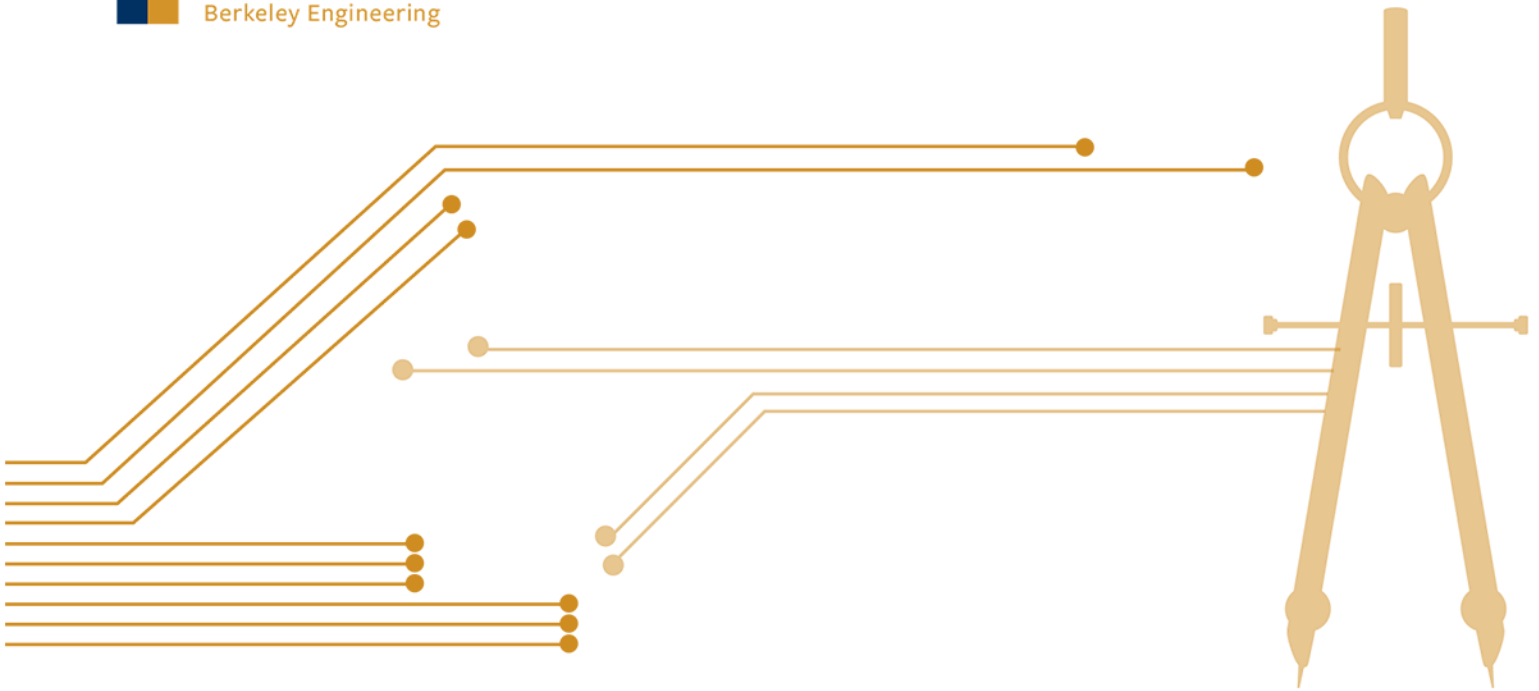




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How Mobile Apps Can Disrupt the Bar Experience of the 21st Century: A Landscape Report

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1 Introduction

Since the introduction of the iPhone in 2007, mobile applications (or “apps”) have disrupted a substantial number of industries, including exercise (*FitBit*), mobile payments (*VenMo*, *Apple Pay*), communication (*WhatsApp*, *Snapchat*), and transportation (*Uber*, *Lyft*). Other areas are seeing change through mobile apps as well, such as grocery store delivery (*Instacart*). We believe that this trend will continue into other untouched industries.

One such example is the Bar and Nightclub Industry. This space has seen relatively little change over the past 100 years and we hypothesize that there is a large untapped potential for mobile apps to bring about change in this area. The goal of this industry landscape analysis is to define the current players and their interactions, evaluate ways in which mobile apps can affect this landscape and identify challenges for their adoption. We also highlight current companies in this space and propose new opportunities to beat this competition.

2 The Current Bar Industry Landscape

The central player in the Bar & Nightclub Industry is the *bar*, which we define as any establishment that primarily serves alcoholic beverages for immediate consumption, likely with limited food service. There are over 65,000 bars in the U.S. and these establishments were visited by up to 30 million people per month in 2014 [1]. The overall market size is \$23 billion per year with an addition \$3.5 billion per year spent on alcohol advertisements [2].

Taverns make up the largest share of the market (32%), while nightclubs (8.6%) come in with the smallest fraction [3]. Revenue is generated by selling drinks and food to *customers*, which can be highly affected by factors such as general consumer spending, the consumer confidence index, and the healthy eating index [4]. The industry has low profit margins that make it susceptible to any adverse changes in demand and also has high product turn-around which requires careful inventory management (since a large fraction of the inventory decreases in quality over time). Customers on average order 2.3 drinks per visit with men typically ordering more drinks than women [3]. From interviewing customers, we found that they want to have a good experience, save money, not be strongly impacted by the ordering process, and enjoy drinks they like.

In the U.S., alcohol is sold in a three-tier system which consists of *manufacturers*, *distributors*, and *retailers* (a.k.a., the bars). Legally, manufacturers must sell their products wholesale to distributors and only retail institutions are able to sell to customers directly. There are around 3,000 independent beer distributors in the U.S. [5] and this large number provides an advantage to small manufacturers, allowing their products to be sold alongside big players such as *Anheuser-Busch* in the same retail establishment [5]. Most distributors and bars are local, independent businesses. This is partly due to varying state and county liquor laws, which makes forming chains difficult. Distributors send out local salesmen to bars where they both discuss the wants of the owner and observe the buying behavior of customers. They are also incentivized by manufacturers to push particular products and often work on commission. They then make recommendations and arrange sales to the retailer.

There is a large variation both in terms of size and types of alcohol manufacturers in the U.S. Most fall under the large umbrellas of breweries, distilleries, and wineries. In the U.S., the largest brewery is *Anheuser-Busch InBev* (Budweiser, Michelob, Stella Artois, Shock Top), the largest distillery is *Diageo* (Johnnie Walker, Crown Royal, Smirnoff), and the largest winery is *E&J Gallo* (Sonoma County-based wines). This portion of the industry has become

more fragmented over time with the rise in popularity of both microbreweries and local drink manufacturers [6]. This has strengthened the role of distributors as curators of the expanding manufacturing market and diluted the market share of the traditional major players. Manufacturers both advertise and incentivize distributors in order to push specific products. And although they cannot legally sell to retailers, manufacturers still advertise to them in order to push products.

3 Potential Areas of Change Induced by Mobile Apps

Mobile Apps have the potential to induce change in interactions between any of the players in the bar industry landscape. In fact, we have seen at least one instance of a company targeting the interaction between distributors and bars by continuously measuring beer keg levels to determine when new supplies need to be ordered (*DigitalPour* [7]). However, the highest levels activity we saw were in changing the interactions between bars and their customers through mobile apps. We therefore focus on this space.

Through brainstorming, analyzing existing companies and interviewing workers and customers at bars, we identified the following areas in which we see the largest potential for mobile apps to change the interaction between bars and their customers:

1. *Tab Management*: Manage and pay your bar tab with a smartphone rather than manually, including the ability to split it with others. A closely related feature is ordering drinks from your phone rather than at the bar.
2. *Drink Recommendations*: A feature that tells you which drink you should buy at a particular bar based on your personal taste profile (i.e., “Pandora for drinks”).
3. *Create your own Cocktail*: Design your own cocktail on your phone and have it made by the bar. The app can guide you in creating the cocktail to ensure you will like it.
4. *Social Sharing*: Share your favorite drinks at a bar with others. We originally envisioned that this could link into the “create your own cocktail” feature, allowing users to share their own recipes with others and to vote for others’ cocktails.
5. *Virtual ID*: Instead of showing your physical ID to gain access to the bar, your smartphone could be used to verify that you are 21 years or older.

3.1 Methodology

To investigate the feasibility of these features, we started with an online survey to understand the customers’ perspective (Appendix A). This helped us gauge both the likely adoption of features by users as well as likely implications for businesses operating in this area. Our survey had 58 responses overall; respondents were 41% female, 91% of them were between 21-30 years old and 86% of them visit bars at least 1-5 times per month. 62% of respondents were from the Bay Area, with everyone else being from places as diverse as the UK, Germany and Finland.

Based on the initial survey, we designed an interactive mock-up of a mobile app with some of features most likely to be accepted by users (Figure 1). This gave us a starting point to talk to workers and customers at bars and gain more specific insights. We visited *Pacific Coast Brewing/PCB* (Oakland), *Pappy’s* (Berkeley), *Somar* (Oakland), *Home of Chicken and Waffle* (Walnut Creek), *Bin 26* (Boston) and talked to *Back Bar USA* in Las Vegas. Quotes in this report are **paraphrased** information given to us during these interviews.



Figure 1: Our mock-up of an initial mobile app, designed using the Justinmind prototyping platform. The features demonstrated are (left-to-right): tab management, drink recommendations, drink creation and social sharing.

In addition to our own interviews, we gained valuable insights from understanding the story of *Flowtab* [8], a startup that worked on a tab management/drink ordering mobile app and folded in 2013. The founders published their experiences and materials (such as their pitch deck, proposals and a detailed timeline), providing a gold mine of insights.

We now discuss each of our features in turn and summarize our conclusions based on what we learned about their potential for adoption in the current bar industry landscape. We then highlight business opportunities and challenges they result in.

3.2 Tab Management

The way customers currently manage their tab is inconvenient and insecure. Upon arrival at the bar, they hand their credit card to the bartender and then order using their name. Upon leaving, they ask the bartender to close the tab and pay the bill. This can be inefficient, especially in busy bars: asking for the current amount on the tab and closing it leads to long wait times and causes overheads for bartenders and customers (as we learned during one of our interviews). The system is also insecure, since other customers can overhear a name and put drinks on that tab. Finally, using pen and paper to pay the final bill can be tedious.

A smartphone app may substantially improve this experience by allowing customers to manage and pay their tab by phone. This could also make it easier to split a tab among a group. We therefore hypothesized this feature would be popular with customers.

This intuition was confirmed by our survey: 81% of respondents said they would be likely or very likely to use such a feature and 43% said it would likely or very likely affect their choice of bar. This indicates that there is general interest in such a feature and that there is potentially an incentive for bars to offer such a system to get more customers. We also learned that a tab splitting feature would likely be used, as 99% of respondents said that they most commonly go to bars to meet with friends.

Our bartender interviews confirmed our customer survey from the bars' perspective. We learned that "customers get very worried about their tabs and ask about them, especially when it is busy" and "bartenders spend too much time checking and managing tabs, while they would prefer to spend all their time pouring drinks" (Somar). This indicates that our

survey results are not a false positive and that managing the tab is a real pain point for customers. It also indicates that bars lose time and money from tab management, and therefore have a monetary incentive to address the problem. This indicates a business opportunity.

3.3 Drink Recommendations

Our survey indicates that for 69% of customers, the quality of the drinks is important or very important. This suggests an opportunity to improve the bar experience by helping customers select the drinks they like the most. It is therefore unsurprising that our survey yielded that 62% of respondents would be likely or very likely to use a drink recommendation feature and 40% said they would be likely or very likely to choose a bar based on it.

We also confirmed that customers are susceptible to be influenced in their drink choice. In response to a survey question asking customers how they make their drink choice, 70% indicated that they choose their drink in a way that is amenable to outside influence (“random”, “the bar’s specialty” or “what others order”). We confirmed the spread we saw in our survey by talking to customers at Pappy’s.

The fact that customers are willing to be influenced in their drink choice represents a business opportunity, as different players in the bar landscape have an interest in affecting customers’ drink choices.

First, bars themselves have motivations for influencing their customers’ drink choice. During our interviews, we learned that bars “want to get customers [drinks] they like” (PCB) but that “customers often don’t know what they want” (Somar). Helping bars to serve customers the drink they are most likely to like adds to their business. Further, drinks have different profit margins and it may be beneficial for a bar to push drinks with higher margins.

The other groups that benefit from influencing drink choices are drink manufacturers and distributors. They currently achieve this goal through drink advertising, a market that was \$3.5B in 2014 [2]. We confirmed the importance of this market by talking to bartenders, learning that “[they] have sales representatives from drink companies all the time” (PCB).

We also talked to workers from Back Bar USA, a marketing company that pushes specific drinks at Las Vegas bars. Back Bar USA is paid by both bars and drink manufacturers to entice customers to buy specific drinks, through incentives such as free pint glasses. This confirms that both bars and drink manufacturers are willing to spend money on influencing their customers’ drink decisions.

Drink recommendations therefore are a chance to serve this market while at the same time giving customers a better experience, something both them and the bars want.

3.4 Create your own Cocktail

In our bar interviews, we found out that this feature would likely be rejected by bartenders and bars. We learned that “bartenders take pride in their work” and that “cocktails are an art” (PCB). As a result, bartenders would likely reject (or at least dislike) being told what to do. We also found out that “bartenders are trained to do the core cocktail menu very well and efficiently” and that “once you go outside the core menu, cocktails are less good”, take longer to make and are more expensive for the bar. We also heard concerns that “customers don’t know how to make a good cocktail” (Somar), even though we believe this can be alle-

viated by letting the app assist the user (similar to how the Rock Band video game does not require you to actually play an instrument).

The single positive feedback we heard was that “anything that helps users get a cocktail they like is good” (Somar). However, overall, it appears that many bartenders and bars would likely reject this feature while it is not clear how popular it would be with users.

3.5 Social Sharing

Based on the current landscape, it is evident that Social Media is import for bars. Within the bars & restaurant industry as a whole, 80% of establishments claim they are active or very active on Social Media [9], with 50% expecting to increase their social media presence in the near future. As such, this represents an important market.

However, bars and restaurants operate their social media profiles on existing platforms such as *TripAdvisor*, *Yelp*, *Facebook*, *Foursquare* or *Instagram*. It is therefore unsurprising that companies in this space focus on these existing platforms. One example is *Sprout Social*, a company that helps businesses (including bars) manage their online presence.

As such, building a standalone social experience for bars appears to be an uphill battle (one that has often failed: take Apple’s Ping Social Network as an example [10]). As such, a more promising strategy may be to focus on integration into existing social media platforms and use social sharing as a secondary feature.

3.6 Virtual ID

Putting any legal questions aside, our customer survey showed that 57% of respondents would be likely or very likely to use this feature. However, for only 22% it would actually have an impact on their choice of bar, which shows that this result is a false positive in terms of value that it actually adds for users. As such, replacing ID documents with a mobile app it is unlikely to be a successful primary feature.

3.7 Summary

In conclusion, our research indicates that tab management and drink recommendations are the most likely features to be adopted in the near future. Both appear to be popular with customers and have a strong business case behind them.

4 Challenges for Mobile Apps in the Bar Space

While we identified tab management and drink recommendations as the most likely areas for smartphone apps to change the bar experience, none of them have seen widespread adoption yet. The only significant player in this space is a company called *TabbedOut*, whose adoption we estimate to be below 2%¹

We therefore tried to understand why this transition has not happened yet. We focus specifically on tab management, as it is the feature with the highest popularity from our survey and has seen the most commercial activity so far.

¹ TabbedOut claims to be supported by 10,000 bars and restaurants, out of a total of over 630,000 [19], assuming a roughly constant split between bars and restaurants.

4.1 Customer Adoption

As we show in Section 5, many companies have attempted to enter this space, but none has taken over a substantial share of the market. In fact, one of the bars we interviewed told us that they “get someone pitching this idea every three months” (PCB).

Another bar we interviewed had even tried a tab management system themselves at some point, but customers did not use it. This was puzzling to the bar -- they told us that the system “was very popular” and “should have worked”, but in the end “nobody used it” (Somar). They therefore ceased using the system, even though the company gave them better terms for payments than their existing payment processor.

This raises the question why customers did not use the app. One possible explanation would have been social reasons, such as a stigma associated with using a phone to interact with the bar. However, this is refuted by our survey. According to our results, whether or not someone uses a smartphone app to interact with the bar does not significantly influence others’ view of them, and bars supporting such apps are actually seen positively.

We therefore hypothesize that the problem is in getting customers to use the system. One possibility is the friction of installing an app or that the benefit of using the app to check or pay one’s tab occurs at a later point in time than the decision to use it (which is made when opening a tab). However, more validation is required to confirm or refute this hypothesis.

4.2 Interfering with Bar Workflow

During our interviews, we learned that bars have major concerns about anything that affects their workflow. We found out that if a system adds “even the smallest bit of overhead” (PCB), they would not use it.

Specifically, our app mock-up used QR codes to quickly communicate to bartenders which drinks to order. According to at least one bartender, this is “a bad idea” (Somar), as scanning barcodes takes up too much time.

It therefore appears that any successful mobile app in this space would have to be completely transparent to the bar’s operation, most likely by directly integrating into the Point-of-Sale (POS) system the bar is using. Fortunately, most POS systems make it easy to integrate third-party applications and Flowtab made their integrations for a wide range of systems public, hence providing a good starting point for new companies entering this space. TabbedOut has also demonstrated the benefits of directly partnering with POS providers.

4.3 Business Model

The final challenge is how to generate revenue. This appears to be the challenge that caused many previous companies to fail, including Flowtab.

Based on the relatively low probability that customers would choose a bar based on the availability of a mobile app, it seems unlikely that they would pay for it. Any attempts to have the customer pay for the app are therefore unlikely to work (Flowtab, tried this initially and quickly changed strategy after it did not work).

Another model would be to charge the bar, either for using the app or for analytics derived from the use of the app. While several companies had moderate success with this model (e.g., TabbedOut), it leads to a high bar acquisition cost and requires a large and cost-

ly sales team. Flowtab described the acquisition cost as \$1,500-2,500 per bar and their published proposals are a testament to the complexity of signing on a new bar and working out the conditions. This indicates that making money by signing up bars is difficult.

An alternative model would be to make the app free for bars and enable them to install it themselves (one way to increase adoption would be to generate an incentive for bartenders to install it, for example by setting the default tip of the app higher than what customers usually tip). In this case, no sales team would be needed and the adoption could be achieved through word-of-mouth. This model was used by an app called Coaster in 2013 [11], but they tried it shortly before running out of money and therefore never got traction.

If the tab management app itself is free, money would have to come from other sources. This is where drink recommendations could come in as a secondary feature. Since they represent an opportunity to influence customers' drink decisions, they can potentially generate advertising revenue from drink manufacturers and distributors. Another potential revenue stream could be selling data collected from the app to data aggregators (detailed data sets are potentially worth \$1.72/quarter/user, according to one valuation [12]).

4.4 Summary

Finding solutions to the three challenges laid out in this section is crucial for being successful in this area. We will next present companies that are active in this space, analyze the strategies that they chose and predict which of them we see as most likely to succeed.

5 Existing Companies in the Space

A number of companies developing bar-related applications have existed in the U.S. since 2009 (Figure 2). These apps deliver functions from drink ordering and payment with or without tab management to drink recommendation, social sharing of drinks, and drink mixing recipes. Although some of the functions (like payment and social sharing) are also covered by more general applications such as *Venmo*, *OneScan*, *Facebook*, *Yelp*, etc., we list here only the applications focused on bars, with the biggest identified player at the end.

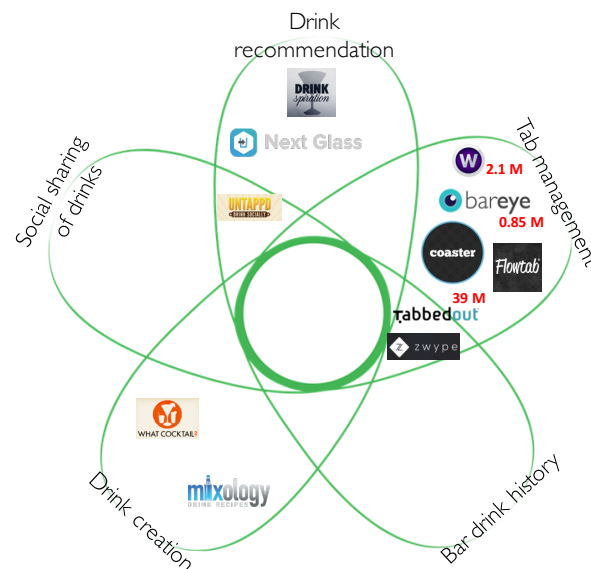


Figure 2: Competitor Diagram

Mixologist (a paid app) and *Mixology* (its free counterpart) allow users to search for cocktail recipes. Both feature a database of about 8,000 recipes and 1,300 ingredients. The database is searchable by category or ingredients, which allows users to pick cocktails based on the ingredients they already have. Users can also add drinks to a favorites list, enter custom recipes or use the app to find nearby liquor stores and bars. Both apps were launched in 2009.

Untappd is a social network for beer enthusiasts. It allows users to check into bars, tag beers and share them with other users. Users can also rate and share pictures of their beers, earn badges and have the app recommend beers based on a personal taste profile. Untappd integrates with Twitter, Facebook and Foursquare, which allows it to share beers and check-ins to other social networks and pull in locations from Foursquare. Untappd was launched in October 2010 and grew to 1 million users by January 2014. In January 2016, it was acquired by Next Glass (see below).

Flowtab (which we mentioned in Section 3) was a mobile app that provides bars and nightclubs and with a mobile drink ordering and payment service. It was launched in 2011 and folded in 2013. The company notably shared their experiences online, providing a unique post-mortem analysis of the rise and fall of a startup.

Drinkspiration was an app by Absolut Vodka that featured over 500 drink recipes and can recommend drinks based on the user's taste profile. It was launched in 2012 and its present status is unknown.

Coaster was a mobile app similar to Flowtab that allowed customers to order drinks and pay their tab using their phones. It launched in 2012 and was discontinued in 2013.

Bareye is another app similar to Flowtab, with the difference that its focus was on browsing drink menus on the phone. While it was possible to pay for purchases from within the app, these purchases still had to be redeemed with the actual bartender. Bareye was founded in 2010 and has raised \$850K [13].

WillCall is unique in that it specifically targets live music venues. Many establishments in this space make most of their money from alcohol sales and WillCall's goal is to simplify ordering and tab management at such locations. Its technology allows an iPad operated by the venue to ping an app on the customer's smartphone over Bluetooth Low Energy. The customer then confirms the prompt to open a tab, which they can then pay from their phone. The company was founded in 2010, and is so far supported by venues in Los Angeles, New York and San Francisco. WillCall raised \$2.1M in funding before being acquired by *Ticketfly* in August 2014. Ticketfly, in return, was acquired by *Pandora Media* in 2015 [14].

Next Glass is a drink recommendations app that maintains a taste profile for their users and matches drinks from a database against this profile. Customers can use their smartphone's camera to scan the label of drinks and the app will tell them whether they will love or hate the drink. The app focuses on beers and wines and can tell users when a brewery, winery or bar adds a new drink that might appeal to them. Next Glass launched in November 2014.

5.1 One Major Player: TabbedOut

TabbedOut is our largest identified player in the area of apps for tab management. Its mobile app allows customers to manage and pay their bar tab using their phone. TabbedOut also offers a tool (*Periscope*) to bars that allows them to analyze customer preferences and create custom offers to send to their customers. The company was founded in 2009 in Aus-

tin, TX, making it one of the earliest entrants in the market. They have raised \$41M in funding so far, following a \$23.5M Series C [15].

In terms of customer relationships, TabbedOut was one of the first to realize the importance of concentration for customer acquisition. They had their first major release at the 2010 South-by-Southwest (SXSW) festival in Austin, making it available at 35 locations [16]. What followed was rapid growth, resulting in 200 supported restaurants and bars in 90 cities at the time of their Series A (in May 2011). In 2012, TabbedOut entered into a partnership with T.G.I. Friday's, which brought in an additional 800 locations, resulting in 1,100 supported restaurants and bars by April 2013. This number was brought to over 10,000 a month later through strategic partnerships with POS system providers [17].

The key partners of TabbedOut are POS system providers including *Aloha*, *Digital Dining*, *Dinerware*, *Focus POS*, *Future*, *Harbortouch*, *Jumpware* and *Micros* [16]. By partnering with these companies, TabbedOut has been able to directly integrate into the POS systems used by venues, making them available at a large number of locations without any explicit work for acquisition or setup. At the same time, integration into the POS reduces friction for the restaurant or bar. TabbedOut has also pushed for partnering with venues by integrating its features into the venues' own apps, first by partnering with T.G.I. Friday's and then by releasing a software development kit to enable venues to do this integration themselves.

TabbedOut's main revenue stream appears to come from charging bars a monthly fee of \$99 (waived if not enough sales are generated through the app). They also charge commission for offers generated using Periscope [18].

5.2 Who will win and lose, and why?

The development of the existing companies suggests that drink ordering and payment are the most promising business areas for bar-related applications, matching our findings from Section 3. This is confirmed by the following factors: (1) The majority of the companies work in the area; (2) The majority of the surviving companies are in the area; (3) Tens of millions US dollars have been invested in the area; (4) Thousands of bars in the U.S. have been involved; and (5) Partnerships with existing POS companies have been formed.

For drink ordering and payment apps, it is too early to identify the winners and losers. After six years of product launching, the market is still emerging with a penetration rate we estimate to be about 2%. It remains unclear whether the companies are profitable, but the only market dominator in the U.S. – TabbedOut – seems to be gaining traction. No major acquisition has occurred yet, although an increasing number of partnerships with the established POS business may enable this in the near future.

TabbedOut's traction may be explained by the fact that they have been most successful in targeting the challenges we identified in Section 4.

First, they used a major event and a local set of bars for their initial acquisition of users. The 2010 SXSW festival saw a high number of sign-ups due to the pain of ordering and waiting for drinks at a large event (the same problem targeted by WillCall Venue above). Furthermore, because the pilot bars were concentrated in the same area, it was possible for TabbedOut to roll out their product at all of them at the same time, which increased the incentive for users to sign up. By doing this, they solved the initial customer adoption problem (Section 4.1) and gained enough traction to build upon, at least within Austin.

Second, TabbedOut partnered with existing POS companies. Because TabbedOut started earlier than many of their competitors, they had a head-start integrating and partnering with POS system providers. They started doing so in 2012, when other companies were just launching their apps without POS support. This move significantly reduced the barrier of adoption for bars by not changing the behavior or workflow of bartenders and managers (overcoming the problem we identified in Section 4.2).

As such, TabbedOut is strongly positioned to succeed in this market, but it is not a given. While they are ahead of all other players in terms of traction, funding and partnerships, it still has to be seen how successful their business model is going to be for sustained growth and how well customer adoption will be once they push more aggressively outside the Austin area. Another question is whether a viable competitor will emerge, and whether there will be competition from POS systems manufacturers themselves (such as *Square* or *Ziosk*).

5.3 New Opportunities

Opportunities exist in both drink ordering and payment (i.e., tab management) as well as drink recommendation. For tab management, opportunities exist in new business models – while TabbedOut appears to have solved much of the friction of adoption for bars and customers, the question remains whether bars are willing to pay for it (Section 4.3). There may be an opportunity to compete with TabbedOut by making the app free for bars and opening up other sources of revenue. This way, the adoption barrier almost completely disappears.

New sources of revenue could include drink producers, distributors, and even commercial data aggregators. The value proposition for drink producers and distributors would be highly targeted advertising, particularly if the app combines tab management with drink recommendations and therefore provides ample opportunities to influence its users' drink choices. For data aggregators, the value proposition would be access to highly detailed data of users, including where they drink, what they drink, with whom they drink it and other metrics that can help understand users' drink choices.

6 Conclusion

Our findings lead us to the conclusion that there is going to be a large amount of activity in mobile apps shaping the interactions between bars and their customers. We see drink ordering and tab management as the first areas of this change, followed by drink recommendations, likely combined with social features.

We believe that this shift leads to tremendous opportunities due to the availability of several revenue streams that directly tap into large markets (a \$3.5B drink advertising market and a \$23B alcohol sales market). At the same time, making use of these opportunities requires solving several hard problems, including how to build up a critical user base, how to sign up bars and finding a good business model.

The pay-off for solving these problems better than the existing players could be significant: since the nature of the market makes it likely that only one or two major players will remain in the end, and since there is no dominant company at this point, today represents the perfect opportunity to tackle this market.

7 Bibliography

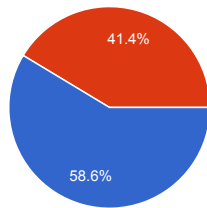
- [1] "Statista: Facts on the bars & nightclub industry in the U.S.," [Online]. Available: <http://www.statista.com/topics/1752/bars-and-nightclubs/>. [Accessed 5 May 2016].
- [2] "Self-Regulation in the Alcohol Industry," Federal Trade Commission, 2014.
- [3] "Nightlife Association (NCIAA): Our Industry," [Online]. Available: http://www.nciaa.com/content.aspx?page_id=22&club_id=160641&module_id=29898. [Accessed 5 May 2016].
- [4] "IBISWorld," [Online]. Available: <http://www.ibisworld.com/>.
- [5] "NBWA: Who Are America's Beer Distributors?," [Online]. Available: <https://www.nbwa.org/about/what-beer-distributor>. [Accessed 5 May 2016].
- [6] "Park Street: US Alcoholic Beverage Market (Overview)," [Online]. Available: <http://www.parkstreet.com/alcoholic-beverage-market-overview/>. [Accessed 5 May 2016].
- [7] "DigitalPour," [Online]. Available: <http://digitalpour.com/>.
- [8] "FlowTab," [Online]. Available: <http://flowtab.com/>. [Accessed 5 May 2016].
- [9] "National Restaurant Association: 2015 Restaurant Industry Forecast," 5 May 2016. [Online]. Available: <https://www.restaurant.org/Downloads/PDFs/News-Research/research/ForecastExecSummary2015-FINAL.pdf>.
- [10] Ping, "TechCrunch: Tell You A Secret – Even With Facebook Integration, Ping Will Still Be A Disaster," [Online]. Available: <http://techcrunch.com/2010/09/30/itunes-ping-is-a-disaster/>. [Accessed 5 May 2016].
- [11] "TechCrunch: Coaster Launches A Self-Serve iPad App For Bars To Accept Mobile Payments For Free," [Online]. Available: <http://techcrunch.com/2013/01/24/coaster-ipad-app-for-bars/>. [Accessed 5 May 2016].
- [12] F. H. M. I. a. U. Worth?, 5 May 2016. [Online]. Available: <http://www.forbes.com/sites/tristanlouis/2013/08/31/how-much-is-a-user-worth/#7593206e92a9>.
- [13] "CrunchBase: Bareye," [Online]. Available: <https://www.crunchbase.com/organization/bareye>. [Accessed 5 May 2016].
- [14] "CrunchBase: WillCall," [Online]. Available: <https://www.crunchbase.com/organization/willcall#/entity>. [Accessed 5 May 2016].
- [15] "PR Newswire: TabbedOut Grows Series C to \$23.5M," [Online]. Available: <http://www.prnewswire.com/news-releases/tabbedout-grows-series-c-to-235m-300191396.html>. [Accessed 5 May 2016].
- [16] "Wikipedia: TabbedOut," [Online]. Available: <https://en.wikipedia.org/wiki/Tabbedout> [Accessed 5 May 2016].
- [17] "TechCrunch: TabbedOut Scores Deal With Point-Of-Sale Maker, Will Allow Customers To Pay Their Restaurant Or Bar Tab Via Their Phone At 10,000 Locations," [Online]. Available: <http://techcrunch.com/2013/05/01/tabbedout-scores-deal-with-point-of-sale-maker-letting-customers-pay-their-restaurant-or-bar-tab-via-their-phone-at-10000-locations/> [Accessed 5 May 2016].

- [18] "TabbedOut: Merchant Enrollment Form," [Online]. Available: <http://www.tabbedout.com/merchant-enroll/>. [Accessed 5 May 2016].
- [19] "Statista: Facts on the U.S. restaurant industry," [Online]. Available: <http://www.statista.com/topics/1135/us-restaurants/>. [Accessed 5 May 2016].
- [20] "Mobile Payments Today: Tabbedout adds another POS partner," [Online]. Available: <http://www.mobilepaymentstoday.com/news/tabbedout-adds-another-pos-partner/>. [Accessed 5 May 2016].

Appendix A: Customer Survey Results

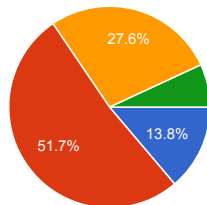
This section contains the raw data from our survey. We removed the open form questions, which were “Your age”, “Where do you live?” and “What could your favorite bar do to make you like it even more?”. The findings of those questions are summarized in the main report.

Gender



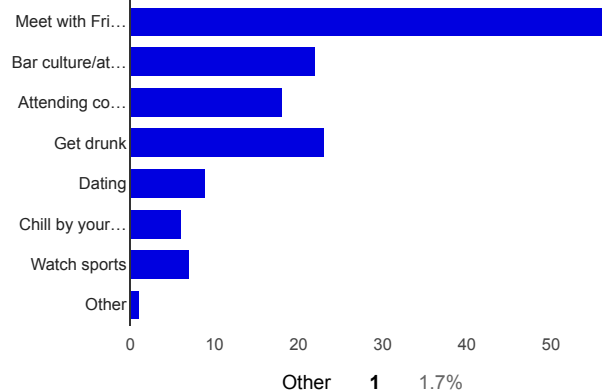
Male	34	58.6%
Female	24	41.4%
Other/Decline to state	0	0%

How often do you go to bars?

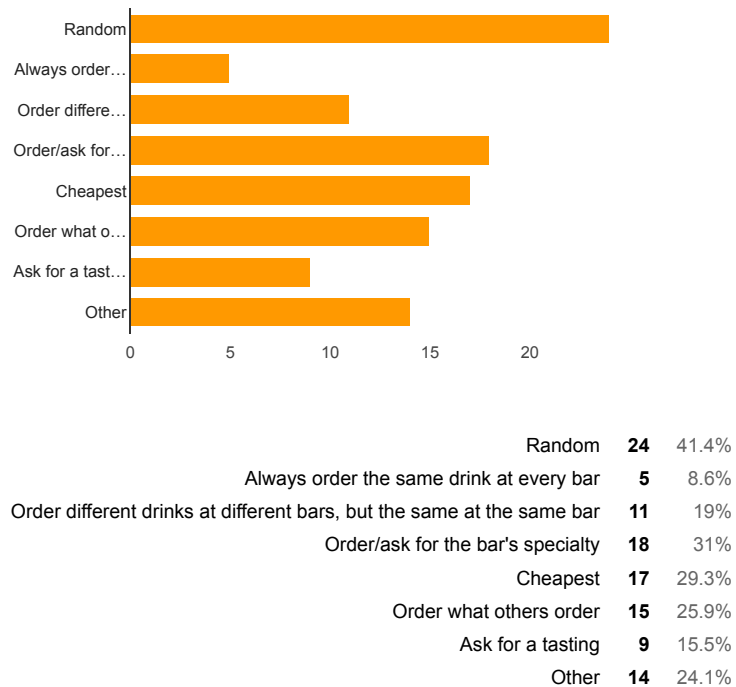


less than once a month	8	13.8%
1-5 times a month	30	51.7%
5-10 times a month	16	27.6%
more than 10 times a month	4	6.9%

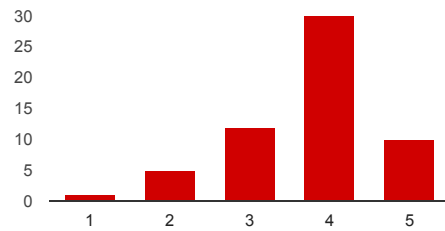
What do you commonly go to a bar for?



How do you make your decision what drink to order?

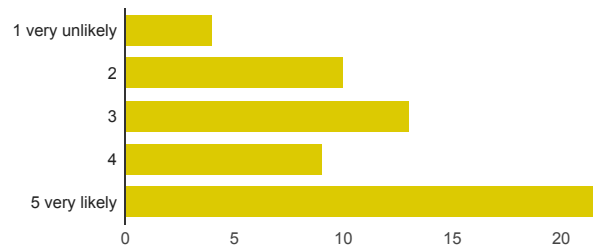


How important is the quality of the drinks to you?



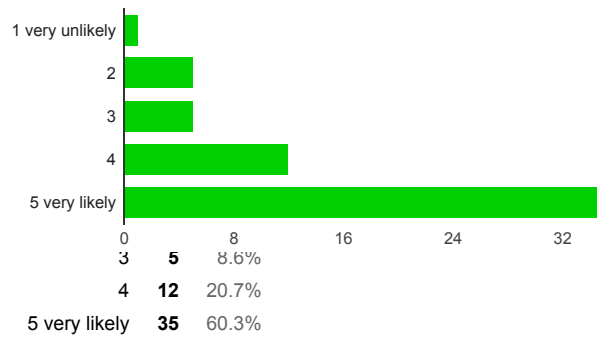
not important: 1	1	1.7%
2	5	8.6%
3	12	20.7%
4	30	51.7%
very important: 5	10	17.2%

Ordering Drinks (being shown a waiting time estimate) [How likely would you use any of the following features?]

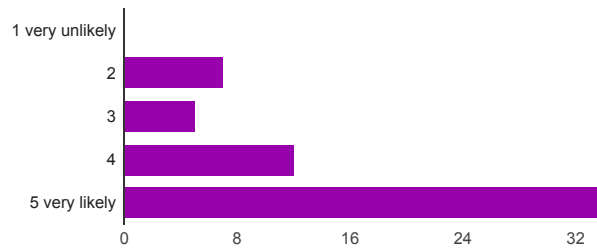


1 very unlikely	4	6.9%
2	10	17.2%
3	13	22.4%
4	9	15.5%
5 very likely	22	37.9%

Managing/paying your bar tab [How likely would you use any of the following features?]

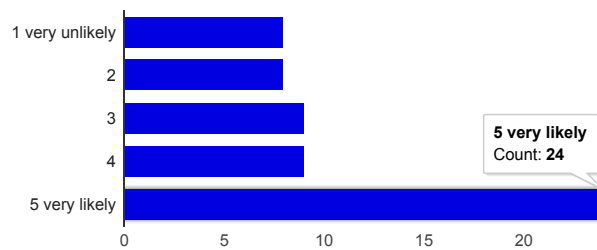


Automatically splitting the bill among members of a group [How likely would you use any of the following features?]



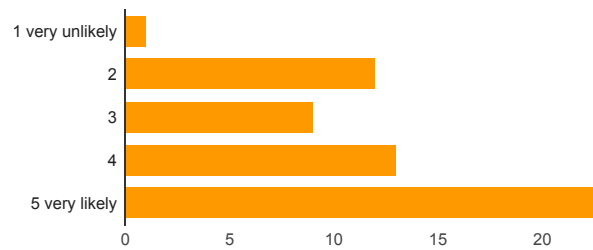
1 very unlikely	0	0%
2	7	12.1%
3	5	8.6%
4	12	20.7%
5 very likely	34	58.6%

Using your phone for age verification at the door [How likely would you use any of the following features?]



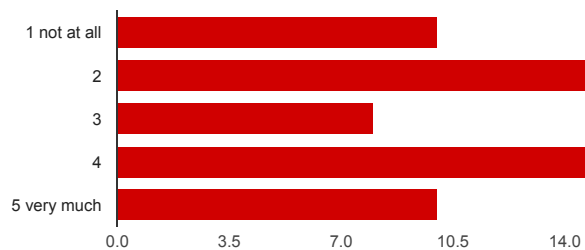
1 very unlikely	8	13.8%
2	8	13.8%
3	9	15.5%
4	9	15.5%
5 very likely	24	41.4%

Drink recommendations specific to the bar, based on your preferences and reviews [How likely would you use any of the following features?]



1 very unlikely	1	1.7%
2	12	20.7%
3	9	15.5%
4	13	22.4%
5 very likely	23	39.7%

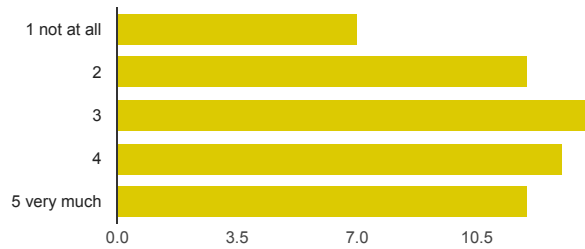
Ordering Drinks (being shown a waiting time estimate) [How much would the availability of these features make you choose one bar over another?]



1 not at all	10	17.2%
2	15	25.9%
3	8	13.8%

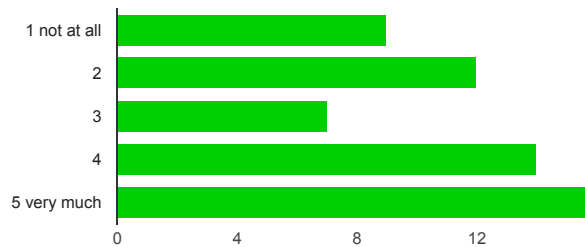
4 15 25.9%
5 very much 10 17.2%

Managing/paying your bar tab [How much would the availability of these features make you choose one bar over another?]



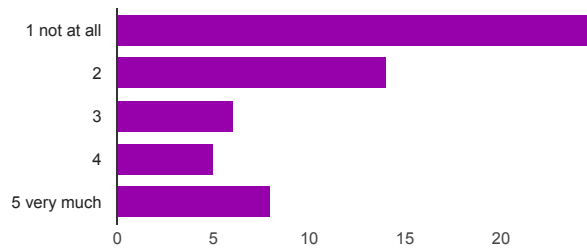
1 not at all 7 12.1%
2 12 20.7%
3 14 24.1%
4 13 22.4%
5 very much 12 20.7%

Automatically splitting the bill among members of a group [How much would the availability of these features make you choose one bar over another?]



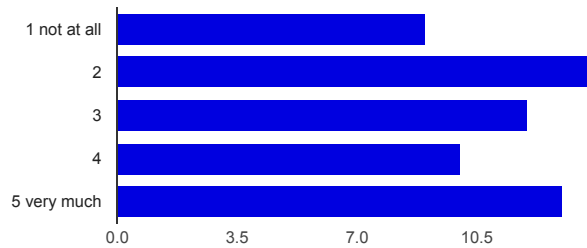
1 not at all 9 15.5%
2 12 20.7%
3 7 12.1%
4 14 24.1%
5 very much 16 27.6%

Using your phone for age verification at the door [How much would the availability of these features make you choose one bar over another?]



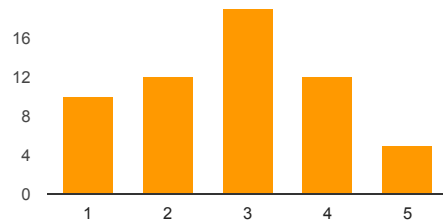
1 not at all	25	43.1%
2	14	24.1%
3	6	10.3%
4	5	8.6%
5 very much	8	13.8%

Drink recommendations specific to the bar, based on your preferences and reviews [How much would the availability of these features make you choose one bar over another?]



1 not at all	9	15.5%
2	14	24.1%
3	12	20.7%
4	10	17.2%
5 very much	13	22.4%

Imagine a bar where all interaction with the bar is through a smartphone app. Would you prefer it over a traditional bar if everything else was the same?



I strongly prefer the traditional bar: 1 **10** 17.2%

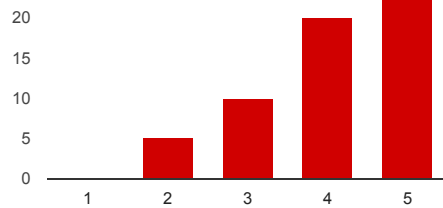
2 **12** 20.7%

3 **19** 32.8%

4 **12** 20.7%

I strongly prefer the phone bar: 5 **5** 8.6%

Imagine a bar that supports tab management and payment through a smartphone app but is otherwise the same. Would you prefer it over a traditional bar?



I strongly prefer the traditional bar: 1 **0** 0%

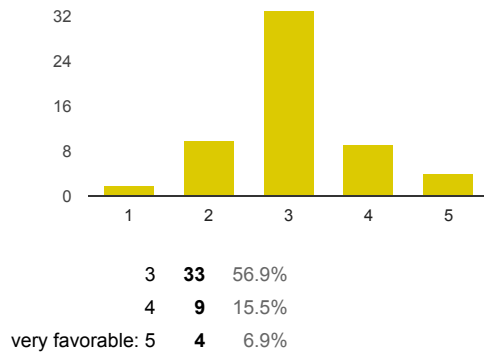
2 **5** 8.6%

3 **10** 17.2%

4 **20** 34.5%

I strongly prefer the phone bar: 5 **23** 39.7%

How favorable would you view others who frequent a bar where interaction with the bar is mainly through a smartphone app?



How would you feel if your favorite bar introduced a system where you can interact with the bar through a smartphone app?

