer

Finally, based on the observation and analysis of other similar websites, the developer thinks that it is sensible to add other theater-related websites as related links on the footer to further facilitate users' data collection and content acquisition, and to improve the sense of use of this website.

# 3.3 The Surface Plane

Based on the second usability test results, a high-fidelity prototype (Figure 3.3.1 - 3.3.9) is created with Bootstrap (Lauryenze.github.io/prototype1/index\_old.html).



Figure 3.3.1 Homepage

# 综合浏览

这是一行介绍本部分的文字。



Figure 3.3.2 "General Browse" (综合浏览) Page

# 近期活动

这是一行介绍本部分的文字。

Q

同

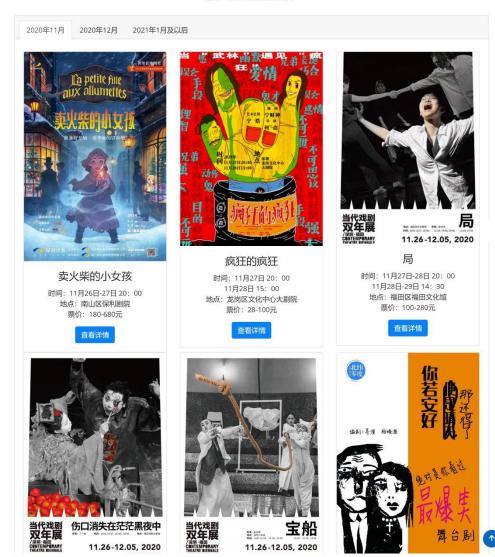


Figure 3.3.3 "Upcoming Events"(近期活动) Page



Figure 3.3.4 "Activities Location"(演出地区) Page



Figure 3.3.5 "Audience Comments" (观众评价) Page



Figure 3.3.6 "Contact Us" (联系我们) Page



Figure 3.3.7 Footer



Figure 3.3.8 Theatre Details Page

# 

Figure 3.3.9 Venue Details Page

# 4. Test & Evaluation

# 4.1 Usability Test on High-fidelity Prototype

The third usability test is conducted for the high-fidelity prototype with the same test task as the second one. The following are the results of the third usability test.

### Add a "Back Home" Button to Sub-pages

Test participants indicated that the "Back Home" button on the Theater and Venue Details pages need to be added to better fit the user's browsing habits when navigating the sites. Although it is generally possible to return to the homepage by closing the sub-page, adding a "Back Home" button with navigation features on the sub-page will improve the overall logical structure of the sites.

### Change the Table Format on the "General Browse" Page

The information table on the "General Browse" page is in Gallery format, presenting both the theatre posters and related information, similar to the way information is presented on the "Upcoming Events" page. Participants indicated that the repetition of large posters is a bit dizzying and possibly redundant. The visual style of the "General Browse" page could be simpler, for example, changing the format from Gallery to Grid.

#### **Remind Users to Use Sort and Filter Function**

During the test, developer found that there was little awareness of using the form sorting and filtering functions. After developer reminding the participants in the pre-test interview, the participants realized that these convenient functions were available and could easily start using them. Therefore, it is necessary to add a description of the usage of information sorting and filtering functions in the introductory part on each page in order to provide a more complete web experience to the users.

# Swap the Order of "Upcoming Events" and "General Browse" Pages

Some participants pointed out that, based on their purpose of use, users tend to see information on upcoming events first in terms of page content. Therefore, it is possible to swap the order of "Upcoming Events" and "General Browse" pages, so that the former can be seen first and the user's time on the page can be increased. In addition, it is beneficial to change the button on homepage from linking to the "Upcoming Events" page to linking to the "General Browse" page, thus meeting the specific needs of different users.

#### Add a Link to the "Activities Location" Page on the "Upcoming Events" Page

In the pre-test interview, some participants indicated that they saw an event they was interested in on the "Upcoming Events" page and wanted to get information about the performance location immediately. Therefore, developer can consider adding a link on the "Upcoming Events" page to go directly to the "Activities Location" page with relevant instructions to make the user experience smoother.

#### Add a Page to View Theatre Activities in the Form of Calendar

Moreover, according to the suggestion, a page for users to view theatre activities in a calendar form can be added in the "Upcoming Events" section. Using calendar is more straightforward for theatre lovers to explore and arrange their owned schedule.

In response to these results, the high-fidelity prototype is modified (Lauryenze.github.io/prototype1/index.html). The mainly improved pages are shown below (Figure 4.1.1 - 4.1.5).



Figure 4.1.1 Venue Details Page



Figure 4.1.2 Theatre Details Page

# 

近期活动

Figure 4.1.3 "Upcoming Events" Page

点击戏剧名浏览戏剧详情。

# 

Figure 4.1.4 Calendar View

#### 综合浏览

在这里,你可以综合浏览最近的戏剧活动。 可使用表格在上方的搜索功能,进行剧名等关键字搜索。 可使用表格上方的"Group"功能,按戏剧类型、地区等分类查看演出。 可使用表格上方的"Sort"功能,按建新对源出进行排序。

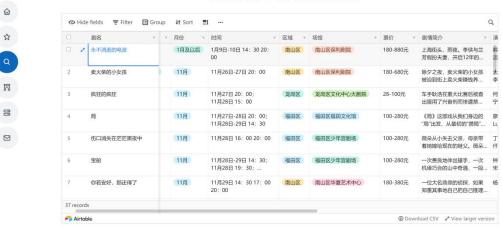


Figure 4.1.5 "General Browse" Page

# 4.2 A/B Testing

In order to better explore whether the website content is attractive enough and meets the needs of the target users, an A/B testing is conducted with Google Analytics and Google Optimize.

Specifically, the function of viewing the upcoming theatre activities in the form of calendar is hided in the Variant B of this A/B testing. By comparing the data of the original version with the "View by Calendar" feature and Variant B without this feature (Figure 4.2.1 & 4.2.2).



Figure 4.2.1 Original Version



Figure 4.2.2 Variant B

It can be found that the original version can better meet the needs of the target users and has a better performance on most of the attributes, including the Average Time on Page, Bounce Rate, Page/Session, Average Session Duration and Experiment Bounces. The details of the data are as follows (Figure 4.2.3 - 4.2.5).

Variant	Page Views ↑	Unique Page Views	Avg. Time on Page	Entrances	Bounce Rate	% Exit	Page Value
• Original	412	269	00:00:53	235	31.92%	61.65%	CN¥0.00
• variant B	363	246	00:00:42	221	40.00%	65.29%	CN¥0.00

**Figure 4.2.3** 



**Figure 4.2.4** 

	Variant		Experiment Sessions	Experiment Bounces	Calculated Bounce Rate	
<b>~</b>	<ul><li>Original</li></ul>	æ	262	85	32.44%	
<b>~</b>	variant B	P	239	95	39.75%	

Figure 4.2.5

From these results, it can be concluded that the original version of website with calendar form is more attracting for the target users, thus gaining relatively lower Bounce Rate, higher Average Time on Page and Session Duration. Therefore, the function viewing theatre activities in the form of calendar will be remained.

# 4.3 Web Analytics

# 4.3.1 Audience

From these figures, it can be seen that to date, there are 560 users on the site, contributing 1,059 page views. more than 99% of the users are new visitors, with almost no returning visitors (Figure 4.3.1.1).

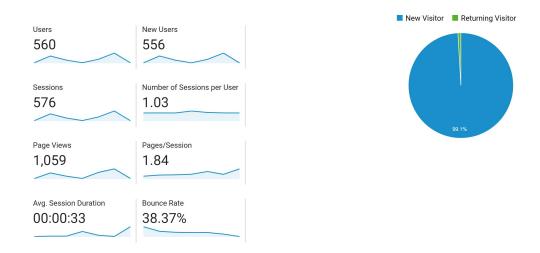


Figure 4.3.1.1 Audience Overview

More than half of the users are between the ages of 18-34, which meets the definition of target users of this site (Figure 4.3.1.2). Besides, in terms of gender, there are 45.85% female and 54.15% male (Figure 4.3.1.3). The ratio of male to female is roughly balanced.

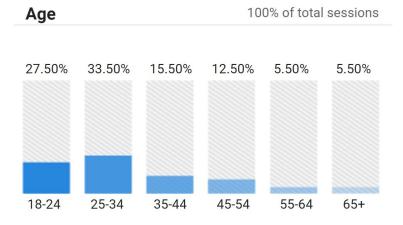


Figure 4.3.1.2 Age

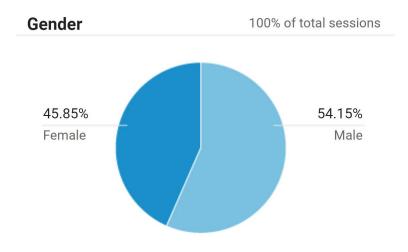


Figure 4.3.1.3 Gender

This website is promoting via Sina Weibo, WeChat groups and WeChat Moment. It is worth noting that more than 80% of the visitors are from cities outside Shenzhen, including Hangzhou, Chengdu, Beijing, Guangzhou and Changsha, etc (Figure 4.3.1.4), which is perhaps because of the improper promotion channels.

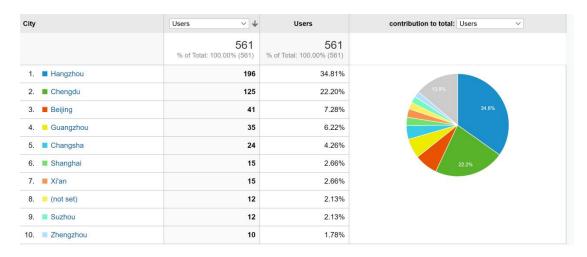


Figure 4.3.1.4 Location

# 4.3.2 Duration

From figure 4.3.1, it can be found that the Average Session Duration is relatively low compared to the data found in Table 3.2.1.1, which is probably because most of the visitors are from cities outside Shenzhen. Some more suitable promotion methods need to be found in order to get more reliable data.

# **4.3.3** Mobile

It can also be found from the figure below that the website users are mainly using mobile devices, followed by tablet and least desktop (Figure 4.3.3.1). Therefore, in the future website development plan, the mobile experience should be focus to improve firstly.

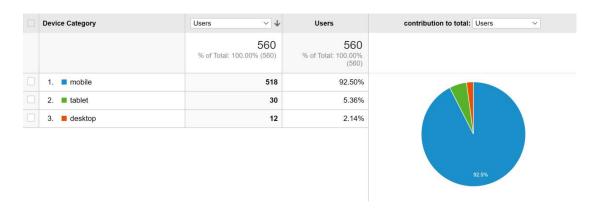


Figure 4.3.3.1 Mobile

# 4.4 Further Recommendations

# 4.4.1 Operation

As can be inferred from the problem statement and site objectives, this website requires that the data updates as timely as possible. The data for this website comes mainly from the three main online ticket platforms in mainland China: PiaoNiu (票牛), Damai (大麦网) and MoreTickets (摩天轮票务). The audience comments data come from Douban (豆瓣) initially. When obtaining a stable number of users, it will be possible to use the owned comment resources collected from this website.

# 4.4.2 Improvements

First, according to Google Analytics (Figure 4.3.3.1), more than 90% of users use mobile device to browse the website. Therefore, the first priority for the subsequent improvement of this website is to improve the mobile experience and make the website functions and contents more suitable for mobile device.

Second, in the future, this website can try to provide information on theatre-related activities covering a wider range of fields, such as large, medium and small-scale stand-up comedy, lectures, experience classes and workshops, etc., in order to meet the more diverse needs of multiple target users.

Last but not least, in the Audience Comments section of the site, adding a system for quantifying user ratings can be considered so that the overall rating of specific activities can be presented more straightforward to users. For example, Douban (豆瓣) has a similar rating system for theatre activities. There is a special formula behind the system, and in addition to each user's specific rating, indicators such as the activity's hotness and the weight of the user's account itself will also be calculated. This website can start without the complex calculation formula in the early stage of operation, and only take the average of user ratings as the overall ratings of the activities and present them to the users.

#### 4.4.3 Business Case

In terms of business case, the target users believe that existing Ticket platforms have the disadvantage that they are hard to present every recent activity because of their limited partnerships with the activity organizers. However, from a business point

of view, this is how these ticket platforms make money: by selling tickets on behalf of the organizers.

In the early stage of this website, it is difficult to make money in this way. Therefore, this website hopes to make money by **advertising** and **cooperation** with ticket platforms and directly with activity organizers after gaining a certain amount of traffic through SEO and social media marketing.

For example, Douban is cooperating with the ticket platform PiaoNiu. However, the drawback is that, except for PiaoNiu, information on other ticket platforms is no longer displayed on Douban. On this website, information from other non-cooperative platforms probably can still be displayed to users by external links.

Advertising, on the other hand, means that the basic information of the theatre activities with which the site has entered into a partnership will appear prominently on the web page, such as using the promotional banner as the background image on the homepage of the site, which helps to attract greater traffic for that theatre activities.

Furthermore, this website can also develop famous actors, directors, scriptwriters, producers and other practitioners in the field of theater as **key opinion leaders**, so that they can endorse this website and play a role in increasing the website's traffic. Since this website is aimed at theater activities in Shenzhen, there will not be many activities held by celebrities in one city in a year. And the amount of content is not enough to build a resident section for them. However, when well-known practitioners are coming to Shenzhen to hold theatre, they can cooperate with this website for activities promotion, which will help to promote their events and also be beneficial to increase the awareness of this website, thus gaining revenue.