Design

Bots for Business

Value proposition

A catalog of Messenger bot templates for small businesses that makes creating a bot as easy as filling out a form. These bots learn from interactions between the business and its clients, and over time, provides replies beyond the original FAQ.

Why now?

Small businesses account for 99.7% of all businesses in the US and 29% of them don't have a website. The top two reasons they provide are 1) they use a social media business profile instead, and 2) lack of technical skills.[1] Customer interactions are increasingly moving from phone/web/email to platforms capable of intelligent real-time interactions like messaging bots, leaving small businesses vulnerable to the new technology shift. Given its existing relationships with small businesses, Facebook is in the perfect position to provide a non-technical service that builds on top of businesses' existing Facebook pages.

The messaging space is hypercompetitive- while there's no social media site as big as Facebook, there are plenty of messaging apps competing with Facebook Messenger. To stay competitive, Facebook Messenger needs to leverage the 2 billion users on Facebook's social network to provide more value than competitors like WeChat, Line, iMessage, and Android Messenger.

Bots are the biggest new development in Messenger, allowing for new forms of interaction, yet have for the most part failed to provide greater use than as novelty. Part of this is because unlike with apps, developers can't charge for bots and thus have little incentive to spend months working on creating quality bots. In contrast, enterprises seeking to increase business by improving their engagement with customers have much to gain- smart replies to their customers' most common questions can free employees to spend more time engaging with customers in person.

Enterprises are willing to pay for such value, as proven by the number of bot development companies that have sprung up in the past two years (ex: zendesk's Answer Bot, Sanuker's HR chatbot, Pandorabots). However, only large enterprises can afford to hire custom bot developers and ready-to-use bots usually can't meet business needs. This creates an opportunity for Facebook Messenger to target a new segment of business users. Given that 97% of Facebook's revenue comes from ads,[2] diversifying sources of income would both help protect cash flow in times of weakness and provide greater opportunities for growth and expansion.

Market Sizing

- **50 million** small businesses using Facebook to connect with customers
- **4 million** small businesses pay for social media advertising

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[1] https://smallbusiness.com/digital-marketing/how-many-small-businesses-have-websites/
[2] Facebook Annual Report 2016

- Assuming Bots for Business can achieve market penetration of **30%** of the small businesses currently paying for advertising and **10%** of other small businesses, Bots for Business can serve **5.8 million small businesses**

Pricing strategies

Monthly fee:
- Chatbot monthly fees typically range from $0-$199 per user per month (e.g. Clara- $199/user/month, X.ai- $9/user/month)

Message-based monthly fee
- Messages generated through the chatbot typically cost between $0-$100 per month (e.g. Chatfuel- free up to 100,000 messages, Motion.ai- $15/month for up to 5,000 messages and $100/month for up to 50,000 messages)

Value-based pricing
- 20% improvement in efficiency (reduction in labor needed for answering common questions) in a five-person customer service department means a cost reduction of one person's salary plus benefits
- Assuming $60,000/year, this saves $5,000/month. Additionally, real-time customer interactions may lead to increased customer loyalty and sales.

Example calculation: message-based monthly fee

The advantage of a message volume-based monthly fee model is that it is value-based and thus can generate a win-win outcome:

With:
- a price $5/month/user for up to 100 messages (higher prices for more messages)
- assuming the average bot has 50 users/month
- 5.8 M small businesses as previously calculated
- Bots for Business will generate a revenue of **$1.45 B/year** (5*50*5,800,000 = $1.45 B)

Launch strategy

Metrics

1 Churn
   a Low churn is essential, as it is a proxy for the long-term attractiveness of the service.
2 Number of acquired users
   a The (number of acquired users) / (number of users exposed to Bots for Business) needs to be above a certain threshold, as it indicates the size of the market. If it is too low, then Bots for Business is attractive to a too small of a subset of small businesses.
3 Economics / Profitability of Bots for Business

a   Essential for the long-term viability of Bots for Business. In this stage, profitability is not as important as the two above metrics, as the pricing can be gradually adjusted to a sustainable equilibrium.
4   Usage patterns
a   # bots created
b   # customers messaging each bot
c   # messages each customer sends

Stage 0- Testing

Invite small businesses who 1) have a Facebook page, and 2) have already invested in advertising, to beta test a template. Business who have already invested in their growth on Facebook would be most likely to invest. Sign up a few hundred beta testers.

Stage 0- Goals

- Low churn
  - below 20% annualized
- High penetration
  - above 20%
- Profitability
  - not the highest priority, but data on volume of messages and number of users can help inform pricing structure

Once Bots for Business has achieved these goals, which indicate indicating Product Market Fit, we can move on to stage 1.

Stage 1- Scaling

Release Bots for Business templates to all US small businesses with a Facebook page.

Stage 1- Goals

- Use data to improve Bots for Business smart replies
- Gradually calibrate pricing to maximize revenue
- Streamline business operations to achieve profitability

Once Facebook has successfully operated Bots for Business in the United States, we can move on to Stage 2.

Stage 2- Mass Scaling

Expand to international small businesses with a Facebook page, designing for different languages and different sets of most popular questions.

Stage 2- Goals

- Track the relationship between individual metrics and location types, e.g.
  - Population density → profitability
  - Facebook penetration → number of users acquired
  - Different types of bots → usage patterns
  - Countries → usage patterns
- Tracking these relationships helps us understand customer priorities and viability of Bots for Business across location types.

Miscellaneous Thoughts

While the target market of my proposal is small businesses, other types of bot templates (ex: games, quizzes, news) would also help increase the number of Messenger bots available by simplifying the development process.

Conclusion

Bot templates have the potential to bring everyone from mom and pop shops to family-owned restaurants into the technological era.

"*The Fourth Industrial Revolution is looming and now is the time to prepare for an automated future…*"

Appendix

Ideas

"Our mission is to give people the power to share and make the world more open and connected."

Facebook- Friends
Find friends with the right skillset
- *Problem:* Finding out who's free and would be interested in doing some activity together is a pain. That's why apps that connect people over an activity, like Down to Lunch, have taken off. However, Down to Lunch is limited to casual hangouts; with its knowledge of both users' interests and locations, Facebook is positioned to do what DTL does better and so much more. What if you wanted to find people in the area with certain skillsets to team up with for a hackathon? What if you were looking for a startup cofounder who's a cyclist?
- *Opportunity:* A feature where people can search for friends to do stuff with, whether that's a group of friends within a 10-mile radius who might be interested in playing pickup basketball tomorrow, or a friend who can help you critique the design of a website. Beyond

simply returning a ranked list of recommendations, this feature could go one step further with a flow that actually brings people together; it can create a group chat, include a flow for making plans to meet up, and have a live GPS map of everyone's locations the day of.

Connect people who should be friends
- *Problem:* Whether you're new to town or are already settled, making new friends can be a challenge. College, while so full of people and opportunities, is also full of missed opportunities; it's difficult to befriend those outside your immediate circles. Some consider loneliness after the age of 30 to be the next big public health issue, and even those who already have good friends might wonder if there's a potential best friend they've never met just down the street.
- *Opportunity:* A feature that helps friends of friends (or perhaps even friends of friends of friends) meet up at events, over meals, or through activities. Facebook can take advantage of location data and knowledge of users' interests to connect people who they think might get along well.
  - Facebook has far more users and data than Tinder does- what if Facebook started making dating recommendations? People already put their relationship statuses on Facebook, so there's plenty of data that could be analyzed to determine what makes a good match. Perhaps it's sharing interests, growing up in similar socioeconomic backgrounds (independent of geography), or even making similar types of posts.

Add friends via QR code or location
- *Problem:* When I meet someone who I want to add as a Facebook friend, I need to ask them to spell their name, wait for search to return a list of people, then scroll through that list together until we find the one with the right profile thumbnail. The process is unnecessarily long and prone to error.
- *Opportunity:* Add friends by scanning a QR code- it's instant and accurate.
  - More ideas related to adding friends: can have a location-based feature where a friend's location/activity is taken into consideration, for instance, lots of friends are added at conferences.

Group friends after they're added
- *Problem:* One of the reasons people share less as they add more friends on Facebook is that fewer posts are appropriate or relevant to everyone in a larger and more diverse audience. In high school, my friends and I used to post spontaneous life updates, but now that we're Facebook friends with our professors and managers, our posts have become more general and professional.
- *Opportunity:* Provide the option to curate circles of friends- immediately after a user adds someone new on Facebook, ask them to select which circle(s) the new friend belongs to. When a user posts something new, they'll be able to select with which circles to share the post with.

Facebook- Search
More granular graph search
- *Problem:* If a user wants to go back and reference a post a friend made a while ago, they have to go to their friend's wall and scroll until they see it. What if the user remembers part of the post, but doesn't remember who posted it? What if the post was from years ago?

- *Opportunity:* Increase the granularity of graph search so that users can just type a couple words into a search bar and have matching posts appear (kind of like googling for a quote from a movie).

Food Finder
- *Problem:* When people connect in real life, they tend to do so over food. Finding a suitable place to eat can be an arduous task.
- *Opportunity:* Allow a user to search, "where have my friends gotten lunch in NYC," or even "where should I get lunch with [insert friend's name here] near FiDi." Facebook's recommendations can provide more value to users than Yelp's or TripAdvisor's by leveraging social data in its results; after all, people are already used to taking pictures of food and posting them on Facebook (and Instagram), and friends' recommendations are more trusted than strangers'.

Facebook- Video
Automatically create videos from albums
- *Problem:* Most people are video consumers, not producers, because they don't have the time, tools, or ability to create quality videos.
- *Opportunity:* Automatically create album videos using the images and clips in users' albums and offer them the ability to share them. Videos like "My trip to Macchu Picchu" or "Freshman year at Yale" would appeal to not just those in the album, but also friends and family who know the people in the album. Google Photos is one of the most lauded photo apps because of its intelligent image and video editing abilities.
  - o Note: the "You met two years ago" videos are appreciated by the two friends the videos commemorate, but aren't interesting to anyone else. In contrast, users share albums with all their friends because they deem the content to appeal to a broader range of people. Similarly, I personally love seeing my "Year in Review," but I have no desire to spam all of my friends' feeds (and have no desire to have my feed spammed) with content nobody else cares about.

Messenger
Allow bots to join conversations
- *Problem:* Messenger bots are currently limited to being simply another interface for issuing commands; there's limited opportunity for back and forth. Chat extensions can be pulled into conversations, but they're limited to being in the composer drawer. Meanwhile, HipChat has bots that can notify users when a branch has been pushed to GitHub, and Slack has bots that can listen in on a thread and pull out useful information.
- *Solution:* Provide the option to add bots to conversations- they can then be programmed for new purposes such as taking notes, summarize conversations, and inserting relevant content.

Provide a catalog of bot templates for small businesses
- *Problem:* Lots of small businesses who could benefit from creating bots for their business don't know how to make bots, yet for many businesses, their use cases are quite similar.
- *Opportunity:* Offer a catalog of bot fill-in-the-blank templates for the most common use cases (ex: ordering food from a restaurant, check if a store's open, etc.), so that a local restaurant can create a new bot for their Facebook page without needing to write a line of code.

Oculus (Still debating whether I should include this section, as it was an acquisition, not core FB)
Add peripheral vision to the Oculus Rift
- Problem: VR isn't currently very realistic or immersive
- Solution: Peripheral vision

Develop an augmented reality headset and platform
- Problem: VR has limited use cases, AR can be useful for mass markets
- Solution: AR platform

Opportunity Assessment of Top Ideas

Product Area: Facebook

- Facebook's mission is to bring people together, but virtual interactions are generally less meaningful than offline interactions
- Facebook has the largest repository of social data in the world; Facebook can utilize this data to provide more effective friend matchings than anyone else
- Facilitating the process of bringing people together opens opportunities for new revenue streams

Idea: Find friends with the right skillset
- Given a skill-based search query, return a ranked list of recommendations of friends with that skill (ex: interested in pickup basketball)
- Catalyze the interaction- create a group chat, include a flow for making plans to meet up, and have a live GPS map of everyone's locations the day of

Target Market
- College students
- People in a foreign country
- Adults who have settled into a routine and seek variety

Market Size
- 200 million college students in the world
- 250 million migrants, 57 million expats globally
- Connecting with others is a universal desire

Advantages
- Increased user satisfaction with Facebook due to the service's increased utility
- Increased user engagement via meetup planning interface
- Useful as a defensive ploy against Tinder, DTL, etc.

Risks
- While a candidate may have the right skillset, he/she may not have the availability- to them, the requests may be considered spam
- Inaccurate suggestions = waste of time for both the seeker and the suggested candidate

Competitive landscape
- Tinder, DTL

Why now?
- Explosion of dating apps, online social networks like FB and LinkedIn, group messaging apps, have made finding people and putting together plans online the norm
- These online interactions often come at the price of deeper connection- recent years have seen "loneliness" listed as higher health risk than smoking or obesity
- *Problem:* Finding out who's free and would be interested in doing some activity together is a pain. That's why apps that connect people over an activity, like Down to Lunch, have taken off. However, Down to Lunch is limited to casual hangouts; with its knowledge of both users' interests and locations, Facebook is positioned to do what DTL does better and so much more.

Product Area: Messenger

- One advantage Messenger has over other messaging services is that FB has a range of users that includes businesses
- Messenger bots haven't reached their full potential and can't serve as a standalone revenue source
- Messenger bots would be most useful as support for businesses seeking to improve engagement w/customers
- Useful as a way for FB to diversify its revenue streams

Idea: provide a catalog of bot templates for small businesses
- Allow small businesses to create a customer service bot for their FB page without writing a line of code (think what Weebly, Joomla, and Wordpress did for websites)
- Automate away answering the most common questions (ex: are there vegetarian options, is your bookstore open tomorrow, etc.)

Target Market
- Small businesses that sell goods or services to customers, who likely already have a social media presence, but are too small to have a technology team.

  Ex: restaurants, ice cream shops, movie theaters, flower shops, local toy stores, laundromats

Market Size
- Number of small businesses in US without a website: 29%
- 50 million small businesses with FB pages around the world

Advantages
- Small business reduces time spent answering repetitive questions -> more time spent developing in-person customer relationships
- Customers reduce time spent searching the business' info, calling the phone number, and being put on hold (or even being told to call back again during business hours) -> better relationship with business
- Facebook has a new revenue stream that's not from ads

Risks

- Reduces opportunities for developers to sell bots as a service to small businesses
- Customers may ask questions that the bot hasn't been programmed to answer, reducing the bot's usefulness
- A phone call is an opportunity to build a relationship, a bot is less personal

Competitive landscape

- Software companies make bots as a service

Why now?

- Bots are hot right now
- Automate away tedious tasks
- The ideal target market for a new product would be businesses seeking to better engage with the customers
- *Problem:* Lots of small businesses who could benefit from creating bots for their business don't know how to make bots, yet for many businesses, their use cases are quite similar