

Team Tip Panda

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Team Members

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Industry

Food and Restaurant Industry

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I. Executive Summary

Opportunity Overview

After a meal at a restaurant, we tend to write a tip to the waiter/waitress who served us, but have you ever wondered where that money is going and how exactly is it being distributed? In reality, the current tipping system does not credit each employee fairly for their share of the work. We were inspired by many entrepreneurs, industry leaders and workers in the food services industry who mentioned that there is a large plurality of the population who remain unbanked or underbanked, and a large number of this population earn their livelihood through the food service industry.

There are 3 current options for distributing tips in restaurants, all of which can negatively impact certain employees:

- The restaurant distributes all tips equally among all employees, in which case employees who work harder don't get their fair share of the tip
- The restaurant allows employees to keep their individual tips, in which case employees such as chefs and cleaning staff don't get their fair share of the tip

- The restaurant holds on to tips and often does not fairly or transparently distribute the tips amongst employees

Tip Panda is our solution to ensure equitable tipping in restaurants, and helps strike a balance between equal and unequal tipping. This system ensures that all employees, whether it be chefs, waiters or cleaning staff, get tipped fairly, thereby incentivizing quality service.

In addition to this, the current pandemic has produced a unique set of challenges for businesses in the food service industry which has disrupted revenue generation and livelihoods of millions of workers. To address this, we envision our platform to have a score/rating systems which directly indicates to customers the level of financial distress a business is facing so as to provide an additional impetus to order from the business or be more generous with their tips.

Strategic Rationale

Our product provides benefits to all the users involved in our system. The employees get rewards for individual hard work, as well as get a more fair distribution of tips. The managers benefit, as their employees will work harder and provide quality service. Both the employees and managers get benefits through the microloans system. Lastly, the customers will benefit, as they can tip fairly and transparently, in a very convenient manner. This makes our business model very robust. Lastly, by placing control over the tip and distribution in the hands of the customer, and not the manager, Tip Panda has distinguished itself from other tip pooling applications.

Using the distress rating/score system, customers can easily see which restaurants are currently under financial stress due to the pandemic and can patronise them accordingly. The microloans system can be shared between restaurants in the industry in order to provide financial relief to the workers most affected by lockdowns and quarantines.

Market Analysis & Target market

Every year, worldwide, over 3.2 trillion USD is spent on outdoor dining, out of which over 320 billion USD is spent on tips. This makes our market very significant, especially considering that our competition is not very large.

In addition to this, typical microloans among workers in the same industry and workplace have traditionally been lower risk, higher return rates and are conducive to protection against financial shocks.

Team

Our team consists of front-end and back-end developers. We collectively conceptualized the problem statement, validated our solution, created a prototype of our solution, and ideated the business model, and user experience and interface design.

Execution

We would first like to get our app fully developed at an enterprise grade, using more robust technologies. Next, we would like to pilot it with 2-3 restaurants, and get user feedback. Finally, we will release it as a full app with a partnership with a few banks and financial institutions.

Risk

II. Team Description

Our team consists of 4 members from different parts of the world. The first two members are Veer Gadodia, a rising senior from Boston, and Nand Vinchi, a rising junior from Bangalore, both of whom have a passion for computer science with research and project experience in machine learning, artificial intelligence, and computer vision. The third member is Muntaser Syed, a PhD candidate in Computer Engineering with a focus on Machine Intelligence and blockchain at the Florida Institute of Technology.... The fourth member is Ebtesam Haque, a Computer Science and Engineering major in her senior year at Islamic University of Technology with app and web development experience. Her research interests include network security, blockchain and machine learning.

III. Products & Services

Tip panda provides a digital platform for tip sharing, and forms a direct link between the customer and the employees to increase equity and incentivize quality work. We use a novel rating system and algorithm to give extra credits and incentives to harder working employees. This system works in the following way:

Tipping System

1. After a meal, the waiter/waitress opens up Tip Panda, and selects the names of all the employees involved in preparing the meal (such as the chefs, cleaners etc.)
2. Next, our app automatically generates a QR code that links all this data to our database. The customer now opens Tip Panda and scans this QR code. Then, they enter the tip amount, and also optionally rate their experience such as the food, service, hygiene etc.
3. Now, the customers can pay the tip with the click of a button, and the money is transferred to a pooled tip jar for the restaurant, where it is split equitably among the employees based on ratings. If no ratings are given, the money is split based on an employee-specific average of previous customer's ratings. To make this system fair, the

bias is reset every month. We also make all the tip data available to all the employees to view to ensure integrity.

Loan System

There is also a microloan system where employees can request loans from a common restaurant tip jar. These loans are either accepted or rejected based on voting by the other employees. For the employees who vote yes, their share of the loan will be transferred to the employee in need. The employee in need will be required to pay back the loan on a deadline of their choosing. The employees who vote in favor of the loan have the interest repaid with the loan divided amongst them in a manner proportional to the funds provided for the loan.

Financial stress rating/scoring:

Customers are able to view the level of financial stress a business faces while ordering and paying their bill. This model is based on an ARIMA based approach which considers the average revenue generated and tips received. Customers and employees can view this rating and order/tip/loan accordingly.

Restaurant and Employees

Each restaurant is owned by a manager account, who can add or delete employees from the restaurant, as well as assign roles to the employees (either chef, server, or cleaning staff).

Why this product or service

Our product benefits everyone involved in the system:

Customer

It provides assurance to the customer of the tip reaching the intended recipient, as well as assurance of equitable distribution based on customer experience.

Before ordering, during paying and tipping the customers can view the financial distress score of the restaurant, thus providing additional encouragement to order and tip.

Employee

For employees, our system guarantees the receipt of tips, as well as the receipt of equitable tips that reward individual hard work. Our system also allows employees to loan money from fellow colleagues from their workplace as well as workers at other places in times of need.

Restaurant

Our system ensures that employees are driven to work harder, increases customer satisfaction, and reduces work for the restaurant.

The restaurant has a chance to boost their revenues in case of financial stress by displaying their financial distress score.

What problem does it address?

Tip Panda addresses the problem of inequitable tipping systems that currently exist in the US.

There are three major types of tipping systems, none of which are equitable:

1. All the tips go to the waiter/waitress, leaving the chefs and other staff with no tips at all.
2. Tips are distributed equally, which does not account for individual hard work.
3. Tip theft, in which restaurant owners and managers are unfairly taking tips earned by the staff.

Tip Panda strikes a balance by keeping the tipping system fair and with equal opportunity to all employees, and at the same time rewards individual effort.

During times of financial stress such as lockdowns, using the financial distress rating allows additional revenue generation by encouraging more business.

How will this product/service be manufactured and/or delivered?

This product will be delivered as a mobile application for iOS and Android, on the Apple app store and Google play store. We will use React Native to create the front-end of the mobile application, Node.js to create the back-end, Microsoft Azure serverless functions as part of our serverless technical architecture, and CosmosDB as our database for the application.

What sets this product/service apart from competitors? How is it unique?

Tip Pooling as a concept is currently available only as localized and relatively feature-scarce solutions; so we decided to come up with an approach that closes the loop on fair and equitable payments as we integrate with our microloan service.

Based on extensive research, our main competition are apps called Tip Pooling, Tanda, and Tip Haus. Tip Haus is a tip distribution software with an automatic tip distribution system, but it is controlled by the manager of the restaurant, instead of the customers, thus causing it to have a fundamentally different approach from ours. Tip Pooling, on the other hand, has a similar process as Tip Haus, but their solution is not a mobile app, it is a service that is integrated with restaurant billing systems. Tip Panda comes with a virtual tip jar feature which splits the tips among employees based on the hours they worked. Our competitors usually provide tip pooling as a part of their payroll processing/POS systems. These systems charge a fee every month in addition to fees per transaction. Currently there aren't any existing solutions that offer automated tip pooling based on customer feedback in addition to facilitating microloans for employees.

The financial distress rating/scoring system is novel and we have not found a direct equivalent to this in our research.

We do not currently consider these apps our competitors, as we have a vastly different product comprising a unique customer review system to help distribute tips equitably, and a micro-loan system to help employees. Our solution is equitable, efficient, and does not incur hefty costs.

IV. Market Plan (1-2 pages)

Market research

The global outdoor dining market was 3.2 trillion USD in 2016. Of this, the Americas Region had a share of 863 billion USD. Averaging tips to 10% in the US gives us a figure of 86.3 billion USD. Optimistically, a 10% share of this market will mean 8.63 billion USD of cash will flow through our system annually. This does not account for other non-food verticals in the service industry such as hospitality, tourism etc.

Competitive Landscape

Based on extensive research, our main competition are apps called Tip Pooling, Tanda, and Tip Haus. Tip Haus is a tip distribution software with an automatic tip distribution system, but it is controlled by the manager of the restaurant, instead of the customers, thus causing it to have a fundamentally different approach from ours. Tip Pooling, on the other hand, has a similar process as Tip Haus, but their solution is not a mobile app, it is a service that is integrated with restaurant billing systems. Tip Panda comes with a virtual tip jar feature which splits the tips among employees based on the hours they worked. Our competitors usually provide tip pooling as a part of their payroll processing/POS systems. These systems charge a fee every month in addition to fees per transaction. Currently there aren't any existing solutions that offer automated tip pooling based on customer feedback in addition to facilitating microloans for employees.

Target Market/Niche

Our target market is any and all restaurants, where the customer gives a tip to the employees. Our target consumers are people who are conscious about fair tipping, and are also willing to review their meal.

E- Marketing tactics & budget

We would like to make a 'Tip Panda Certified' branding for restaurants on platforms such as Yelp, which will further incentivise restaurants. We would also like to run ads on instagram and

youtube for our product. We will also personally reach out to local restaurants, and keep building on by spreading the word and expanding our reach. Lastly, we would like to give monetary incentives and cashbacks on tips, during the initial launch.

Pricing Model

We will charge a 0.5% commission on all tip transactions above a certain threshold, a 1% service fee on all internal microloans, and a 2% service fee on all external transactions. We will also have in-app advertisements on our application.

The advertisement rates will be largely discounted by the financial distress scores of restaurants.

Distribution Model

We would like to release our app free of cost in the Apple App Store, and the Google Play store. As mentioned above, we will initially provide cashback incentives to our consumers. We will also get restaurants to promote our product to their customers.

V. Operational Plan

How will this work?

Our app will be first piloted with a few restaurants. Then we will openly release it on the appstore and playstore for users.

Customers can view the financial distress score of restaurants before they order. Then after an order is placed/delivered, the tipjar system will work as detailed below.

The app will work as follows:

1. After a meal, the waiter/waitress opens up Tip Panda, and selects the names of all the employees involved in preparing the meal (such as the chefs, cleaners etc.)
2. Next, our app automatically generates a QR code that links all this data to our database. The customer now opens Tip Panda and scans this QR code. Then, they enter the tip amount, and also optionally rate their experience such as the food, service, hygiene etc.
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Microloan system:

- Workers can request a microloan with a justification and proposed amount and interest rate and repayment terms and schedule
- If the loan request is open to workers from other places, additional documentation will be required

- Once the microloan request is placed, other workers can view it.
- If a worker decides to fund the loan, they will enter the amount they are willing to fund and their agreed interest rate.
- This process continues until the request amount is filled or the terms are changed or request is withdrawn.
- The funds will primarily come from the communal tip jar, but only those workers who agree to fund the loan will have their share in the loan, other workers will have their share of the tip jar intact.
- Once the loan has been paid off, a service charge of 1% for internal loans and 2% of external loans will be charged.

Production of goods/ delivery of services

We would like to release our app free of cost in the Apple App Store, and the Google Play store. Our back-end will be running in the cloud.

Quality control

We will ensure transparency of the entire system by making the entire tipping data available to all employees and the manager. Our algorithm also ensures that all employees get a certain percentage of the tip as the base amount, then the rest is distributed via ratings.

Personnel requirements

We require the manager and employees of the restaurant to consent to and adopt our system. However we believe that this will not be an obstacle, because of the benefits our app provides over the current system.

Technology Requirements

Our current tech stack consists of the following:

- React Native for front-end
- Python + Azure serverless functions for back-end
- MongoDB for database

Our future tech stack consists of the following:

- React Native for front-end mobile app - We chose this because of its robustness, as well as compatibility with both android and IOS devices.
- Azure serverless functions for back-end endpoints- We chose this because of flexibility of programming language, efficiency and cost effectiveness.
- Azure CosmosDB for database - We chose this because of its consistency, efficiency, and cost effectiveness.

- NodeJS for back-end functions - NodeJS is extremely robust and scalable.

The main costs are of the cloud database and serverless functions.

VI. Financial Plan

- Financial goals

- + Provide liquid capital for workers and businesses in the food service industry
- + Provide microloans at competitive/superior terms to workers in the food service industry compared to traditional banks
- + Generate additional financial opportunities for workers and thereby produce a stable revenue stream

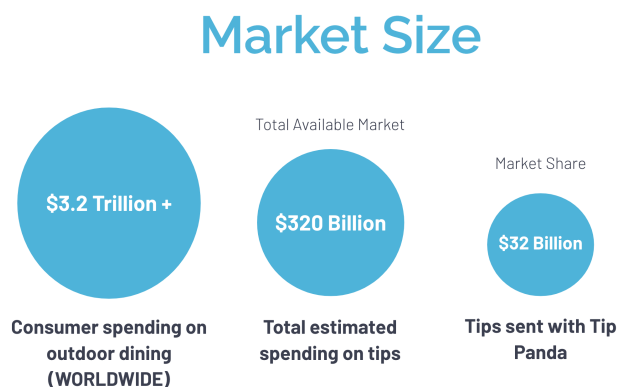
- Near-term and mid-term profit & loss projection

- + Please see Appendix

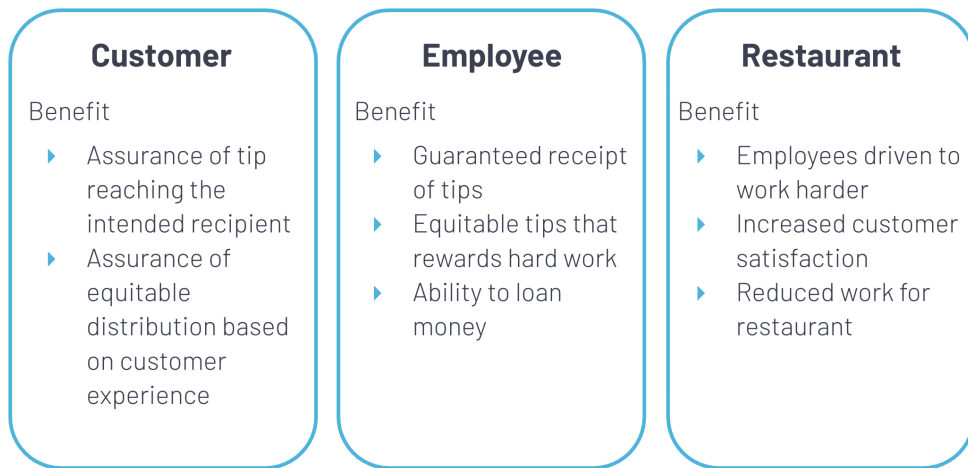
- Use of capital

- + Please see Appendix

VII. Appendices (if needed)



Cost-benefit Analysis



Milestones

