

MYOB IT CHALLENGE

MCCHICKEN NUGGETS

Nugget

Insightful Customer Analytics App

Team members:

Mika SIDDIQUI
Giovanni MAYER
Renzo VENTURA
Jordan PHAM

May 18, 2017

1 Executive Summary

MCChicken Nuggets has a vision, to let small businesses have access to the powerful tool that is Analytics. Not every business has the resources to have analytics on their side, that is why MCChicken Nuggets has developed Nugget. Nugget is a simple analytics application designed for smaller and less tech-savvy business owners. Business owners are experts in their own business, they may not have the marketing or advertising expertise needed to improve their business. Nugget can be used as a tool to implement analytics in their business strategy. It allows business owners to use it to support their long term managerial decisions, use as a guide for day to day decisions, and keep track of their progress, ensuring they go down the right path.

Nugget will undoubtedly show the right way for business owners to find opportunities to grow their market and connect with current and potential clients.

2 Business Case

2.1 Industry Analysis

By conducting analysis on the accounting software solutions industry we see that there is strong industry rivalry. There are many other players in the market offering similar products and services, this makes it difficult to differentiate your offering to attract customers. Making it significantly more challenging for MYOB to fight to maintain and increase their market share against all these other companies that share the same goal.

With the large expenditure on brand reputation and research and development in this sector the barriers to entry are high and so it would be very difficult for small companies with little experience in the sector to enter this market. There are few substitutes to using accounting software in a business, being limited to doing accounting via spreadsheets or manual records which is a more time consuming and costly method, so the threat of substitutes would be low.

Taking everything into account we can identify the accounting software solutions industry as one with good opportunities for growth. However, for a businesses facing such fierce competition it would require ongoing innovation to remain relevant in this industry. Developing ways to differentiate their product range is the key maintaining market dominance.

2.2 Market and Business Analysis

The market that MYOB operates in can be broken down into 3 segments; small to medium enterprises (SMEs), accounting practices, and large enterprises.

Attempting to hold a dominant position in all three segments would be incredibly difficult due to the different needs in functionality of solutions from each one, therefore to develop a successful solution it is essential to focus on the needs of one segment.

Since customer loyalty is a key factor of success, especially in such a competitive market, the best segment of the market to target would be the small to medium enterprises. This is due to the small companies of today being the large companies of tomorrow, so building a relationship with companies when they are still small and then developing this relationship as they grow gives MYOB a greater chance of maintaining customers. They will have an established preference for MYOB when it comes time to considering larger scale accounting software.

Furthermore, the SME segment made up 63% of MYOBs revenue in 2016 and so remaining relevant in this segment is vital to their success. The main other business providing to this segment is Xero who came onto the scene in 2006 and have proven to

be a fierce competitor so there is great pressure on MYOB to innovate in this area. This has indicated to us the need to focus on this group and why we developed a solution that makes business life easier for small to medium enterprises.

Small and medium enterprises account for two and a half million of New Zealand and Australian companies, they are typically characterised by their far fewer number of employees (0-19) relative to enterprises. With so few employees it creates the issue that the owner or managers must perform multiple roles in the business in which they may not have a strong background in, creating a major juggling act to perform all these overwhelming responsibilities simultaneously.

2.3 Current Strategy

With MYOBs current strategy to build a market leading platform which will deliver seamless connectivity between the SME, advisors and the broader accounting ecosystem, we want to make a solution that This has been broken down into 5 main pillars of growth; connected practice, MYOB platform, clients, brand and experience, and bigger businesses.

Given this information we wanted to develop a solution that assisted in achieving this current strategy, in particular the pillars relating to delivering an online platform that is differentiated and a competitive product offering as well as the goal to attract new clients and retain existing clients.

3 Proposed Strategy

3.1 Business Justification

Small to medium enterprises often have a low IT budget and so they want software that is less sophisticated and simply supports them in achieving their objectives and business strategy. Also, these SME business owners often have no background in the advertising and marketing side of their business and so software that is easy to use with low costs is incredibly beneficial. With 92% of MYOBs new customers opting for cloud solutions it is clear that a solution would be most successful if it were cloud enabled as well.

By taking this all into consideration we developed Nugget, an analyser that uses a companys reviews to determine which areas of the business customers find the business is doing well at, as well as those that they could improve on. It also has the ability to further break down these reviews based on age, to help understand how customers within certain age groups feel towards parts of the business.

Due to the smaller size of SMEs they typically have a relatively quick decision making process, therefore implementing changes in the marketing campaign guided by the insights from Nugget will be more effective and thus providing more value. These insights will also mean that the business owners can perform the function of marketing/advertising with significantly more ease and this reduces the burden on them so they can focus on the parts of the business that they are skilled at.

By having the ability to brand and market your business in a way that you know appeals to customers, even down to selecting your target age group, the success and effectiveness of ad campaigns will improve remarkably.

3.2 IT Justification

3.2.1 Data retrieval

With the Nugget app, analytical data becomes a much easier task to track. Using the XML data from a given review source (i.e. Zomato), we are able to analyse the sentiment

of reviews, as well as the profiles associated with the reviews. This will let us build a profile based on age.

The XML data retrieved either using the API of the given review source (Zomato API) or scraped from the website. This is then interpreted using the BeautifulSoup module on Python, which extracts review information to be analysed.

3.2.2 Sentiment Analysis

Once the data has been retrieved, the Natural Language Toolkit on Python is used in order to tokenize (labelled into parts of speech) each word.

The tagged data then becomes ready to be analysed by a sentiment algorithm. There are a number of machine learning algorithms available, each with their benefits and drawbacks. The algorithm most applicable for this use is called the Nave-Bayes algorithm which is a popular baseline method for text-categorisation. This algorithm uses an initial training dataset to determine its classifications.

For this instance, the training dataset was a dataset of 200 aggregated restaurant reviews. Since they are restaurant reviews, it makes the analysis more accurate and relevant for this example, as the nature in which customers write reviews will follow the trend in which the training dataset has labelled the sentiment. This gives a more natural, form-fitting classification and thus the accuracy of the analysis is greatly increased.

Once the algorithm has classified each review, it gives a positive or negative score. These are then categorised into negative dataset and positive dataset. Each dataset then checks for the most frequently mentioned keywords (ignoring stopwords such as it, the, and, etc.) and stores this data for the donut graph to display. Checking for most frequented keywords provides targeted meaningful insight into specific areas, and seeing how people have responded negatively or positively to those areas. This information can be expanded upon, such as seeing the percentage change in certain areas, seeing what age demographic found certain areas of the business good or bad, filtering specific reviews of which only mention a selected keyword.

Another useful feature of the Nave-Bayes algorithm is that it utilises machine learning, which means that over time as the training dataset grows, the sentiment analysis gets more accurate. Since it is using the parlance of the customers of a given SME, over time it becomes more tailored to the given SME and thus more accurate in its analysis.

3.2.3 Mobile App Development

The app is designed to be easy to use, and the analytical customer insight be instant upon open. The mobile app was developed using Swift programming language to be distributed on the Apple App Store. The app will give mobile access to the data, making it responsive and dynamic.

The user database requires MySQL, working with a similar framework to existing MYOB products on the cloud. Since the Nugget app works with existing MYOB products via addons, it will need to integrate seamlessly with customer data already stored in the MYOB databases. The app accesses the online server at which the analytical sentiment data is being stored, and fetches back the dashboard. The dashboard was designed with responsiveness in mind. The data is also accessible through the cloud.

3.2.4 Cloud Server Development

For the cloud server, the design needed to be responsive and dynamic. The main components that provide this are shown in the appendix. The interface of the app is written with HTML, JavaScript and CSS, and is hosted on a server through Apache. This gives cloud access. The benefit of cloud access is that it is accessible anywhere, meaning

that SMEs are able to use this service from any device that has access to the internet. This lowers the financial stress of capital investment as it is a subscription service. The main features of the app are provided by bootstrap.css, and chart.js. Bootstrap provides the responsive screen adjusting, and chart.js provides a dynamic graph which can also provide specific information, such as removing certain keywords to see the comparisons between specifically selected keywords of a donut graph.

3.3 Mockup

The app initially opens to a login screen. If the user is new, it will prompt by asking what industry the SME belongs to so it can scrape information from relevant sources, thus leading to a more accurate analysis. After this operation, the user is then presented to the dashboard.

There are two donut graphs displayed, each showing the most mentioned keywords from customer reviews in a positive and negative manner respectively. The donut graphs provide the ability to filter keywords, to allow the user to look at comparisons between specific keywords or to hide keywords that are not of interest. This can be done by clicking on the keyword legends that are labelled and colour coded above the graph. Hovering over specific sections of the donut graph will display the keyword and the amount of times the keyword has been said. This functionality makes it less cluttered and easier to navigate options as the insight is minimalistic and easy to use.

Below the donut graphs, is the review keywords table which displays the keywords and the percentage change of sentiment over time. In this example, it shows the percentage change in sentiment over the last month. Clicking on a review keyword will present all reviews where that selected keyword had been mentioned.

Future mockup implementation will provide an option located at the top that will allow the user to display data from a given time (last week, last month, last six months, last year, all time). This will display data differently on all features on the dashboard such as the donut graph and review keywords table, thus making the data responsive and dynamic for the user. Demographic and customer profile analytics will also be another implemented feature, which will show the relationship between certain keywords and areas of the business that affect specific customer demographics.

The simplicity of the system provides a user-friendly interface for the user to perform tasks without sophistication. The dynamic donut graphs provide key information, which is easy to interpret for SMEs, especially when they do not have a dedicated IT team.

4 Marketing Strategy

Due to Nugget not being fundamental in the running of a business we believe it will best be placed under MYOBs Add-Ons with the ability to be integrated in AccountRight Live and Essentials since these are the two offerings for SMEs.

Due to the sentiment analysis software being fairly unknown people will most likely be uncertain of its effectiveness in their business, we will therefore need to focus fairly heavily on creating awareness for Nugget. Since creating awareness is so vital to its success, promotion methods would need to be aimed at creating a high uptake of the software at its introduction to the market. Such methods would include an ad campaign and offering the software on a free-trial to MYOB customers so that they can see for themselves the benefits that the software would have for them and their companies, we expect 30 days would be a good length of time to allow companies to see this. This in combination with MYOBs existing channels such as mailing lists, custom webinars, trade shows, and exhibition opportunities will give Nugget a strong chance of success in the market.

The key message behind any efforts to market Nugget would be in line with MYOBs vision of helping businesses succeed. This would be depicted through Nugget's ability to allow managers to spend more time on utilising analysis to develop an effective marketing campaign rather than trying to decide a path to take, therefore improving the traction that the campaign will get.

5 Financial Plan

Nugget will encourage more online subscriptions by increasing the functionality of the platform provided. In 2016 there were 30,000 new SME online subscriptions, driven by 92% of new SMEs opting for cloud based solutions and so we would expect a further growth in the total new online subscriptions. This will drive growth in paying users as they often migrate at a rate, Nugget will increase this rate by making the paid subscriptions more enticing with added functionalities. These will then contribute to the organic recurring revenue growth which creates real value for MYOB.

We would also expect with the improved offerings that the retention rate would increase as a larger proportion of customers would find the platform a worthwhile investment with the added capabilities provided, therefore increasing the lifetime value of customers.

We believe \$9.99 a month is a reasonable price to charge for Nugget and given our efforts to create awareness would expect an approximate uptake of 10% of existing SME paying online subscribers. This would amount to \$2.7 million per year in revenue.

Total cost would be the cost of development including hiring two data scientists and three computer scientists over the period of half a year at an annual salary of \$80,000 totalling \$200,000, as well as maintenance and ongoing costs of about \$60,000. The cost of creating awareness for Nugget would be in excess of \$50,000 as it would include tv commercials and online advertising.

6 Conclusion

Sentiment analysis software designed for businesses is a great market to enter as there is currently very little competition and so a first movers advantage could be gained by entering whilst the market is still young. The machine learning capabilities of Nugget result in greater accuracy over time, thus making it more reliable in analysing data.

The software can be used as a unique selling point to increase current customer growth and retention rates as it is different from most things that competitors offer thus differentiating MYOB.

Nugget

Company Name

Password

LOG IN

Nugget

Company Name

Password

LOG IN

Nugget

Company Name

st heliers

Invalid Account

Please enter a valid account.

OK

St. Heliers

Which Industry would you like to access

FOOD

CLOTHING

FITNESS

OTHER

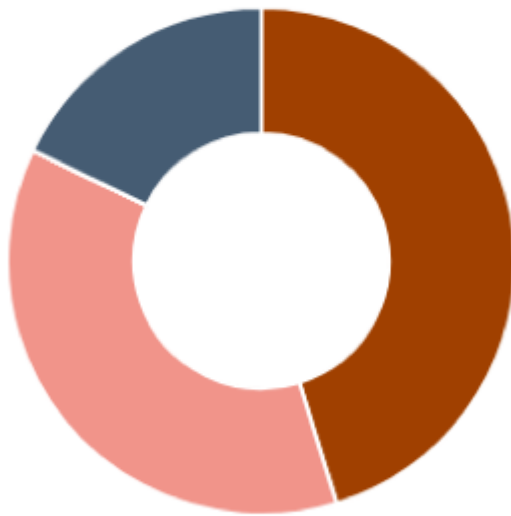
LOG OUT



Dashboard

Negative Sentiment

(Last Month)



Positive Sentiment

(Last Month)

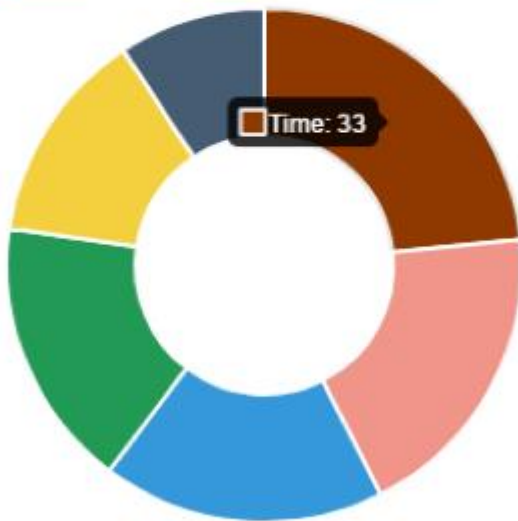




Dashboard

Negative Sentiment

(Last Month)



Positive Sentiment

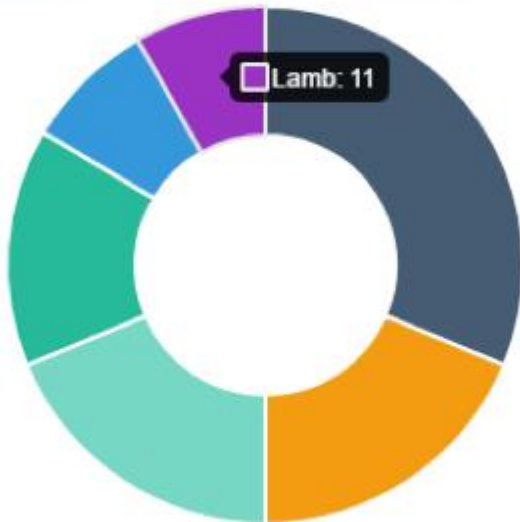
(Last Month)





Positive Sentiment

(Last Month)



Review Keywords - Sentiment Change (Last Month)	
Views	4 %
Location	6 %
Menu	2 %



☐ Review Keywords - Sentiment Change (Last Month)

☐ Views	4 %
☐ Location	6 %
☐ Menu	2 %
☐ Lamb	8 %
☐ Beach	4 %
☐ Time	-7 %
☐ Burger	3 %
☐ Coffee	-3 %
☐ Salad	3 %
☐ Food	-2 %
☐ Wait	-4 %

View All Reviews