

Fall Semester 2019-20



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Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

J COMPONENT

LEAN START-UP MANAGEMENT

MGT1022

Under the guidance of- Prof. Moovendhan V

Topic: Virtual Tourist Guide

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Abstract

Our main idea is to create an app which will help people to explore places like museums, adventure parks, monumental on their own without any external help as of guide. By using our app, user would not only get authorized information about various artefacts of the museum but will also save a lot of money which they spend on guides. Our app will act as a virtual assistant throughout the venue. User can get information in text or in audio form on earphones which will also reduce the noise pollution. User just has to scan a QR code placed next to an artefact or a ride in an adventure park and he will get all the relevant information within seconds. By this idea, the user can roam the venue on his convenience and spend as long as he wants on a single piece of art. It is quite often that when you hire a guide, you are not able to hear him; you are not able to understand some things which he said; you are unable to see the artefact properly. With our app all these problems would be solved very easily.

Identified Problem:

One of the most prominent problem in the touring industry is the tourist experience when visiting a museum, a theme park or a monument. Their only help in a new place are local tour guides which can get pretty expensive depending on the place, and sometimes can even turn out to be disingenuous and exploit the tourists on their lack of knowledge.

They can also be loud and are a detriment to one-on-one interactions among the tourist group. Also, the tourist/user has to match the speed of the guide and some people may not be so adaptive, ruining their experience. Further worsening this problem is the issue of inaudibility in large groups.

Our app can promise a comprehensive solution to all these problems and can help to improve and enhance the user's experience.

Proposed Solution:

Our purpose is to create an app based lean start-up which will help people to explore places like museums, adventure parks, monuments on their own without any external help, such as of a guide. By using our app, the user would not only get authorized information about various artefacts in the museum, and along with it, they save a lot of money which would have been otherwise spent on hiring a guide.

Our app will act as a virtual assistant throughout the tour. The user can get information in text or in audio form on earphones which will also reduce the noise pollution and not invade the personal space of others. The user just has to scan a QR code placed next to an artefact or a ride in an adventure park and he will get all the relevant information within seconds.

With the support of this app, the user can roam the venue on their convenience and spend as long as they want on a particular site or an artefact, which further enriches their tour experience. It is quite often that when one hires a guide, they might be not as audible to everyone involved in the tour; sometimes, one is not able to comprehend the things that the guide is saying; one might be unable to see the artefact properly. With the help of our app, all these grievances would be solved quite easily.

Literature Review

Our project is a self-thought idea to help improve the tourists' experience. According to reference [1] 8.8 million foreign tourists arrived in India in 2016 itself. If we look at the local tourists as well then, the count reaches 1613.6 million which is a very huge number. We got our inspiration from here and thought of making something which can help tourists navigate through the place and getting all the relevant information about different artefacts placed in a museum / monument / theme park. The website which is referred to in reference [2] allows the users to take a 360o view of different parts of Taj Mahal. We also thought of making something which can be used within the museum, and also at your home. So, we created a

website which can help you to get all the information just by sitting at your home. According to refence [3] there are many problems which are faced by the tourists when we talk with respect to the tour guides. Problems like high prices for foreign customers, non – understandable accents are just some of the problems which tourists have to deal daily. Our main aim was to device an app which can solve most if not all of these problems and can help the tourists in many other ways.

Government is taking many steps in promoting tourism in India. All this is referred to in detail in reference [4]. According to reference [4] schemes like Swachh Bharat Swachh Pakwan and Incredible India Helpline can boost the Indian tourism in direct and indirect ways. Technological advancements and moving ahead with time is also very important if we want to attract more tourists. Our app is also just a small initiative to improve user experience and help tourists in all possible ways.

What is the target market?

As mentioned earlier, your best clients will be those from the hospitality and real estate industries. This is because they will both have numerous rooms and properties for you to create virtual tours from, all of which adds up to a bigger payday for you.

What are the steps to start a virtual tour business?

Once you're ready to start your virtual tour business, follow these steps to ensure that your business is legally compliant and avoid wasting time and money as your business grows:

1. **Plan your business.** A clear plan is essential for success as an entrepreneur. A few important topics to consider are your initial costs, your target market, and how long it will take you to break even.
2. **Form a legal entity.** Establishing a legal business entity prevents you from being personally liable if your virtual tour business is sued.
3. **Register for taxes.** You will need to register for a variety of state and federal taxes before you can open for business.
4. **Open a business bank account.** A dedicated checking account for your virtual tour business keeps your finances organized and makes your business appear more professional to your customers.
5. **Set up business accounting.** Recording your various expenses and sources of income is critical to understanding the financial performance of your business. Keeping accurate and detailed accounts also greatly simplifies your annual tax filing.
6. **Obtain necessary permits and licenses.** Failure to acquire necessary permits and licenses can result in hefty fines, or even cause your business to be shut down.
7. **Get business insurance.** Insurance is highly recommended for all business owners. If you hire employees, workers compensation insurance may be a legal requirement in your state.

8. **Define your brand.** Your brand is what your company stands for, as well as how your business is perceived by the public. A strong brand will help your business stand out from competitors.
9. **Establish a web presence.** A business website allows customers to learn more about your company and the products or services you offer. You can also use social media to attract new clients or customers.

Value proposition

The foremost thing is that the user no longer has the need to search for a guide themselves. First the user will have to select which place he/she is at. Let's say he/she selects National Delhi Museum, then his/her personal tourist guide will start along with the brief introduction of the museum by audio in their desired language. One of the key features of this app is the intuitive instructions to the user, like directions to an artefact and basic info about it, with the option to get more insight into it after scanning a QR code put next to the artefact. As soon as the user is done, he/she can resume the audio tour and proceed to the next location / artefact. This intuitiveness and ease of use propels the user satisfaction and brand value of our start-up.

Customer Segment

The targeted customers are Youngsters or group of friends or any tourist who want to know more about artifacts and sites.

Our app attracts this section of people other segment of our costumer is travellers and smartphone users these combine majority of our targeted costumers as they belong to roughly half of our customers.

Channels

The channel used to reach the customer is the product itself that is a website. In future this can be expanded to cross-platform domain like Android and iOS applications, as well as pick-up stores from where user can directly pickup barrel on his own and thus cutting the delivery charges.

Customer Relationship

For Customer relationship management different social media platforms can be used where the customer will raise a query/ or will address a problem, which will be then rectified by the company. Also, feedback option will be available in our app and webpages, where we will be in direct contact with our costumers and our primary aim would be to reflect to the question raised. Other thing that we can do to strengthen our bond with costumer is we can provide with professional advisers which will help our costumer to use app better and help them to understand the platform in better way.

ExploreGuide				
Key Partners	Key Activities	Value Proposition	Customer Relationships	Customer Segments
<ul style="list-style-type: none">• Tour Creators• Partners (businesses)• App Stores• Cities districts (governments)	<ul style="list-style-type: none">• Advice• Information• Marketing• Entertainment	<ul style="list-style-type: none">• Knowledge• Culture• Unique Experience• Low price• Other products and brands (partners)• Aimless wandering• Novelty• Connection• Adventure• Gamification	<ul style="list-style-type: none">• E-mail for help• Reviews• Social Media• Partners	<ul style="list-style-type: none">• Youngsters• Groups of friends• Lonely travelers• Travelers• Thrill seekers• Smartphone users
	Key Resources		Channels	
	<ul style="list-style-type: none">• Intellectual• Human		<ul style="list-style-type: none">• App stores• Blogs• Users' social media• Partners' media	
Cost Structure		Revenue Streams		
<ul style="list-style-type: none">• Cost driven• App development (fixed cost)• IT Maintenance (variable)• Tour creation (variable)		<ul style="list-style-type: none">• Sponsors• Ads• Freemium• Per Tour		

Key Activities

The key activities identified are the audio and navigation features which helps the tourist to visit any monument or museum easily without the help of any physical guide. The key feature is that the information provided to the tourist is authentic and is given the genuine authority.

Key Resources

The most important resource is the navigation system which helps the tourist to visit the complete museum and they need not to take the help of others. Also, there will no be any communication gap as the information will be in many languages and the tourists can listen in the language, they are comfortable with.

Key Partners

Most important partner would be the museums, monuments and the public places like amusement parks. Advertisement agencies can also be identified as Key Partners as they are the one who will be bringing company/individual who wants to promote their product on the website which will be a major source of revenue for our firm. We will be contacting the museums and the historical monuments authority to take the help of our product so that the tourists do not face any problem in visiting the particular museum and monuments.

What are the costs involved in opening a virtual tour business?

The costs of opening a virtual tour business depends on the amount and type of equipment you buy as well as whether you work from home or not. For instance, it is possible to start a home-based virtual tour business for Rs. 50,000 or less. This includes spending approximately Rs. 30,000 on a DSLR camera, Rs. 25,000 on a fisheye lens, Rs. 20,000 on a panohead, and Rs. 3,000 on a tripod. In terms of software, you will need to spend approximately Rs. 35,000 on Panoweaver Professional Edition and Rs. 40,000 on Tourweaver Professional Edition. The rest of that budget assumes spending approximately Rs. 30,000 on a professional website and Rs. 60,000 on some traditional advertisements in things like newspapers and radio, though much of your advertising will be done via your website as well as your social media presence which you can establish at no extra cost.

The cost of this business can go up if you want to offer different services that require different cameras. For instance, a professional camera that can create 4K, 360-degree video will likely be Rs. 60,000 or more, and software to edit these videos (such as Autopano) may cost up to Rs. 15,000.

How to promote & market a virtual tour business?

As mentioned above, the best advertisement you can do is to showcase some of your best virtual tours on your website and social media feeds. For local businesses, it doesn't hurt to advertise in newspapers from time to time, and especially when your business first opens. Also, try to get in-person meetings with hotel managers and realtors whenever you can: the nature of your product is that you can quickly show prospective clients your results on a phone or a laptop, which is immensely helpful in pitching your products.

How much can you charge customers?

Your pricing may vary based on different packages, bundled services, and so on. Typically, though, a photo-based virtual tour of a museum or any other tourist place would be between Rs5000 and Rs10000 dollars, while a video-based virtual tour would be between Rs12000 and Rs15000. You may charge more for specialty services or requests (such as shooting at night, aerial photography, and so on), and you may experiment with pricing models where you charge businesses a monthly fee, such as Rs3500 a month for a fixed number of months to produce and edit an unlimited number of listings for this business.

What are the ongoing expenses for a virtual tour business?

One of the best aspects of this job is that if you work from home, you have virtually no ongoing expenses. Shooting everything digitally means that there is not an equipment cost after initial investment (until you decide to replace equipment entirely), and working from home means you do not have additional overhead, utilities, and so on to worry about. Functionally, then, you are merely paying for gas that you require to travel from place to place, and the charges to host your professional website (which should be less than \$80 a year). You may also choose to advertise via traditional media from time to time, but as mentioned earlier, much of your advertising presence will be online.

How much profit can a virtual tour business make?

The exact amount of profit that you can make from this business obviously depends greatly on how many clients you have and the amount of work that they provide. For instance, if you specialize in video tours and do hundred jobs in a year, this job could provide a six-figure income. Realistically, your profits will be lower when you are starting out, but the aforementioned lack of true overhead means that most of every dollar translates directly to profit.

How can you make your business more profitable?

One path to increased profitability is to offer different tiers of services at different prices. This lets customers feel like they are getting a deal while also giving you a chance to upsell them on better packages. Also, try to branch out—while hospitality and real estate are your primary industries that need virtual tours, you may find that corporations, school systems, and various city offices would also be interested in your services. Finally, make sure your social media presence constantly has a stream of new media highlighting your services, your previous work, and so on; this connects you to the community, which makes it that much likelier that the community will want your services.

Cost to develop city app

Now let's review how many hours are needed to develop the city guide app. First of all, take a look at the estimation of application both for iOS and Android in React Native.

Activity	Optimistic (hours)	Likely (hours)	Pessimistic (hours)
iOS/Android			
Registration/Auth	10	15	20
- facebook (or any other social service)	12	20	30
Location saving	8	16	24
- view	7	12	17
- filter	5	8	12
- search	5	8	12
Map Integration	14	20	30
- search by name, category, location, type	8	16	24
- filter	6	12	18
- map of public transport and its schedule	16	24	32
Object screen	12	16	24
Offline mode	20	40	60
Total	123	207	303

Here is the estimation of the back-end

Activity	Optimistic (hours)	Likely (hours)	Pessimistic (hours)
BackEnd			
Registration/Auth	8	12	16
- facebook (or any other social service)	10	20	30
Integration with Yelp and Tripadvisor	30	50	80
Location saving API	7	12	18
Recommendations and reviews API	8	14	20
Total	63	108	164

And, of course, the time needed for bug fixing, manual testing and management.

Activity	Optimistic (hours)	Likely (hours)	Pessimistic (hours)
Bug fixing (25%)	77,25	130,5	192,5
Manual testing (10%)	30,9	52,2	77
Management (10%)	30,9	52,2	77
Total	139,05	234,9	346,5

The total sum of hours needed for this app will range from 269 to 677 hours depending on the function you choose and their complexity. The cost of city mobile app development will vary on the developer's rate. For example, in the US prices for app development range from Rs. 6,000 to Rs. 15,000 per hour, while in Eastern Europe where our development offices are located, you can hire a senior developer for Rs. 2500-Rs. 4200 per hour.

Revenue Streams

Revenue Model:

Revenue Model	
Type:	Traits:
Sell the app	<ul style="list-style-type: none"> • Sell it one time • Sell per "tour" • Sell it for a certain time limit (like a license)
Advertising	Integrate advertising into the interface and collect money from the advertisers
Sponsorship	Businesses will pay in order to have the app bring customers to them (i.e. a tour starts/ends at a restaurant)
Freemium	<ul style="list-style-type: none"> • Offer basic services for free, but charge for better services • For example <ul style="list-style-type: none"> ○ Basic tours could be free, but there could be subscription options for other tours ○ The ability to get extra features (i.e. upload/download capabilities) ○ Unlimited usage (only allow a certain amount of free usage) ○ Better profile (i.e. allow to connect with other people)

Sales Model:

Sponsors will be the main form of revenue. Earnings will vary.

Potential Revenue From Sponsors								
Number of Tours (2 Sponsors/Tour)	5	10	15	20	5	10	15	20
Sponsor Fee/Month	\$15	\$15	\$15	\$15	\$25	\$25	\$25	\$25
Revenue Generated/Month	\$150	\$300	\$450	\$600	\$250	\$500	\$750	\$1,000
Revenue Generated/Quarter	\$450	\$900	\$1,350	\$1,800	\$750	\$1,500	\$2,250	\$3,000
Revenue Generated/Year	\$1,800	\$3,600	\$5,400	\$7,200	\$3,000	\$6,000	\$9,000	\$12,000
Number of Tours (2 Sponsors/Tour)	5	10	15	20	5	10	15	20
Sponsor Fee/Month	\$35	\$35	\$35	\$35	\$50	\$50	\$50	\$50
Revenue Generated/Month	\$350	\$700	\$1,050	\$1,400	\$500	\$1,000	\$1,500	\$2,000
Revenue Generated/Quarter	\$1,050	\$2,100	\$3,150	\$4,200	\$1,500	\$3,000	\$4,500	\$6,000
Revenue Generated/Year	\$4,200	\$8,400	\$12,600	\$16,800	\$6,000	\$12,000	\$18,000	\$24,000

Difficult to forecast because it depends on too many factors:

- Number of Tours
- Number of Downloads
- Other Sponsors
- City
- Size of the Sponsor
- Length of Contract

Future Goals

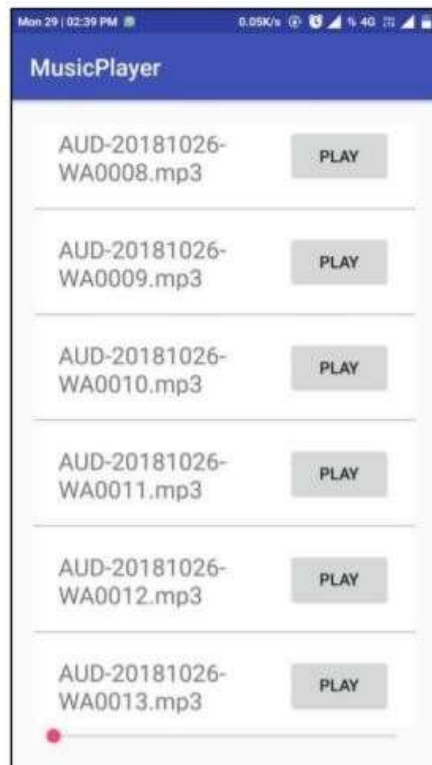
- Release the app: Start with simple, basic version, and update to newer versions with growth that have more features and functions
- Strong Intent to Sell
 1. Attempt to sell the product to a larger company who is searching for technology or brand name
 2. Develop a strong brand and customer base
- Update for Regulatory Changes: Follow closely and update product to match

Results and Conclusion

- Our upcoming app can be very helpful to the societies
- The low subscription cost of the app should be able to attract people
- Specially, for India this app can be very useful because of our rich heritage and culture
- This app can be a worldwide using app in near future

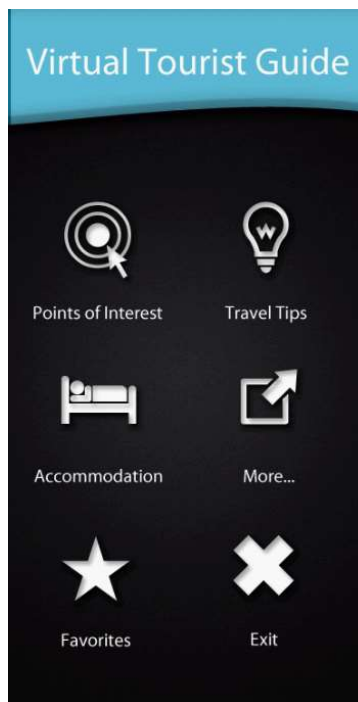
Snapshots:

Navigation and brief information in audio format



Storyboarding

Barcode/QR code Scanner



Website

Not secure | walkthroughindia.com/attraction/top-25-famous-landmarks-and-historical-monuments-of-delhi/
Gmail YouTube Maps

Red Fort



Red Fort is one of the historical place in Delhi and a designated a world heritage site. The fort and complex houses a number of museums, Mahal, Bagh, reservoir and Gate.

Not secure | walkthroughindia.com/attraction/top-25-famous-landmarks-and-historical-monuments-of-delhi/
Gmail YouTube Maps

Rashtrapati Bhavan

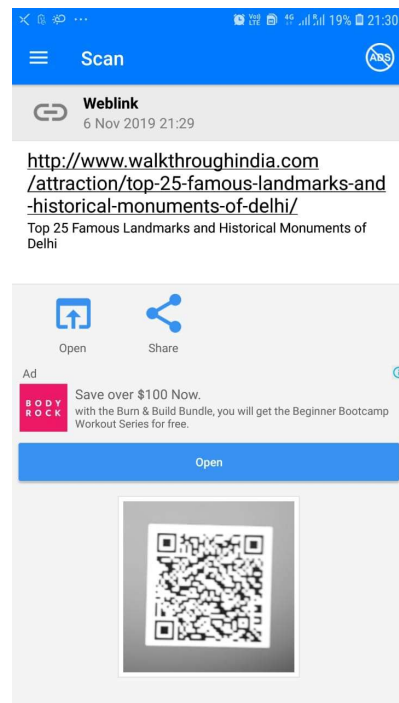
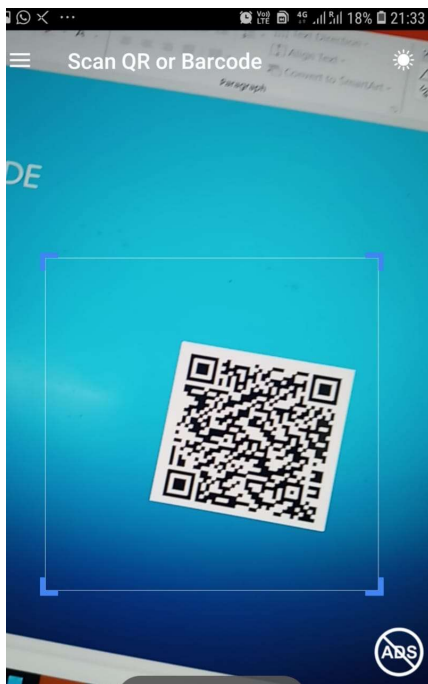


Rashtrapati Bhavan of New Delhi is the official home of the President of India and the largest residence of a head of state in the world. The Presidential Residence house many halls, Dome and a beautiful Mughal Garden.

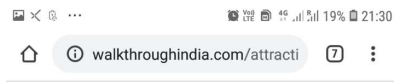
Barcode



Scanning



Result



Red Fort



Red Fort is one of the historical place in Delhi and a designated a world heritage site. The fort and complex houses a number of museums, Mahal, Bagh, reservoir and Gate.

Qutub Minar



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