

nearU

(A location based shopping application)



MECB PRACTICUM 2013

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Assignment Submission

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Declaration

I the undersigned declare that the project material, which I now submit, is my own work. Any assistance received by way of borrowing from the work of others has been cited and acknowledged within the work. I make this declaration in the knowledge that a breach of the rules pertaining to project submission may carry serious consequences.

I am aware that the project will not be accepted unless this form has been handed in along with the project.

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Executive summary

As the expression goes, technology brings us closer together. At Nearu, we want to bring people and retail together so that we can all benefit. The team want to make the retail experience something more than what that needs to be done but something that people want to do. We looked through all the latest technology that could be used in conjunction with your smartphone, something that could really get shoppers engaged and interested in the experience and we found that in Gimbal, a software platform that can help shape our users shopping patterns through using the technology in their phone best suited our needs. Using this technology, the smartphone will be used as a tool to gain a privacy enhanced peek into user's interests, habits and personality, therefore our application will slowly get to know the user and recommend items thorough push messages that users may have a need for. These recommendations are based on location, previous search history and habits, so when the app user passes through one of the Nearu geo-fences which have been mapped out on Google maps they will receive a message that personalised and relevant.

An in-depth approach to market research has led the team to develop a strategy that based around the spending power of the millennial demographic and their early adopters personalities. They are the group who will most likely to come on our journey that will lead to more bargains for the consumer and increased loyalty to the retailer and merchant. The current economic climate has been very tough on the retail sector and latest statistics from CSO show that retail sales fell by 1.6% in June when compared with May 2013 while economists expect retail sales to fall by 0.8% this year. (RTE 2013) so developing this technology could be of great use to retailer and so will be a viable market for Nearu.

These technologies will help us stand out from the likes of Phlok and Tempster and we will offer better value for retailer/merchant. Through our research we found that over 51% of respondents would definitely a use loyalty program, just fewer than 50% said they would stay loyal to the retailer with 58% of respondents saying they would really

love to get personalised offers sent to their phone. These statistics have been backed up through other research that has been listed across this document that shows that market is ready and waiting for a location-contextual technology that will enhance loyalty.

Our exit strategy will be based on a successful launch in Dublin, and then onto the UK through Belfast and the Manchester. Our biggest market will surely be China when (we plan launch in the first Q of 2016) which at the moment has no similar technology to our own using combining the contextual awareness of our software along with the benefits of a loyalty program. The scope of the Chinese market is massive and our successful launch will come from having a highly skilled Chinese team who will look at the market from their own unique experience.

Overview

The Concept

Nearu is an innovative location-based application that enhances the shopping experience for consumers and increases the exposure of merchants. Using Geo-locations to divide shopping districts consumers only receive information from stores in the area they are occupying. Segregating shopping districts in this manner allows the stores in each location to focus their advertisements on nearby consumers. Using information from the users account profile, store interactions and browsing history the application personalises the advertisement feed for each user. This increases the prospect of consumers finding stores and vouchers that appeal to them while they are out shopping. Consumers have to conduct their own research into stores in their locale and even then it takes time to learn their location and the products/services on offer. Nearu streamlines this process by providing a focal point for consumers to learn about not only the location of stores close by but the products and offers they sell.

Nearu provide a comprehensive advertising platform for merchants to transform the way they interact with consumers. Merchants can set the advertisements users receive in their application feed, the available vouchers and the possible ways users can interact with their store. This promotes flexibility and provides a fully customised system that each store can tailor to promote their offers, products and services. Additionally store owners can request data for their shopping district to monitor the dwell time, number and habits of application users. The availability of user data from the application can be used by stores to improve their service and identify strong and weak aspects of their marketing.

The application features a unique points system that rewards consumers for interacting with stores either by checking in through Facebook, checking in through in-store NFC or sharing the stores advertisements on social media platforms. The result of this is that the consumer is rewarded for simple interactions and the merchant receives free

exposure through social media. The points generated act as a currency for consumers to exchange against digital vouchers offered by the merchant stores. There are additional motivations for collecting points in the form of consumer competition as frequent users and top performers are rewarded for reaching and exceeding point's totals. With Nearu we wanted to create a marketing eco-system that requires consumers and merchants to actively participate for both to prosper. Active consumers disseminate large amounts of store information and receive store discounts and free products for their marketing efforts. On the other side it is necessary for merchant owners to create offers and advertisements that impress consumers and entice them to interact for those rewards. The potential exposure for participating stores through social media is competitive with established marketing platforms.

Unlike typical loyalty programs, users can collect points through any store interaction and then select a voucher from their favourite store in exchange for their collected points. Vouchers are created by the merchants and will differ in point's value depending on the offer. This allows consumers to work towards more expensive vouchers or avail of cheaper vouchers regularly. Integrating the reward scheme across stores introduces flexibility for the user and allows them to interact with the application and store offers without tying them down to specific locations or individual stores.

Why is it a novel idea?

There is space within the market for an innovative shopping program that allows consumers to collect rewards for shopping at all not just one of their favourite stores. Typical loyalty programs take a long time for the consumer to see rewards and are divided between individual stores. High street stores are always advertising through traditional mediums whether it's print, radio or television to attract consumer's in-store. The only problem here is hitting that target market and spending a lot of money to do so. Nearu gives the high street the best possible chance of alerting the right consumer as they are already within close vicinity of the stores locale. This increased exposure coupled with personalised advertising makes the stores message relevant and

appealing. This type of advertising is generally reserved for the online domain and Nearu brings this highly focused medium to the high street.

Motivation behind the idea

There is very little awareness of high street stores when you go shopping and the best offers and products are usually found through word of mouth or an extensive search. Consumers already showroom using their mobile devices to compare prices, check store locations and search for the best offers. As they already have a device in their hand, why not give them a resource to check everything that's relevant for shopping in their vicinity. Consumers tend to visit the same locations are constrained by time or are unaware of many of the shops products on their favourite high street. With Nearu we wanted to give high street stores the chance to reach every consumer that walks along that street to raise awareness about all the great offers, products and services available right there. We also found that although consumers love loyalty programs they must choose and stay with stores they shop in the most to reach those program rewards. So we combined this application with a standardised loyalty program that removes the need to shop continuously in one location to build rewards and instead rewards the consumer for just shopping.

Team Structure

JP Gallagher – CMO + CEO (Chief Marketing Officer/Chief Executive Officer)

Having various qualifications in electronics, media production, management and ecommerce, JP was deemed to be the most experienced of the team members to guide the team across the various tasks within the project.

Having completed extensive courses in SEO, PPC, Facebook Marketing, Mobile and Video marketing along with knowledge gained by completing the Google online challenge, JP was the best candidate for the role of marketing manager.

For his thesis he completed into mobile streaming service using Ajzen and Venkatesh's theories of adoption. His research was to establish how mobile music streaming services are used by consumers and Usability plus ease of use are important for an app's integration into people's daily lives. These skills were put to great use when looking at how location based services like Nearu are used by the public and how best to use them.

- Marketing Research
- Team Motivator
- Legal Considerations
- Developing Social Media Strategy
- Managing Sales Strategy

Luke Freeman - CIO (Chief Information Officer)

Luke graduated from DCU with a BSc in Enterprise Computing and his experience in this field has led him to oversee the technical operations of the company. Luke lists project management, design skills and web technologies as his key qualities and will use these to take the initial idea from a concept to a fully-fledged prototype.

Technical project management – Luke is responsible for planning the various stages of development and ensuring the stated components are delivered on time.

Application design and development – Luke is responsible for the applications interface design and the development of a working prototype.

System architecture – Luke will research and design the appropriate system architecture to support the product and services functionality.

Website design and development – Luke is responsible for creating the marketing website.

Yue Zhang - Commercialization Manager

Yue is a Chinese student who used to work in an international company as the personal assistant of the CMO for one year. She has had got a lot of chances to meet many senior marketing leaders with my boss in work, see how they make a commercialization plan, how they negotiate to reach an agreement. In addition, she worked with many enthusiastic people on several projects during the year in DCU. These experiences enhanced her professional skills of communication and marketing research. Thus she was recommended as the commercialisation manager of this project. She is aware of the skills and specialties of each team members put them on specific positions to perform the best of them. At the same time, in charge of Chinese marketing analysis, because of her knowledge of China than the other team mates and because it is a huge, complicated and beneficial area, it's very important for the further development of our product. Besides above, I have attended the Irish market survey by sending questionnaires to the owners and Irish consumers in person, after my explanation, most of them have showed big interests and support to our project.

This experience gives her a chance to combine practical exercises with theories she has learned, and increasing her confidence in pursuing a job within a relevant area in the future.

Emamoke Peters - CFO (Chief Financial Officer)

As a current student of DCU studying MECB; Emamoke hopes to graduate with masters so he can get a full time job in the work force. Joining DCU doing the course has to be one of the best decision he has ever made so far in my entire life, because being young he always had people making decisions for me. But this past year, he decided to combine his love of computers and business with his personal life to gain more experience. His older brother worked as an intern in Google as an Anti-Abuse Engineer where he gets to write codes as well as debug web applications and backend systems. This also involved in building systems to process large database in parallel on massive clusters, my brother has always been an inspiration on my life he made me passionate about computers. With his love for computers and his interest in business studies as a whole as well with his degree he thought about it adding the course he achieved in his under graduate to his masters should help him in terms of the real world not having a problem finding careers anywhere he will go especially with the reputation DCU has it been an amazing and outstanding university. Taking his role as a senior financial officer because of his experience he already has with business and finance during his undergraduate studies in this field. His responsibilities here included determining potential funding, identifying streams of capital and creating a financial plan for the initial project phases. Other aspects of finance management include determining the cost of development and funding for advertisement of the application.

nearU

BUSINESS STRATEGY

Market Analysis

Market and Industry Overview

To understand the state of Irish retail in the last couple of years you just have to look at the closure of all the high street HMV stores (Trenholm 2013) across the Ireland and the UK as a sign that the Irish retail industry is under a lot of stress due to a number of factors which include the “Showrooming” phenomena, (Wingfield 2013) the global recession and the rise of websites such as Amazon. These factors are reflected in the recent results from the *central statistics office* (CSO) which have stated that retail sales in April showed its second consecutive month of decline with sales declining by .8% with the same month last year (Appendix 7).

Table 1 Seasonally Adjusted Indices of Total Retail Sales¹

Base Year: 2005=100

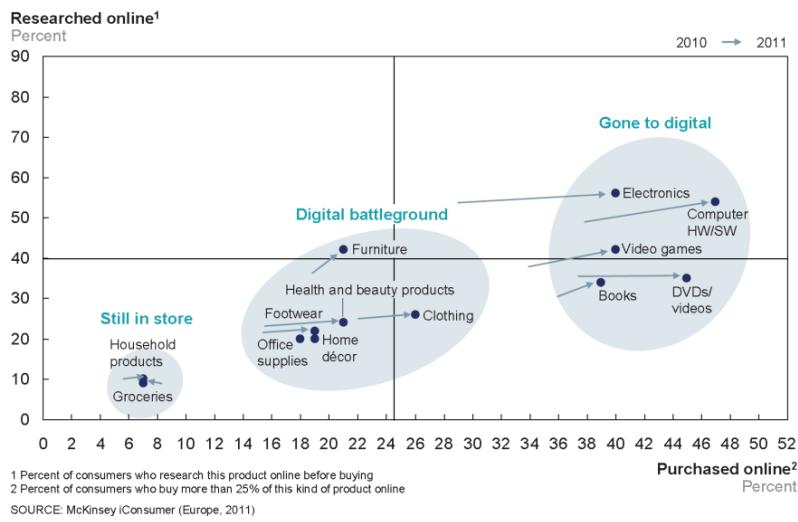
Period	Total Retail Sales for all Businesses Combined						
	Value of Sales			Volume of Sales			
	Index	% change on previous period		Annual %	% change on previous period		Annual %
		Index	change	Index	Index	change	
2008	Year	110.8	-4.5	-4.5	107.4	-6.0	-6.0
2009	Year	90.9	-18.0	-18.0	92.6	-13.8	-13.8
2010	Year	89.1	-2.0	-2.0	93.9	1.4	1.4
2011	Year	88.5	-0.7	-0.7	93.1	-0.9	-0.9
2012	Year	87.9	-0.7	-0.7	92.1	-1.1	-1.1

The most seriously affected sector was furniture which has seen a drop of 5.1% with books sales falling by 5.2%. The sector which has been hardest hit is clothing which is

probably the main sector for our application (Dept of Finance 2013). According Stephan Lynam, director of *Retail Ireland* this is an “overall reversal of the trend in overall sales growth that we saw late last year”. The cost of services to the retailer has also increased considerably since the start of the recession and when compared to the state of retail in the UK in 2012, the industry is taken a terrible beating (IBEC 2013). This is shown by the fact that electricity prices for mid-size business are 15% more expensive than the UK along with rent prices in Dublin a whopping 50% more than rent prices in UK cities such as Manchester and Birmingham (IBEC 2013). This does not hide the fact that UK is also suffering from the three factors (recession) mentioned above as a recent report by the *Centre for Retail Research* has predicted that up to 20% of high street shops will be forced to close by 2018, meaning sixty two thousand stores and 316,000 jobs would be lost (Centre for Retail Research 2013). The importance of retail to the Irish industry can be shown by the size of the gross domestic product, which is currently calculated to be 10% GDP. The majority of this GDP is generated by the 44000 small to medium enterprises that can be found across the length and breadth of the country, 86% of which have less than ten employees. Like the UK, a large amount of employment has been lost, currently standing at an estimated fifty thousand jobs (Retail Ireland 2012).

When considering the three pronged attack of websites such as *Amazon*, *E-bay* or *ASOS* which has led to the increase in “showrooming” which is the practise of comparing prices of a certain item on your smartphone to the online price. The digital battle ground as described by leading analyst firm *McKinsey* in 2011 highlights how the likes of Amazon had already moved major consumer goods such as electronics and books to online arena while such consumer items such as clothing, furniture and health and beauty products were still being fought over between bricks and mortar stores and online retailers. Food groceries are more likely to be bought on the high street (Appendix 11). (Graphic below)⁸

Digital window shopping is growing across all categories [EUROPEAN AVERAGE]

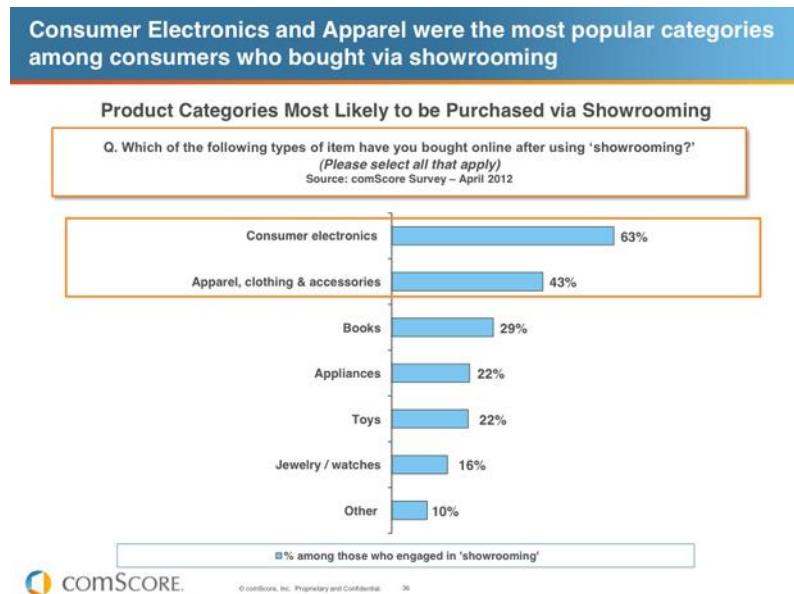


The scale of the threat to the retail can be shown by the raft of research by all the leading analysts into the practise with Accenture publishing in their report “The Today Shopper’s Preferences” survey that “72% of consumers aged 20-40 in the US and the UK use mobile devices while in-store to compare prices and the majority leave before making a purchase” (Accenture 2012).

Research from a British UX design company purposed that 40% of UK “showroomers” buy items from a competitor – either in-store or online- after comparing prices via their mobile while visiting a store. Deloitte digital have concentrated on the US market and have found that fifty-nine million smartphone users in the US will take part in the Showrooming practise. This was highlighted by the massive retail store JC Penny who have seen sales drop by 32% in the last quarter of 2012, estimating that showroomers had visited their stores 14% more than the average US consumer in January 2013 (Deloitte 2012).

Major electrical retailers *Best Buy* have recently aimed to reduce the practise by offering the same price in-store as the nine major e-tailers have on their website. It seems that electrical items are the most popular to showroom as reflected in research by *Comscore*

who found that 6 in 10 surveyed consumers had bought an electrical item online after viewing in-store (Appendix 12) and these results could easily be reflected across Ireland and Europe.



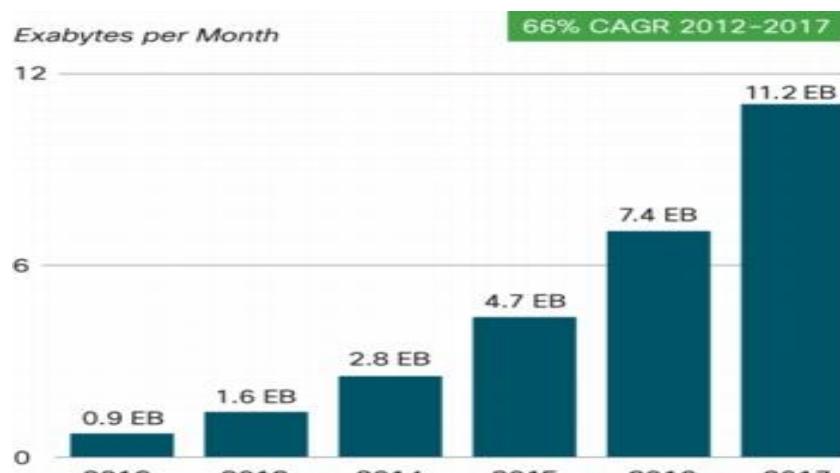
A recently viral picture posted on *Reddit* taken outside a shop in Brisbane, Australia has shown the how unpopular the practise has grown among retailers with the shop owners stating that they would charge each browser a \$5 dollar “just looking” fee (Kooser 2013). This is surely not the way to proceed for any retailer but it definitely highlights how globally the practise is affected retailers.

These results highlight the need for retail to quickly adapt to the new technologies available to them and use them to increase their footfall and overall profits. The potential usage of smartphone technology could be used to great effect in this process and when you consider that smartphones, according to Cisco's estimate, will exceed the amount of human beings on the planet by the end of 2013 and will be 1.4 times the population by 2017 (Cisco 2013) These smartphones will be creating 11.2 billion Exabyte's of data per month (Appendix 8).

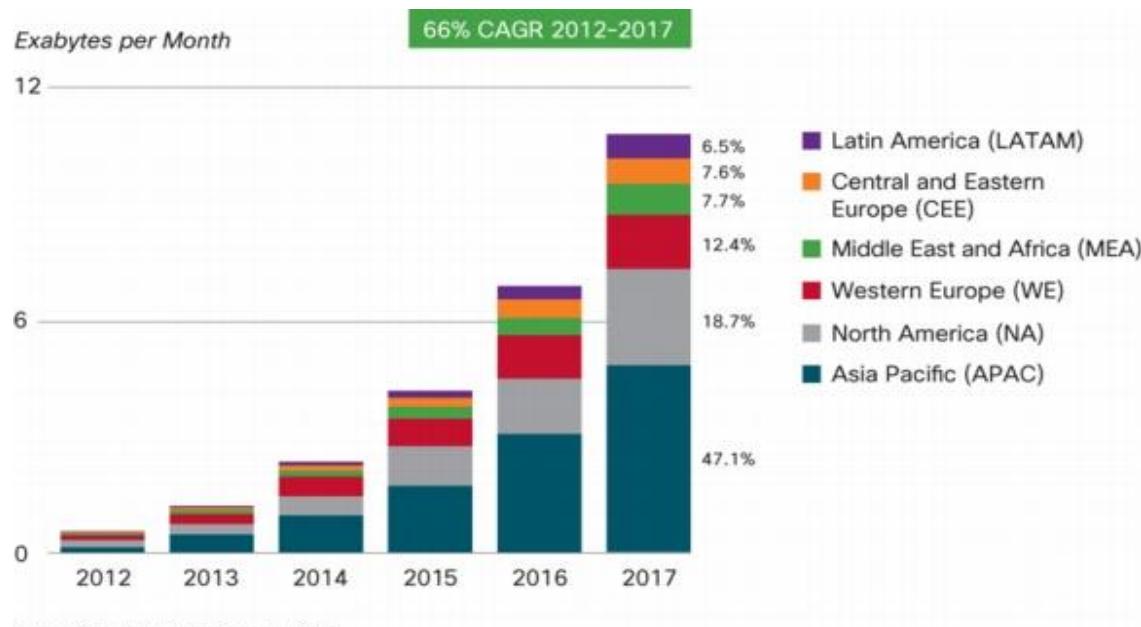
So you can see that retail will have the tools to stop the slide into insignificance. This massive scale of smartphone usage will also bring the potential of location based services and analytics, with ABI research estimating the location analytics market to be worth nearly \$9 billion dollars by 2016 (Verrinder 2011). The advertising potential is also massive with recent research by Berg Insight currently estimating the global location based advertising market to be worth €526 million in 2012 and factoring a compound annual growth rate of 65% to will grow to €6.5 billion in 2017. The move to mobile is on in a big way and its estimated that mobile will eventually will take just under a third of the advertising and marketing spend with location based advertising taking a 5% slice of the digital advertising market, which will be a 1% share of the total ad industry.

The potential of location advertising is going to increase but will only work if people are willing to keep their GPS tracker turned and their privacy setting set to open. In a recent geo-fence survey pilot, 60% of participants were not concerned about privacy or security. In another Cisco survey of 1511 consumers and 407 retailers across ten countries found that nearly half of the consumers were comfortable with retailers collecting personal information when shopping, while 54% said they were ok with retailers storing their purchase histories in exchange for more personalised services (Lennox 2013).

(Appendices 8)



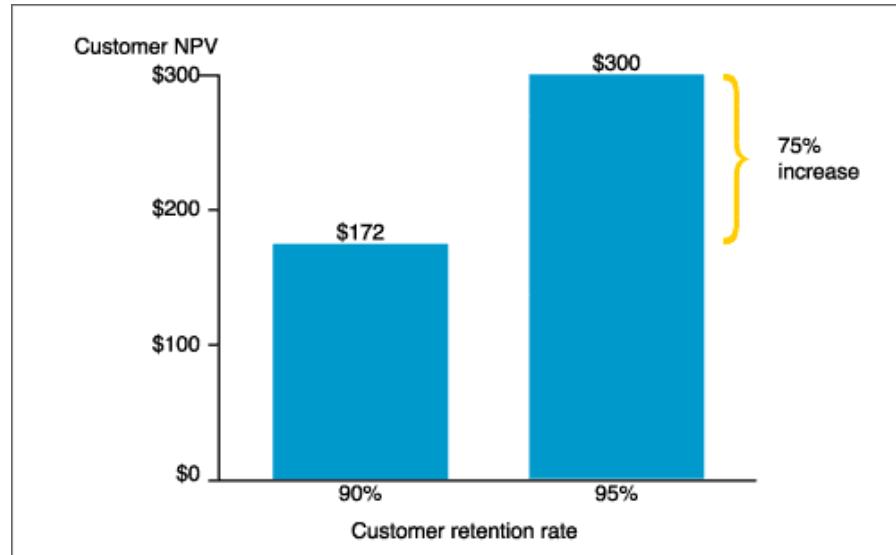
Source: Cisco VNI Mobile Forecast, 2013



Loyalty Programs

Loyalty programs have been used by retail stores since *Homebase* launched their program for DIY enthusiasts back in 1982 (Smithers 2012). These programs can come in all shapes and sizes from massive chains like *Homebase* and *Tesco* to small chain butchers which has only has two stores but the general theme is keep shoppers coming back (Halpern 2012) Loyalty programs have gained further traction due to the fact that personalised marketing messages can be sent to a consumer mobile from their favourite retail store, enhancing their relationship and loyalty to the brand (Wisemarketer 2012). Loyalty programs are important in attracting new customers and reduces advertising spend due to the personalised nature of the mobile messages while traditional means like distributing thousands of flyers, has no way of showing actual sales conversions or ROI (avi-infosys 2013). Loyalty programs are also helpful in increasing

interaction/engagement between the shopper and the brand which can only be developed over a period of time in which a trusting relationship can be built. A 5% increase in customer retention yields a 75% increase in customer net present value (Appendix 1).



The important factor in this growing relationship is to supply the consumer with something they really care about in a timeframe that suits them and can be accessed on multiple occasions. (theloyaltyguide 2013) loyalty marketing is about understanding what consumers want and according research group *emarketer*, 34% of their respondents what 24/7 customers service, 20% rewards and 13% exclusive offers while 10% chose personalisation (Appendix 4).



(Appendix 4).

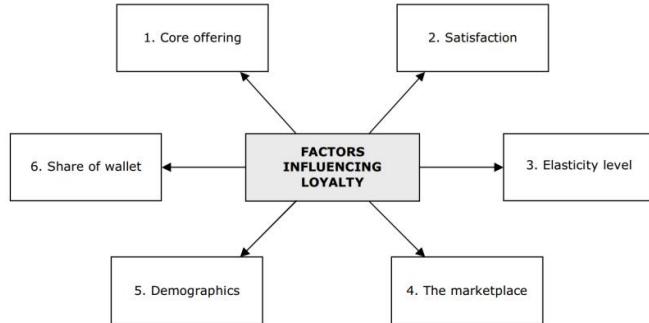
The Key Elements of a Loyalty Program

The main elements can be broken down into satisfaction, elasticity, indifference, the marketplace competitors, demographics and share of wallet (Appendix 3). If customer satisfaction is low then loyalty will not happen but even high satisfaction can be misleading as a customer can leave the program at any time. This leads us to marketplace competitors, which can be the cause of a customer leaving your loyalty program. If a consumer sees a better offer and it is easy to switch programs they will do so. This means that a loyalty program must deliver on their promises every time. The next factor is indifference which can be related to competitors because if the market is full of similar commoditised products, it's a lot harder to generate loyalty to one program. Share of wallet relates to how much consumers are spending in your sector and this starts to become important when the loyalty markets are saturated. When you have an excellent loyalty program your user base will supply you with a 100% share of their wallet (theloyaltyguide 2012).

From chapter 2 - The Business Case for Loyalty

2.3 Factors influencing loyalty

A number of factors play a part in influencing the loyalty and the commitment of customers:

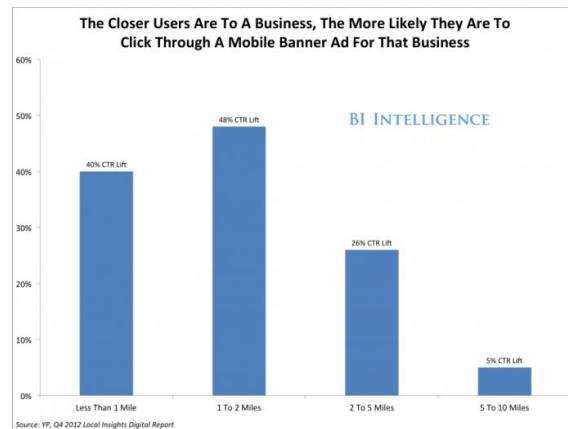


(Appendix 3)

When you analyse the demographics that make up a loyalty program you start understand which segments are more loyal than others. When Jan Hofmeyer and Butch Rice developed the conversation model back in 1986, they found out they could segment customers by the willingness to stay with a brand along with segmenting non-users by their willingness to move to the brand. They maintained that people on the lower end of the income scale where more likely to stay committed to one brand because they could not afford to move to another. (Loyalty guide 2012) The demographic segment's that is more likely to move their brand loyalty where the younger age group along with people in the higher end of the income scale. In an updated study of the conversion model, on 42% of occasions, people buy a brand that is not their first choice because of factors such as affordability, availability, and the influence of others in the household (mrweb 2012).

According to Ranjith Kumaran, CEO of loyalty platform Punchtab, the myth that loyalty programs are generally the domain of sweepstake hunters is wholly untrue stating that "*the right combination of audience, actions, and rewards can engage and retain the right audience*" (Knight 2013). This is also highlighted by the findings of Moritz loyalty that found 69% of respondents preferred personalised discounts based on their shopping habits, while 62% liked to get personalised offers which were curated through

preferences they manage by themselves (Hayes 2013). The use of geo-fences seems to be the perfect way to attract customers that within range which is getting marketers excited due to the increase in click per impression rates. Mobile ad networks are praising this success claiming that there has been a fivefold increase in CPM (Market insight 2013). Popular research website Business Intelligence found that people who receive a message from within a mile of geo fence area has 40% click through rate, and rises to 48%, when its within 1 to 2 miles (BI 2013) (Appendix 9).



Berg Insight report stated that Geo-fencing and location based advertising has the ability to increase relevance by delivering the right message to the right person thus leading to “higher than average conversions” (Ballve, Heggesteun 2013). Chief locator found that 78% somewhat or strongly agree that mobile campaigns have the ability to influence consumers’ decision to visit stores (Appendix 6).

Geofence pilot sees positive results



Consumer Research

(See Appendix 17 for Survey)

As there are two main customer segments in our model, the retailers and the consumers, the best approach was two separate surveys to gain an insight into how they would perceive the technology. The first to be constructed was the consumer survey which was based on previous research by Moritz loyalty with an aim of finding out people interact with loyalty programs. These results would help us understand the best to approach the various customers relationship management system, and how privacy conscious the user base would in relation to the various features within the app.

The first series of questions (**Q.1-10**) wanted to find out how important loyalty programs were to the respondents, how dedicated they are and what sort of programs they were involved with e.g. clothing, groceries, travel/hotel or entertainment and the frequency at which they collected loyalty points over twelve months. We really wanted to drill down and find out how popular loyalty programs and the results highlighted that over half of the respondents had positive outlook on loyalty programs. 53% of the respondents agreed that a program was worth the effort while 39% agreed that their loyalty program was part of their relationship with a retailer. The majority of loyalty programs we listed found that retail was the most frequent followed by entertainment.

The next series (**Q.11-13**) asked how loyalty programs influenced their shopping habits. Questions **11** and **12** would help us understand how likely people would be to change their shopping behaviours so they get the most out of their program while **Q.13** asked how likely they would keep doing business with a retail unit because of their loyalty program.

Questions 14-25 would help us understand the main reasons why somebody stopped/not participated in a certain loyalty program. These questions were broken

down into definitive reasons such as not earning enough points/rewards fast enough, poor communications from the loyalty or the rewards did not appeal to them.

Questions 26-32: were asking to find what level of interaction people are willing to commit and what recent activity they did to gain extra points. We wanted to find how people willing would be to use social media, how interested they would be in referring friends to the program in order to receive extra points. These were important to the development of the loyalty scheme as it gave us an idea of people really wants from a program.

Questions 33-37: Communications between Consumer and a loyalty program was an essential part in relation to understanding how past or present programs engaged with them, such as being relevant, where they interesting enough to open and read or did their communications just turn out to be a spammy mess. These questions would help us improve our customer relationship management which is very important part of keeping the user base of Nearu on board and excited about what was going across the app and the loyalty program.

Questions 38- 46: The scale of creepy and weird versus cool and exciting could be based on the Robert Scoble's take on new technology being too intrusive, misunderstood or if the cross "the freaky line". These would help us define the some of the more privacy sensitive issues or their "openness or desire" for the reward program to engage with them in ways that could become part of the programming of the app further down the life cycle of the Nearu application. The questions asked how willing the participants would be letting the program analyse their friend's social media posts or would they allow access to their personal information such as personal income, household composition, etc.

These questions were in the heavier end of intrusiveness while the question that asked about respondents like to receive personalised discounts on their favourite items, based on their purchasing habits or offers based on preferences that the user base would

manage and update by themselves would be more acceptable. These issues come down to trust in technology and how much information they willing to share. It could be said that the more people start to get use to the freakier technologies and see how they are actually benefiting them and not stealing private details, the more likely they are to keep using them.

We started distributing the questionnaire on the 22nd of June and gained our first response on the 24th of June. By the 23rd of July we had received our 73rd response and began to analyse the results. The results were gained by using the internet survey provider *SurveyGizmo* in which we signed up to the premium package after completing the 14 day free trial. The distribution of the survey was done through various social media sites such as Facebook, Twitter, LinkedIn and a loyalty forum, along with distributing them by hand across the DCU campus library. The results that were gained through the paper survey were then added to the other responses by the team. The total of 73 was seen a poor response as we had hoped to gain 100, this could be blamed on poor design, due to some respondent feedback stating the survey was confusing, therefore hampering the success of the consumer survey. The survey had a worldwide responses with people from Carlsbad in the US, Majorca in Spain and the UK but the majority of respondents were from Ireland.

Consumer Research Results

(See Appendix 25 for results)

(Q.1-10) We really wanted to drill down and find out how popular loyalty programs and the results highlighted that over have of the respondents had positive outlook on loyalty programs. 53% of the respondent agreed that program where worth the effort while 39% agreed that their loyalty program was part of their relationship. The majority of programs we listed were used by the respondent with the obvious choice of groceries being the most popular with 55%. This pointed towards the success of Tesco's program and we should be targeting retail units such as butchers or fruit and veg shop for our

retail survey. The second was a fashion/retail program at 53%, while the least popular being financial only scoring a yes from 7 of the 71 respondents to that question. This result highlights the low uptake for loyalty on credit cards among the millennial demographic.

(Q11-13) Individual items seemed to have twice as much influence on respondent behaviour when collecting points when compared to brands with 40% agreeing that items would affect their behaviour compared to 20% for brands. This could result could mean that the millennials are more likely to stay to loyal to a particular shop or shopping centre meaning they would possibly travel to the other side of Dublin to visit a certain store. This is backed up by q.13 with 43% agreeing and 7% strongly agreeing that program make it more like that will continue to stay doing business with a particular company.

(Q14-25) Participants pointed towards programs that charged a fee, points systems not accumulating fast enough and poor rewards as the three main reasons to leave a program. Requesting to much personal info, privacy and difficulty signing up could be classified as medium risks as they scored an average of 50% with people being part of too many program the lowest risk, again pointing to the popularity of loyalty programs but highlighting the difficulty in maintaining wallet share for our program amongst the many that a typical user has.

(Q26-32) These results generated mostly negative responses with respondents averaging around 20% saying agreeing that did that activity recently with referring their friends to receive extra points gained the most ticks. Question 32 pointed towards receiving points for referring friends, VIP access to exclusive events or experiences 69%, like special services such as front of the line access, concierge, Receiving points for referring friends 52%, earning benefits for interacting with the program via social media 48% as the three most popular benefits. These benefits will make up the core offering when we launch the app with the VIP access being awarded to music fan who have gained extra loyalty points by signing in at music events, taking picture of certain

band member or recording a particular song using the recognition features within the Nearu app. These offerings could be added further down the line in year two.

(Q33-37) The email came across as the most popular channel for contacting the app user base. These questions found that loyalty program have a difficult time getting people to open their email (14% agreed) but when they opened them, they are relevant (30%) to them maybe because are personalised to their need. This would point out our team the importance of having a highly relevant message that are sent once a week, not every day giving people more incentive to read the email message.

(Q33-46) The creepy and weird factor was important because the high level of contextual awareness within the Nearu application. Personalised discounts on your favourite items based on your purchasing habits were the favourite of the selection with 58% agreeing. While Personalised offers you want based on your preferences that you manage and update with just fewer than 15% of the 52% total agreeing that it was really cool feature to have in the app. The creepiest feature was allowing programs to review your friend's status updates/photos to determine your eligibility for benefits with 35% of 75% agreeing it was really creepy.

(Q47-48) As suspected the majority of the respondents where between the age of 18-35 with 92% of respondent within them demographic. There was nearly an equal split between male and female with 39 males and 34 females responding. These was happily received by the team as it meant the result where not biased in favour of one gender.

Company Research

(See Appendix 18 for Survey, Appendix 23 for Survey Results and Appendix 24 for Correlated results)

The importance of finding out the opinion of a wide selection of retailers and merchants was important for the validity of the project. The aim was to visit at least 50 retail units over the months June and July across the city of Dublin and by July, we had gained 51.

The first shopping centre we visited was the St. Stephan's Green SC where we talked to the various retail units across the three levels. The conversations were mostly positive when we had time to chat to the owner and the research trip helped us write up the questions for the survey. The survey consisted of 24 questions that asked the participants about their current marketing platforms, what sort of budget they had for advertising and how aware they were of different types of technology that could benefit them and willing they would to use it.

The first question (**Q.1**) asked the name of the company while the second (**Q.2**) found what kind of business they were in. The most common store that we visited and received feedback through the internet was clothing at 37%, while accessories had a total of seven or 13.5% with the third most popular being health and beauty units such foot spa or facial treatments. This highlight the fact that majority of retail store across Ireland would be involved in the clothing industry, making it a highly competitive sector of the market, one that team could use to its benefit by helping store stand out for the crowd in the short term. The majority of the business we asked was more than five years or more in business at 56% with one year old stores at 15%. The older stores are possibly less likely to take on the app because they could be set in their ways like one store who seemed very insulted when we asked did he know about various technologies like NFC or geo-fences. It would be good business relation to treat these stores with a softly softly approach, making sure we have extensive proof that our app was a success to get them on-board.

We asked about what types of marketing outlet they used in (**Q.4**), a great deal ticked the social media box along flyers/print media, websites and billboard campaigns the most popular. They used platforms as a multi-channel approach to attract attention to their brand and engage with consumers. Social media is one the main channels we will use to help the shopper to post their updates when they trying to gain extra points. These updates will be posted on the retailer's Facebook page, which will help increase their Edge Rank score, increase engagement and conversation between customer and retailer. (**Q.5**) helped us realise the how unaware of the various technologies that the retail industry can use to battle the treat of showrooming because where they using any

other software tools or applications 86.5% said no. this could be higher due the fact that some retailer may have confused that to mean Facebook when 7 out the 52 respondents answered yes. They also agreed in **Q.6** that social media was the most effective channel for marketing with 53% agreeing along with 31% for promotions and 22% for website.

When asked **Q7** about budget, we weren't expecting to receive accurate information on the exact amount they would spend on their marketing budget so we divided the multiple choice answers in multiples of €500. The most selected option was €0-500 budget range. Of course this variation depended on the business they had and how knowledgeable the retail assistant we asked which happened a few time due to the owner or manager not been present. What it did tell us when we compared how much the more established retailer spent (5yr+) shop spent the majority (12) ticked 0-500, meaning they were relying on walk-in sales and impulse purchases to help drive business not marketing spend.

One retail sector that had an even spread of budgets when compared to age was the café/restaurant while the most popular choice of clothing sector was solidly locked into a 0-500, 500-1000 budget range with 11 stores picking that price range.

For **(Q.8)** we ask did they regularly take part into promotion or deals and the majority (75%) saying yes clothing again being the most common to say yes along with health and beauty, cafes and accessories. We asked to find out what sector would be most suited in using app due to the nature of the push messages our will send. For **(Q.9)** and **(Q.10)**, we tried to find out how tech savvy they were and were they aware of any mobile app or location based software to help them with customer interaction. When we compared the type of business to awareness, we found that cafés had the highest ratio while accessories having the lowest awareness. When we asked about our competitors in **(Q.11)**, only one person mentioned Tempster while Phlok was the most common reply for retailers based in swords due the app being present in retail units across the village. This shows when taking Swords out of the reply's, not many of the

retailers we had talked to had any knowledge of *Phlok*, which could be considered good news for when we launch the app.

For **(Q12-16)**, we wanted to understand how willing retailer would be to use the technology we offering such as the mobile advertising. These three questions where gained very positive replies with clothing again being the most positive with 52% saying they would be willing to use the latest tech (27% somewhat agreeing) with 42% agreeing (31% somewhat) that mobile advertising was a great idea. 33% agreed that would be willing to use the Nearu technology (38% somewhat) while 35% said they would be willing (18% somewhat) to beta test the app. These results pointed out to us that this is the right time so this sort of technology to be introduced on a bigger scale.

For **(Q.17)** We asked the retailers where they aware of Near Field Communication's (NFC) capabilities on smartphone and two thirds said they had no knowledge of such technology. As this to be expected NFC was only recently being put Google's nexus s in 2010. This helped us realise that we would need to clearly explain the various technologies we are using for the application, so make sure there was no confusion for the retailers when we add the NFC ID tags to the shopdoor as means of identifying the shop correctly. It should be noted that has indoor positioning platforms such as Qualcomm's IZAT will eventually replace the need for the NFC tags. Indoor positioned is need as GPS signal is not enough to be used inside.

(Q18-19) asked would retailers be happy to input their offers through their own account on our website, 29% agreed (33% somewhat) an important stat in relation to retailers using our tech with 25% fully agreeing (39% somewhat) Again early days in really proving that our app will actually work but the positive comments and understanding from the majority of the retailers that it was a great idea really pushed us in the right direction. This was backed in **(Q.21)** when 48% of respondent agreed (35% somewhat) that notifying consumers about products within the store vicinity was worthwhile. **(Q.22)** asked about privacy concerns about using Nearu Technology with 29% agreeing (29% somewhat). We must put across that our app will have a strong

privacy policy within, making us compliant with the appropriate Data law's within the EU and China.

(Q.23) asked the retailer to choose out a five services what would interest the most and attracting customer's in-store was the most popular, getting 35 clicks. Rising awareness about the shop location by using the push messaging received 22 clicks along with messages about deals receiving 17 clicks. These were similar result to the consumer surveys, giving us a clear message of what features to add to the app. The final question **(Q.24)** helped the team realise how much retailers would be willing to pay. Of course businesses will always look for the best deal but the fact that 16% said they would be willing to pay between €250 and €500 per year for our app has made the team to choose €360 as an opening price for the yearly subscription.

Market Analysis (China)

Chinese Mobile Market

There are many ways to evaluate the size of a mobile market. Mobile subscriptions are the number of SIM cards being used in an area (MobiThinking). According to the latest statistics from MobiThinking, China sits on the top of the 10 biggest mobile markets, these 10 countries including India, USA, Indonesia etc. account for more than 55% of the world's total mobile subscriptions. This sounds incredibly amazing considering that there are 196 countries in the world; this is definitely related to the size of the population. China, the country with a population of over 1.3 billion (World bank), 85.9% of the population are mobile subscriptions and 15.8% of the population are 3G/4G users, which means there are 1,155.3 million mobile subscriptions and 293.0 million 3G/4G subscriptions as of April 2013 (MobiThinking 2013). There are four massive landmarks that underscore the importance of China as the world's top mobile market.

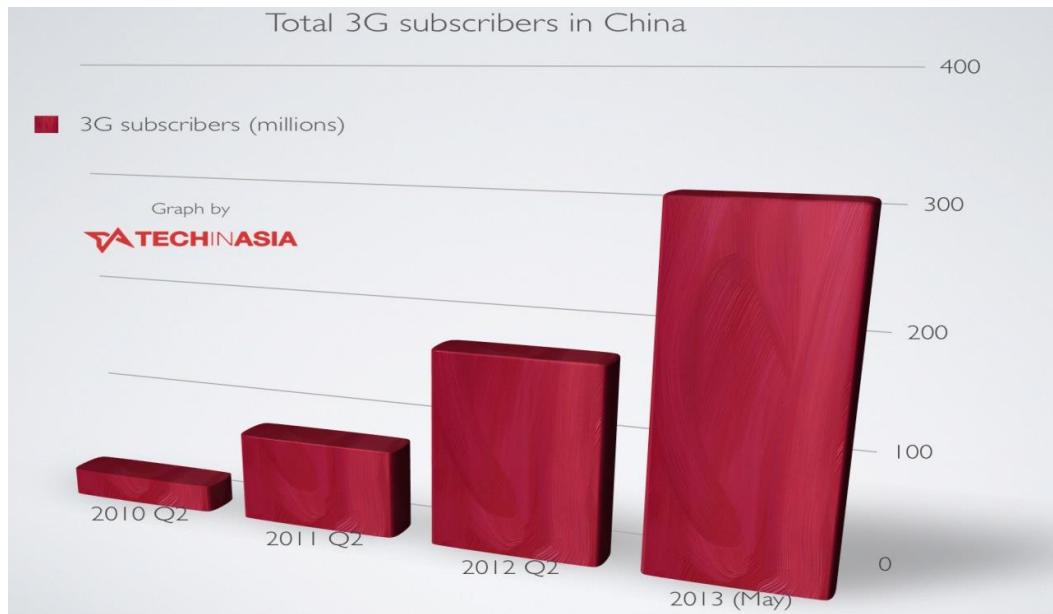
Mobile Subscribers

Firstly, China now has more than 1 billion mobile subscribers. Data from China's three telecommunications operators showed that China, the world's largest mobile phone market by subscribers, posted a 1.2% monthly increase in the number of mobile subscribers to 1.15 billion in March 2013 (Reuters 2013).

3G Subscribers

Secondly, according to the latest figures released by all three of China's mobile telecommunications companies, China now has more than 300 million 3G subscribers (Millward 2013).China Mobile now has 129.40 million on its TD-SCDMA network despite it not supporting Apple's iPhone or iPad for full 3G functionality; China Unicom is now up to 95.9 million on its 3G data plans; while China Telecom has convinced 88

million to sign up for 3G. That's a total of 309.5million on 3G in China. That's well up from 175 million nearly a year ago at Q2 2012 (Millward 2013).



Chinese Smartphone Market

China overtook the US as the largest smartphone market in Q3 2011, according to Strategy Analytics (November 2011) or Q1 2012, according to Canalys (May 2012), and has not looked back since. Market research firm IDC (August 2012) estimates that China's share of the global smartphone market in 2012 was 26.5 percent, and Canalys (January 2013) predicts that 240 million smartphones will be sold in China in 2013, which makes China's share of the global smartphone market become 29 percent (MobiThinking 2013).

Top five markets by share of global smartphone sales 2011, 2012, and 2016 according to IDC					Smartphone sales forecasts for BRICI economies compared with US according to Canalyis.			
Country	2011 market share	2012 market share	2016 market share	Growth 2011-16	Country	2013 shipments	2013 market share	2012-13 growth
China	18.3%	26.5%	23.0%	26.2%	China	239.8m	28.7%	29.1
USA	21.3%	17.8%	14.5%	11.6%	USA	125m	14.9%	N/A
India	2.2%	2.5%	8.5%	57.5%	India	26.5m	3.2%	61.4%
Brazil	1.8%	2.3%	4.4%	44.0%	Russia	18.8	2.3%	30.7%
United Kingdom	5.3%	4.5%	3.6%	11.5%	Brazil	17.2	2.1%	40.0%
Rest of World	51.1%	46.4%	46.0%	18.1%	Indonesia	15.7m	1.9%	51.7%
					Grand total	837.0m	100%	22.5%
Source: © IDC (Aug 2012)					Source: © Canalyis (January 2013)			

Via: © mobiThinking

IDC believes the Chinese market is being driven by low-end Android devices which values sub-\$200 and expects prices to fall below \$100 as competition, particularly from domestic vendors intensifies (MobiThinking 2013). According to new data from Strategy Analytics picked up by The Korea Herald, Samsung bested several competitive Chinese local brands in the first quarter of 2013 to become the top-selling smartphone vendor in China, which accounted for 19% of all smartphones shipped in China during the first quarter this year (Epstein 2013). While domestic brands Huawei sits topping No.2 with 8.1 million units selling, Lenovo sits No.3 with 7.9 million units selling, Coolpad (7 million) at No.4 and ZTE (6.4 million) at No.6. Apple on position No.5 with 5.1 million performances is reportedly planning to launch a new mid-range iPhone in an effort to better address the Chinese market, which is dominated by low-cost handsets.

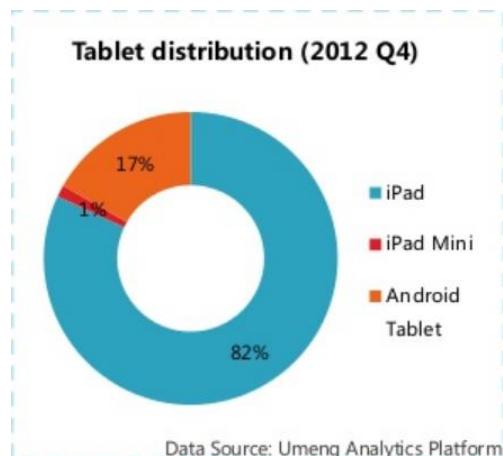
Even though Samsung and HTC were leading the Android device brands, the rise of Lenovo, Coolpad, Xiaomi, OPPO and many local brands, coupled with many other smaller Android brands, had caused the Android market to become more dynamic (Umeng 2013). Chinese consumers were literally spoilt for choice.

China's active smartphone exceeded the total number of all 321 million mobile phones active in the US. The former lead China researcher at Microsoft and then Google predicts that China will have 500 million smartphones users by the end of 2013. Those 500 million smartphone users are going to drive new patterns of online and offline

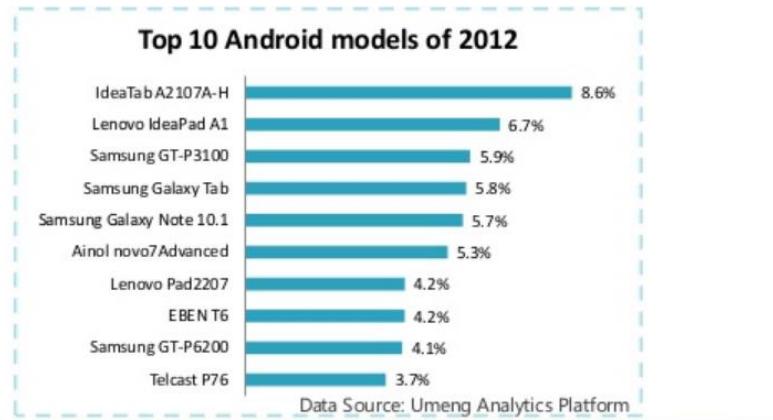
commerce that will have global consequences. This is particularly relevant as China attempts to increase the role of domestic consumption as a driver of its GDP (Jack 2013).

Tablet Market

Opposite to smartphone market, the tablet market in China is dominated by apple products. After iPad Mini and iPad 4 were officially launched in China, the market share of iPad Mini increased by 4 % in Q4 2012 to reach an 83% market share (Umeng 2013). The launch of the two new iPads had impacted upon the sales of the Android tablets, expanding the market share of Apple.

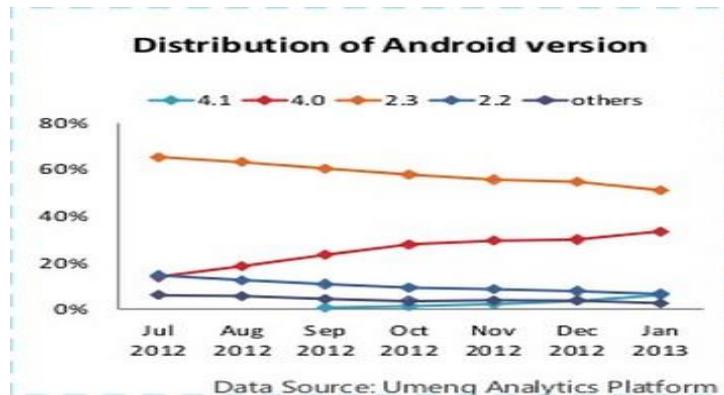


Lenovo and Samsung were the top brands in China's Android tablet market. In 2012 Q4, there were 3 Lenovo and 4 Samsung tablets in the top 10 ranking.



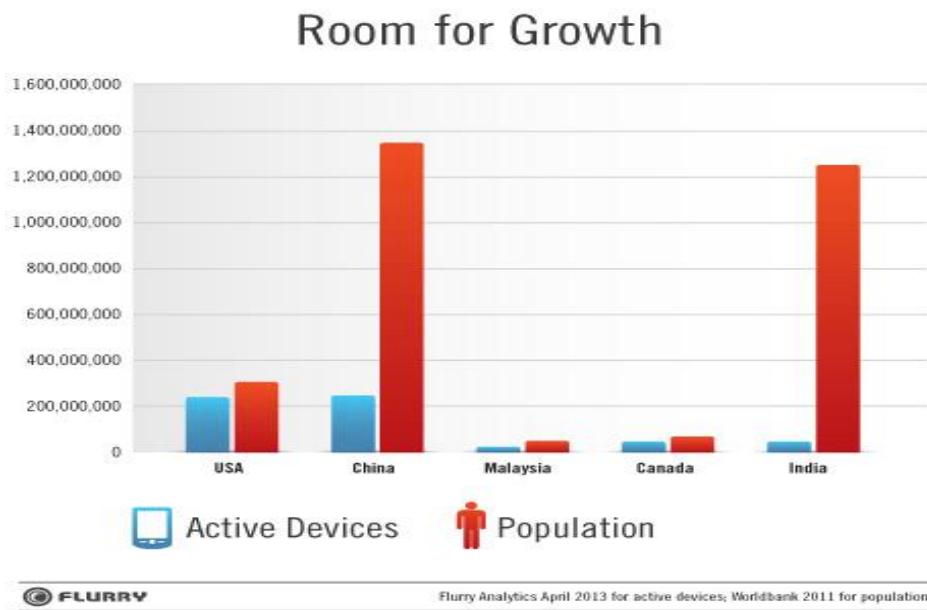
Top Android Model/Make Tablets for China

Chinese Android users are slower than overseas consumers to upgrade the Android OS. For instance 54.8% of Chinese users are still using Android 2.3 as compared to 48.8% of the overseas users (Umeng 2013). This was probably due to the fragmented nature of the local market, the large number of small local manufactures and the slower roll out of the new OS across their handset portfolio. The new Android 4.0 reached 34% by January 2013 and Android 4.1 had increased to 6%. Even though, the version earlier than Android 2.2 only accounts for a tiny market share. Thus our app should be able to launch on most Android devices in China.



Huge Potential for Future Growth

Considering China and the US currently have a similarly sized connected device installed base, but China has more than four times as US population. Combine China's largely untapped population with its rapidly growing incomes (increasing at a rate of 8-10% a year between 2009 and 2011, according to the WorldBank, it's not surprising that the connected device installed base in China grew by 149% between April of 2012 and April of 2013 (Gordon 2013). India and China both have a large population and growing headspace, however China has a much better connected device installed base, and the rate of penetration in India hasn't reached the current rate of penetration as in China (Gordon 2013).



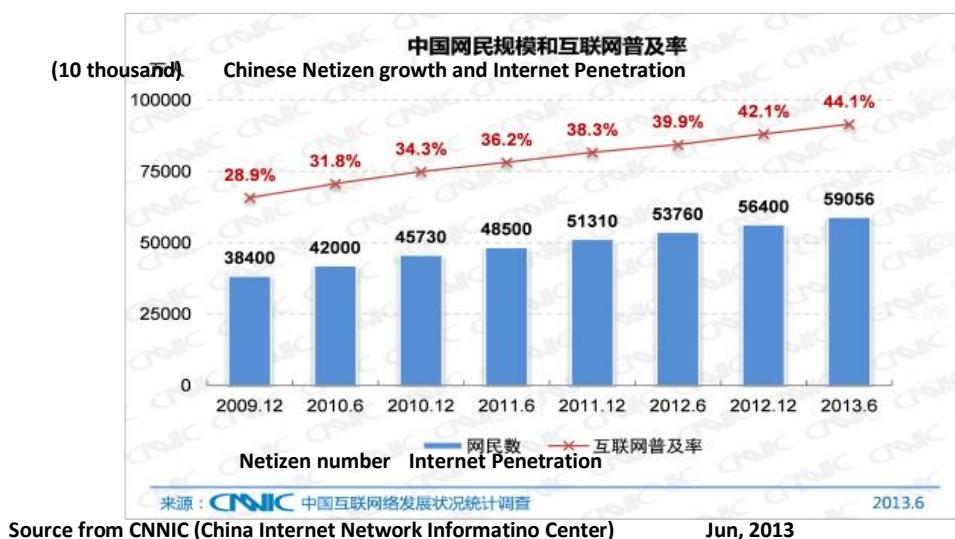
Flurry reveals that there are tons of mobile users around the globe who don't yet have a smartphone, but could easily afford one, which makes for huge untapped growth potential, and China is the leading country in this category (Yeung 2012).

Mobile Internet Users

A state-affiliated research organization CNNIC (China Internet Network Information Center) has released its report on the development and spread of the Internet

throughout China covering the first half of 2013. As expected, the overall penetration rate of China's Internet has grown steadily from 42.1 percent to 44.1 since the end of 2012, with the majority of that growth coming from mobile devices, and the CNNIC predicted that at the current rate, the total number of Internet users in China will reach 800 million by 2015(Horwitz 2013).

At present, a total of nearly 591 million internet users reside in China, a startling 464 million of which are categorized as mobile users, which means that 78.5 percent of Internet users use a smart device when online (Horwitz 2013). Since June of 2012, this mobile-user subset increased by a total of 4,379,000 users.



The report overwhelmingly confirms that mobile phones and tablets, rather than laptops or PCs, serve as the point of entry for Internet users in China. Smartphones and tablets have brought Internet access to parts of the population that would otherwise remain offline; meanwhile, the advent of a mobile Internet has led to more sophisticated businesses and business models than what was previously possible in the desktop era. CNNIC has declared this phase is marked by increased access to 3G, public and private networks and innovative apps. A number of web verticals saw impressive growth, including e-commerce, which saw an 11.9 percent increase in users year-on-year, group buying services, which saw a 21.2 percent increase in users, online news, which saw a 17.8 percent increase in users, and online payment services, which saw a 10.8 percent

increase in users. Although the report provides no information in regards to operating systems, model types, or brand preferences, it's already well known Android products occupy the majority of the market (Horwitz 2013).

Android Dominance

China also passed the US as the world's top country for active Android smartphones and tablets in 2012 so it's also a growing market. Data of the latest three months shows that Android has basically won the game, with over 70% of all sales of smartphone devices accounted for the Android platform (Lunden 2013). Except iOS devices, the smaller players such as BlackBerry, Symbian, Windows and others share a tiny part of the market.

	China	EU5	GB	USA
Android	71.5	70.4	56.6	52.0
iOS	23.6	17.8	29.9	41.9
BlackBerry	0.2	2.5	5.3	0.7
Symbian	1.3	1.2	0.1	0.3
Windows	2.9	6.8	7.8	4.6
Other	0.4	1.4	0.3	0.5

Source from TechCrunch.com (2013)

According to the State of Mobile Benchmark report released by Adobe in April, almost half of Chinas mobile internet visits are from Android devices compared to slightly over one third from iOS devices (China Internet Watch 2013).

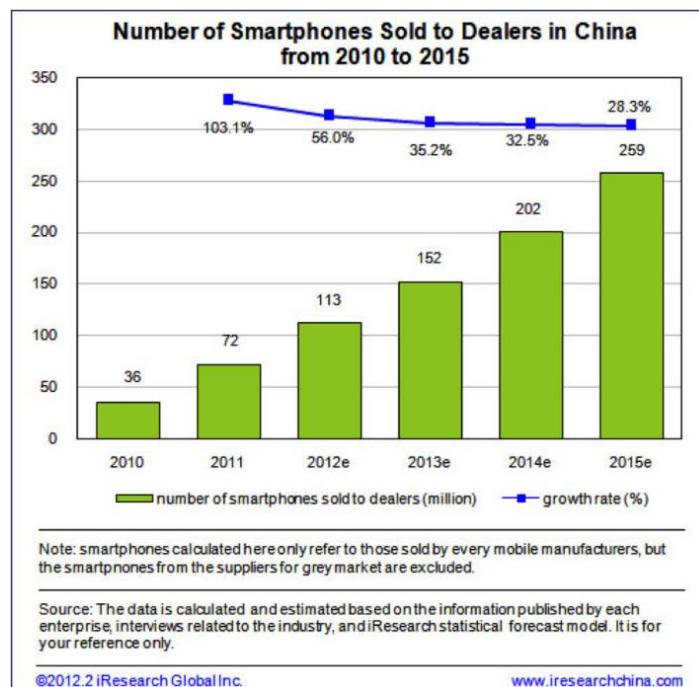
Smartphone Internet Traffic in Select Countries by OS in Feb 2013 (%)			
	China	US	UK
Android	49.6	45.5	37.2
iOS	32.2	49.5	53.5

BlackBerry	1.1	1.5	4.1
Symbian	3.8	0.2	0.4
Windows	0.9	0.9	1.4
Other	12.4	2.5	3.4

Source from CIW (China Internet Watch) (2013)

App Market

China's mobile Internet market is expected to double to about 300 billion yuan (\$48 billion) in 2014 from 150 billion yuan in 2012, with the number of active mobile Internet users rising to 749 million from 521 million during the same period, according to Analysys International (Gallagher 2013). The Chinese app market appears to be a gold-laden opportunity for iOS and Android developers operating anywhere in the world, developers and mobile marketers can no longer afford to ignore the Chinese opportunity.



There are only less than 10% of the 140 million Android devices operating in China are registered with Google Play, the official Android app store (China App Marketing 2013). This is mostly because Google has made a strategic decision to not release a China version of Google Play, and lacks the support of both developers and consumers, and lacks support for paid apps. The result is an explosion of third-party Android app stores, with dozens in existence today, such as:

- 1) Baidu App Store - Baidu is actually an aggregator, picking out apps from numerous third-party stores. It's significant although it's new, since it comes from Baidu (China's leading search engine). This freemium app store is linked prominently on the Baidu mobile frontpage with its own apps.
- 2) Tencent App Gem - Another web giant in China, Tencent, is on the app-tastic Android action as well. Tencent App Gem comes in the form of an app, as well as separate version of the store for Android tablets.
- 3) Other app stores that can't be ignored by app developers are Wandoujia (or SnapPea), AppChina, D.cn Games Center, Gfan, Anzhi, N-Duo Market, and Taobao App Market.

Third-party Android app stores in China look better and more numerous than ever, but the bad news is that piracy is still rife, and there's still the risk of malware getting into these stores with such lax gate-keeping (Millward 2012).

Chinese mobile users show a large preference for free products. Close to 50% of the top 25 most downloaded apps in China have Chinese-language names; the majority of popular apps such as Dianping, QQ Messenger, WeChat, PPS and others, are only popular in Asia, emphasizing the importance of app localization.

To take full advantage of the China opportunity, a post by China App Marketing suggested foreign developers to overcome three key challenges:

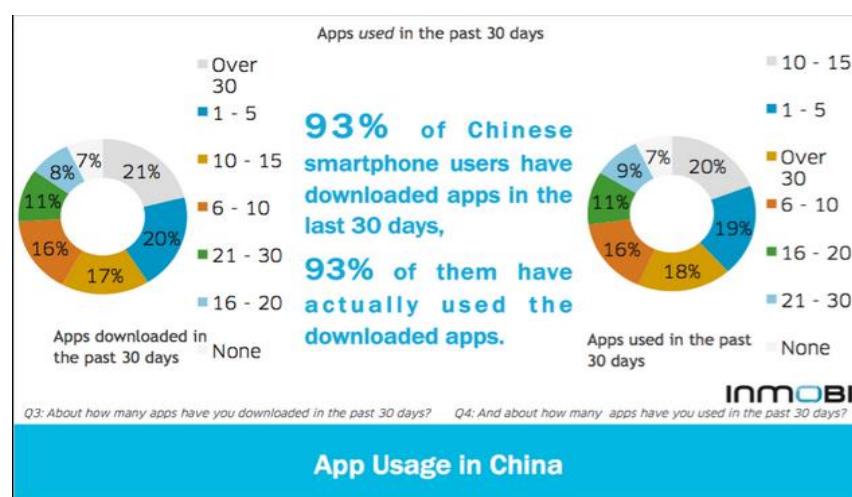
- 1) A fragmented and opaque aggregate app market, especially for Android.

- 2) A strong preference for Chinese-language apps and marketing channels.
- 3) Chinese users' reluctance to pay for mobile products and services.

By innovating marketing and monetization strategies that play to the set of marketing channels and consumer behavior unique to China, foreign developers and mobile app companies can overcome these challenges (China App Marketing 2013).

User Behaviour

InMobi's recently concluded developer research reveals that app usage and download behavior in China is now comparable to that in the US and in fact, on several counts, fares better. The research shows that the appetite for exploring new apps is high amongst the Chinese. A whopping 97% of smartphone users in China revealed that they proactively search for new apps to download, with 37% of them searching on a daily basis (Jack 2013). The Chinese users not only download a lot of apps but also use them heavily. While 86% of all users in the US said that they have downloaded at least one app in the last one month, 93% of users in China downloaded an app during the same period. App usage statistics for china are also a tad higher than in the US, as is evident from the data below.

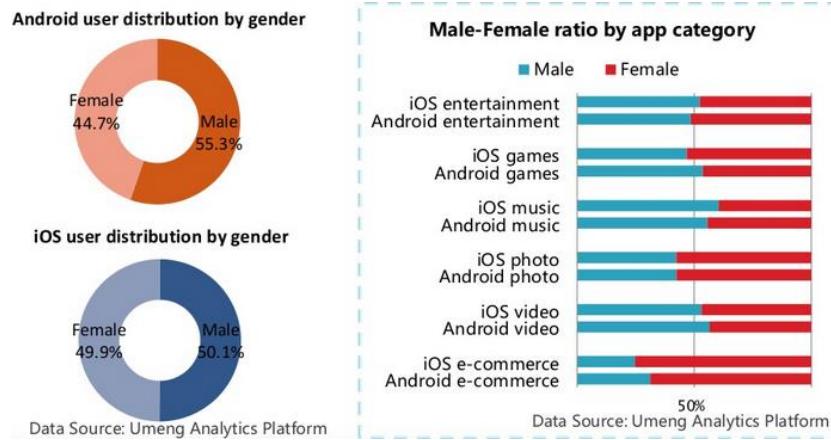


According to 2012 China mobile app store user behaviour report, men made up 57.9% of mobile app store users whereas women accounted for 42.1% mobile app store users were aged between 18 and 35. East China region, the most developed region in China, had the largest number of mobile app store users with a share of 38.9%. For users who downloaded apps via mobile devices, mobile app stores were the primary channel with a share of 24.9%, followed by apps' official websites at 24.5% (iResearch 2013).

In 2012, the average total time and frequency a user spent using apps increased in all categories. The number of mobile app sessions in December 2012 was 16 times that of January 2012, while app session length was 12 times that of January 2012.

Smart phone use has become ingrained into Chinese mobile users' daily lives. Social networking became a key element in mobile apps. Apps that allowed for sharing on social media had users that were more "sticky" and at least 3 times more active (Umeng 2013). Users love to share information on social media; content was shared at the same rate by both males and females. Normally, users with social media sharing habits are very active app users; these users typically accessed their apps 3.5 times more often and used those apps 3.8 times longer compared to users who do not engage in social media sharing. This is the good news for increasing our app usage by providing engaging services that participate in social media.

Males preferred music, video, adventure and board games while women enjoyed photo management, e-commerce and casual games (Umeng 2013). Different sexes had distinctive preferences over different apps such as games, e-commerce, video, entertainment, music and photo management. 68%-75% of users using e-commerce apps were females (Umeng 2013). So our app should be more attractive to female users.



NFC in China

The application of NFC technology in China had not picked up as quickly as it should because it requires many player of the ecosystem to come together, but NFC is gaining a lot of traction due to high mobile adoption and market maturity (Phneah 2013). NFC payment security is not par with the rest of the industry, and it still generally lacks consumer confidence, but the good news is NFC application has taken off in China.

China Mobile, the world's largest mobile network operator, and Chinese bank card association China UnionPay (or in short CUP) have been working together on NFC projects since June 2012, after signing a partnership deal designed to lead the commercial deployment of NFC payments in one hundred cities across China (Boden 2013). Eight banks have already joined the platform, including some of the country's largest such as Bank of China, Shanghai Pudong Development Bank and China CITIC Bank. More Chinese mobile network operators, commercial banks, handset manufacturers and other parties are expected to sign up to the service, which will expand the platform beyond payment cards to include transit cards, social security cards, student cards, access cards, mobile tickets and more (Boden 2013). China Mobile and UnionPay announced the launch of NFC payments in 14 major cities in June 2013 (Balaban 2013). Industry watchers expect mobile devices to play an increasingly large role in many aspects of life including enabling commerce in growing economies,

facilitating medical care in remote areas, and ensuring that people throughout the world have access to world-class educational resources (Gordon 2013).

Official NFC Experience Operator Partner



Supporting Partners



According to CCTV (China Central Television) News, the NFC mobile ticketing has been commercially launched on public transport in Beijing. The service now also works on the subway and is expected to be expanded to airports, schools and other locations (cntv.cn 2013).

The special payment system allowed passengers to pay the trips with their NFC-enabled mobile phone, just with a very simple tap on the smart card reader.



The mobile payment solution not only works on the public transportation, but also provides mobile consumers a more efficient way of purchasing in the store which are equipped with UnionPay and QuickPass contactless POS terminals.



To use the service, subscribers with NFC-enabled handset need to switch their SIM card with the new one that allows them to connect their phones to their bank accounts and download network's mobile wallet app.

The telco and the banks are already working with NFC-enabled handsets such as Samsung's Galaxy S4, the HTC One and certain Huawei and ZTE models to integrate the system. By September 2013, there will be 20 handset models that fully support the system, China Mobile said (Phneah 2013). According to GfK China, about 7 million smartphones with NFC functions were sold in the first quarter this year, up 551 percent,

and there are 1.3 million NFC-enabled POS terminals in supermarkets, stores, subway stations and restaurants (China Daily 2013). These devices will provide fully support to our Nearu app.

However, security issues directly affect the customer confidence to a new innovative app. The news reported that if customers loses their mobile phone they can dial 10086 to report the lost of mobile wallet. The customer bank account will be frozen until the customer asks for to be unfrozen, however the money on the vertical transit card is ministered independently by the communication card company, and this will not automatically be frozen, but they are working together to improve the security aspect of the transit credit (BJT 2013).

With the expansion of mobile phone market and development to new and improved mobile devices, mobile payment looks that continue to grow in popularity. There's no doubt that it will change the landscape of telecommunication industry and the future banking and shopping.

Launching the App in the Chinese Market

In 2011, Apple's App Store and Google's Android Market achieved a combined 20 billion downloads. However, eight out of the top 10 largest iPhone AND Android markets are not English-speaking, according to Flurry Analytics (Yeung 2012). It's totally fine for us to start building the app in English, but if we want to tap the huge global market, taking our app international is no longer just a nice-to-have strategy, but a must-do.

We've seen the huge potential of Chinese market and we have made China as our third-step market, in order to launch our app successfully in Chinese market, we've made some strategies according to some suggestions of industry professionals.

Level 1: Start Small

We don't have to start by fully committing all our resources to support an international audience. Kick things off at the most basic level: Simply translating our app market

description and launch in few district like what JinJin did to test the water. It's possible that our potential users in China don't know our app exists because they don't perform searches in English.

Also, we should keep in mind that we need to optimize our app title, market description, as well as change log and search keywords based on local language and cultural requirements.

Promoting our mobile site - Advertising is everywhere, so there is no easy way to ensure our site will be noticed. We'll increase your chances significantly if we get a good social media presence. If our app strikes a chord with Chinese users, it will spread quickly via social media.

Mobile advertising - The Chinese mobile advertising market is beginning to take off in China, though analysts estimates for how large the expenditure might be have been in 2012 vary considerably from \$196m (eMarketer) to \$890m (iResearch). There are options for companies to promote their site via mobile search advertising and mobile display advertising on mobile sites and within mobile apps, via ad networks. The dominant ad network for in-app advertising is believed to be Google's AdMob, according to iResearch.

Search - When optimizing our site for search engines, Baidu is the dominant player (though it is not as dominant as it in the online search market), accounting for about 50 percent of the mobile search market in China, according to Morningstar Research. 80 percent of Android smartphones in China ship with Baidu, rather than Google, as the default search engine. Note that optimizing for Baidu is different to Google. The most notable difference is that Baidu places more emphasis on quantity of links/backlinks from to the site than Google, whereas Google places more emphasis on quality of links. The distinction between advertisements (paid-for search results) and natural search results is less obvious on Baidu than Google; and ads account for many top rankings. So, some experts argue, it's easier to buy a high ranking on Baidu. While the Baidu dashboard will look fairly familiar to search marketers used to purchasing search ads on Google, and much of the same SEM logic applies, it is still important to enlist the help

of a Chinese expert.

Other ways to promote your mobile site:

SMS – There are fewer controls on SMS-based promotions in China than in the West and it is used by many businesses, whether or not the recipient's mobile number is obtained through legitimate means.

Quick response – QR codes are common in a lot of advertising around China and are particularly popular for giving people a quick link to a business's social media pages on Sina Weibo or Weixin.

Level 2: Localization

The W3C defines localization as the adaptation of mobile application content to meet the language and cultural requirements of a specific target market. This includes numeric, date, time and currency formats, symbols, icons, colors, text and graphics (Yeung 2012).

As soon as we localize our app description, we should start closely monitoring downloads statistics in local language and Chinese market. If we notice a significant increase in downloads, it's time for us to start thinking about localizing the app itself. Offering our app description in Chinese will likely drive additional downloads, but localization of the app will drive the next level of engagement.

App language localization - Chinese smartphone users are very sensitive to app language. In a Distimo report from September 2012, 73% of free downloads in the top 200 most downloaded free applications in China were those supported by the Chinese language (Zacinshanghai 2013). In addition, compare with iOS users, Android users in China generally represent a market segment which is less likely to have a working knowledge of English or exposure to foreign products, and so more likely to have a strong preference for Chinese language apps. For these reasons, we can expect that the proportion of downloads and revenues generated from Chinese language Android apps in China to be even greater than for iOS apps (Zacinshanghai 2013).

However, the Chinese audience won't understand what we want them to do with the app if we simply plug the app into Google Translate. We need to properly translate the app into Chinese by a human. More specifically, target the areas such as text string, metadata, launch tips, push notifications, help tips, privacy policy, end user license agreement, etc. when localizing to Chinese.

Layout and navigation localization - Moreover, localization is about to make our app useful to local people, Chinese people often solve problems and make decisions differently than a Westerner. App navigation that might be intuitive to a Western visitor could well be confusing to a Chinese visitor, so it is essential to test both the layout and navigation thoroughly on native Chinese people.

App stores - Chinese users prefer to use third-party app stores instead of official app stores such as Google play. There are a big number of app stores in Chinese market. It's difficult for us to cover all of them, so picking one or a few popular app stores with a significant number of users is important.

Stay on the right side of the censors - The Chinese Government has an army of censors, and all the major search engines and social media sites strictly comply with Government regulations and guidelines on what they can show and what should be removed. It isn't difficult to play by the rules. Since our app is not political focused, but local business focused, so our app won't run into difficulty. However, our app involves lots of interactivities with social websites, and social media is becoming increasingly important

to Chinese user, the popular social websites in China is completely different with the world outside China. Facebook, Twitter, Youtube and many other social website have no space in Chinese market since they are all blocked by the Chinese censorship. Which social website to choose is dependent on what our target market is, but the top Chinese social-media giants that we can't afford to ignore are:

- Sina Weibo is the leading micro-blogging site - it's a cross between Twitter and Facebook - with 400m registered users, of which 288m access via mobile (according to Want China Times). Demographically, Sina is most likely to align with high income, educated urbanites.
- Weixin (known outside China as WeChat), is the fastest growing messaging provider in China with around 300m mobile users (according to Tech in Asia).
- Renren is China's equivalent of Facebook and holds appeal with younger Chinese.
- Tencent Weibo is a rival to Sina, but is more popular in smaller cities in China.
- Kaixin is a social network with a strong focus on social gaming.
- Qzone popular for blogging, diaries, photos and music.
- Douban is network focused on book, movie and music reviews.

Level 3: Internationalization – Building a Local Team

When we finish localizing our app into Chinese and are seeing amazing uptake in China. It's time to go even further and start building a team there. We will need to dedicate resources to make sure all the elements surrounding our app are fully accessible to Chinese audience

Internationalization is the design and development of a mobile app that enables easy localization for target audiences that vary in culture, region or language (Yeung 2012). It's no longer just about source code or app content; it's about everything that surrounds the app. Ideally, local language alternatives for the website, social media and so forth are available for users. In order to do this successfully, we need a dedicated team that can operate at a local level.

Building a team in China is definitely a big commitment and it can take vital resources, but when done right, the returns can be immense. What we need to do are localize our company website or blog, localize social media marketing strategy, localize user acquisition strategy, hire local marketing support, hire local public relations support, hire local customer service support, hire local legal support, apply for local patent (Yeung 2012).

Chinese Market Conclusion

For a very long time, cultural barriers, privacy concerns, fragmented app distribution ecosystems and the need for localization prevented most app developers from testing the Chinese market. However, as China takes over US as the world leader in iOS and Android device activations and considering its huge smartphone user base and smartphone penetration, China can no longer be ignored by any app developers; many global brands such as Evernote and Groupon already took the action of entering Chinese market.

Moreover, evidence showed that our app meets the needs of Chinese users and has privilege advantages to the competitors. First of all, e-commerce apps are very popular in China, especially for female users. No matter for the retail stores or the consumers, they are both familiar with the similar lifestyle service and used to use such apps in their daily life, Dianping and many other existed apps, which have gained numerous users are good examples. But compare with those apps, Nearu has more integrated and more advanced functions that none of them has.

On the other hand, we are facing many challenges at the same time. Chinese market is huge and beneficial, but it's different with the rest of the world, we have lots of work to do in order to sit well in the place. For instance, our app involves many interactivities with social network websites, while none of popular social websites in China is familiar to us, this is just one issue of localizing our app, besides the language, interface localization. And there are many third-party app stores; it takes time and energy to find

out which one to choose. Building a local team will also be a big commitment and it can take vital resources. But when done everything right, the returns can be immense.

Industry Analysis

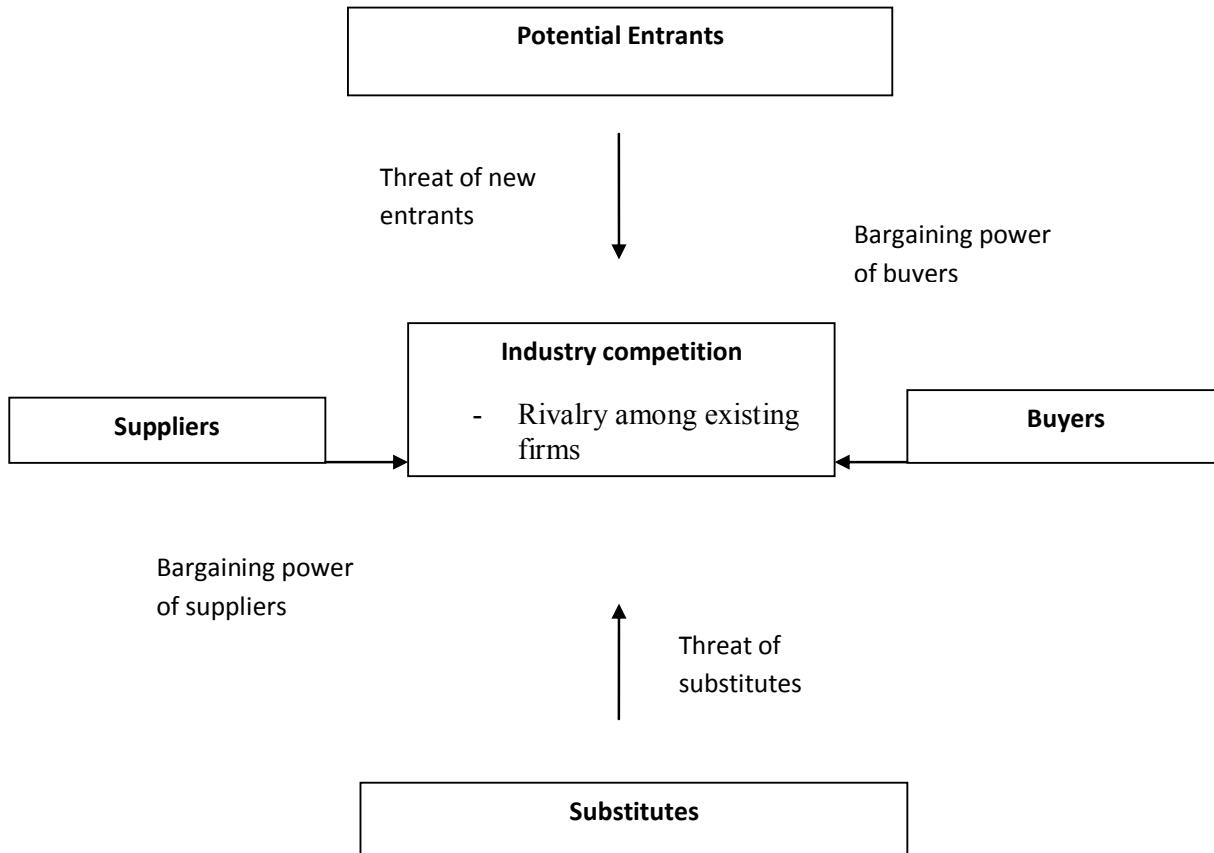
Companies dwell and implement the porter's five forces which are listed below which was originally developed by Michael E Porter in his first book named Competitive advantage in 1980. Our company will use this to try sustaining a competitive advantage in the current market/industry.

Porter's five forces model

Existing competitive rivalry between suppliers

- Threat to new market entrants
- Bargaining power of buyers and suppliers
- Threat of substitute products (including technology change)

Porter's five forces model provides points under each main heading, by which companies can help, broaden as well as make their competitive analysis position sophisticated.



Industry rivalry - Basically this occurs when firms within an industry feel the pressure or the opportunity to enhance their existing market position. High intensity of rivalry within an industry results from different structural factors:

- Large number of competitors
- High fixed costs
- High strategic relevance
- Little differentiation between products
- Low growth rate of the industry
- Excess capacity

Large number of competitors - numerous competitors have been in a given industry or business sector, this may force individual firms to help make a big competitive move to help with brand awareness and reputation e.g. by lowering the prices of products/services. This is due to the large number of competitors; furthermore the internet has reduced the importance of geographic boundaries that traditionally limits the number of competitors within a region. Our rival been shop kick (is a shopping app for smart phones and tablets that offers customers rewards for walking into stores making shopping experience easier and better).

High fixed cost - such as extensive physical infrastructure creates strong pressure to fill capacity, even at the expense of having to cut prices. The internet has made it possible for ratio between fixed and variable costs shifts to become more towards fixed costs. Nearu project, the software has to be implemented and initially has high costs, rolling out to a different market like China their market is comparatively cheap. Shop kick has the market share in US at the moment offering the app for smart phones free to users and everyone else. The way it works is that the customer purchases a good/product, if the customer pays with visa or MasterCard and then the customer collects more kicks for purchases, also by walking into designated store that is programmed with the app the customer can get "kick" points.

High strategic relevance - This is where rivalry increases when firms have a strategic stake to succeed in a given industry. Example will be shop kick who are our rivals they've been in the US market since August 2010; they've grown as a company seeing them gaining 70 more brand partners. Nearu is only a starter company who wants to claim markets in different countries such as China, Europe and some parts of the Middle East due to its big population especially China.

Little differentiation between products - Shop kick products works offering points to customers by scanning the product barcodes or QR codes using a device's camera. While Nearu uses NFC tags where most items shared by the company, it is picked up by a customers phone they can browse and buy instantly while getting their points reward. Nearu took things a bit differently in this situation which results to more or likely more commodities.

Low growth rate of the industry - Shop kick has been around for over 2 years+ now the company has generated \$200Million for its partners, whilst Nearu is a kick starter company using similar product but applying more application to the product to make it unique and have a little differentiation compare to other competitive rivals. With the recession, slow-growth will be likely to affect the company's funding but it been a new and a technology based product it should pick up.

Excess capacity - The internet has become a huge online platform for some many commercial uses; this is why companies like Shop kick, Nearu and many other companies are embracing it. This is going to lead to high competition.

Threat of New Entry - Lately, barriers of entry determine the threat of new competitors to enter the market segment. Nearu been a new entrants, and bringing new capacity and the desire to gain market share within the market industry has two negative effects on the attractiveness of an industry. First, Nearu are hoping to take over market share from the likes of Phlok and Tempster, these are our rivals in the Irish location based market.

Secondly, the bid down of prices between rivals in the same market space, which in will see reduction in profits for these current companies.

The impact of the Internet on barriers to entry, however, has been unsure than it has been initially assumed, when it was commonly thought that the Internet would wipe out most barriers to entry. In general, high barriers to entry result mainly from the following factors:

High fixed cost could discourage many potential entrants because they do not have the required capital and/or the willingness to invest large amounts of money into a risky market entry.

Trust and brand loyalty are essential for customers acquisition as we all know and retention. Nearu been an online business based company will have to invest heavily in marketing activities to promote and boost our company's image brand. Building trust is a necessity and could be difficult for online businesses, example will be in case of any occurrence or problems, customers do not have a nearby physical branch that they can go to or a customer adviser with whom they can interact with/to face-to-face.

A steep curve allows a firm to reduce its cost structure quickly or to find ways to create more customer benefits. This section of barrier of entry allows any competitor that wants to move into an industry will be in need of having to accept low returns while it goes through the same learning experience as different rivals.

High switching cost and strong network effects helps a new entrant to keep its customers, even if the new entrant offers higher value. The essence of doing this is that there could be an effective deterrent for many customers to move to another service/company even though the latter offers higher value.

Strong intellectual property protection is necessary for firms that sell products with high development costs but low reproduction costs. This is the case with digital goods these days such as music, video and software. Practically intellectual property rights are

not enforced harshly; barriers for new entrants are lowered, thus allowing companies to push cheap, pirated copies into the market.

In general, access to build platforms with technological tools has been made available and easily accessible of late, this should give a boost to the product and service of the company in terms of barriers of new entrant. Due to the low rate in investment capital that is required to build a location based service stages during the economic barriers to entry are low.

Threat of Substitute products

Location based service is still growing as of today and will continue to grow due to the different application been brought out that focuses on location with built in GPS. So the intensity of pressure from similar products within this market has increased and will continue to increase. From the looks of the location based service market, the availability and quality of substitute products increase, so therefore profits that is generated within the industry tend to decrease. The Internet has played a huge part in this, there has been an increase in the pressure from substitute products, as it tends to increase the selection of products available to customers. However in this case, larger players are always a threat as well as products that have been in the market for a long while with good brand reputation.

Bargaining powers of buyers and suppliers

The bargaining power of the buyers tends to be higher than that of the supplier, but only if industries show the following characteristics:

High concentration of buyers, one important function of many B2B e-marketplaces is aggressive buyers. This forms a sort of relationship with the suppliers. Strong fragmentation of suppliers, it is about the pricing war/power in this case of the whole industry, trying to gain market share in the industry by cutting prices of their products. A high degree of market transparency, this allows buyers get to work on similarity that is been offered by different suppliers. This allows customers to have a variety of option on finding the best deal from suppliers. Products are increasingly becoming

commodities, resulting in little or no differentiation between different providers. Its all about the pricing in this case, it does not require after-sales service are especially affected by somewhat percentage of market transparency, since customers can then safely choose the lowest price provider. Low switching costs and weak network effect; this makes it easier for buyers to change suppliers. The bargaining power of consumers who are basically the end users, the usage of mobile app space is high. People are aware of prices and as well as privacy issues who are also empowered by different apps depending on the looks and what they do. Of late, developers have integrated location features into most app on the mobile device.

Competitive Advantage

Nearu becoming an e-business venture, it has to be amongst the technological environment of significant importance. Lately, technological innovations (such as the Internet or wireless devices) led to the emergence of new market opportunities and business models. This location based app is a great idea integrating the Internet and GEO location based to be able to gather information on ones environment, the Internet/3G had to be integrated into this because the network infrastructure of the Internet has changed dramatically over the last few years. Especially with the spread of the broadband Internet connections has led to an increasing number of people spending more time online and allowed richer content to be created and viewed, in return it has made things more easier for new start-ups (e.g. Nearu) to create new service sites based around user-generated content.

Much attention has been paid to the evolution of new technology standards for wireless devices; this includes the security features for mobile phone.

As we go along, people are will worry about privacy issue but it will get to a point where privacy will be sold by individuals themselves and the location market is growing substantially that offers consultancy services to app developers and users on location integration and location analytics.

We aim to go global by offering our service to specific age group making sure the app delivers the mission and fulfilling the vision. Starting off in Ireland will give it the business a boost because Ireland has been put on the technology map for a few years and is still going on for years, especially the co-operation tax been low at 12.5% which gives us an advantage, the usage of smart phone has increased over the years giving people the opportunity to access their email and any digital task via their mobile device online with the help of 3G provided by each carrier provider in Ireland and the 4G slowly approaching its way to Ireland mobile networks.

Nearu is trying to dominate the UK markets by implementing most features most successful location based app don't have, as well as targeting the right age group and the most populated places to make sure we gain access to the market by breaking different barriers of entry to this market space.

Key Points -

- Nearu has great potential entrant into the technology industry
- Phlok is one of the biggest competitors in the industry, but Nearu adding a few extra implementations to make it stand out
- We aim to hit the Asian market due to the population which will increase demands
- Financial funds could be an issue on getting capital for start up
- Partnering up with one of the best to make sure the app have a good appearance as well as a good recognition

Competitor Analysis

UK Market

The UK market for location base is more advanced than that of Ireland due to the population there and increase in innovation. Nearu is a start up company as well as app, also integrating flaws of other app (competitors) into our app just to make it significant and unique. As mentioned in barrier of entry and industry rivalry, we aim to cover countries that have large population such as China and UK as well as Ireland because it's the home town of Nearu. It would be great implementing/testing the app in Ireland because there isn't much in this market segment because competition is low and this type of market needs to grow within Ireland as a growing innovative country.

Foursquare - Foursquare encourages users to check-in at locations in return for virtual badges and points, it as well works across many mobile devices and businesses can offer rewards of their own, currently for free. Finally, it helps you keep up with your friends, discover what's nearby, save money and unlock deals. Businesses are now using Foursquare to offer vouchers "check in 10 times and get a free starter". With any offer that the company provides, it is important to understand the consumer and the platform of the company's users are on so that they are able to offer the right promotions.

Groupon - Groupon serves 500 markets in 48 countries. With Groupon the app is divided into three sections for users to make it more enticing which is get it, share it and enjoy it. Get it which allow users to check their email, social network accounts feeds for daily deals on local businesses. Share it this allows Groupon to be more fun when it's being used with friends. Pass along deals by email or broadcast them to your social networks. Enjoy it this allow users to print their voucher or bring it up on their mobile device, and then present it at the business to get their deal.

Google Places - Google places helps users discover nearby places they love, as well as quickly search for restaurants, cafes, bars and other places, while on the go. One can also rate the places they go to thanks to this app, and finally they get to rate places but by giving places they've visited recommendations based on the places they like and recommendations such as word of mouth (Failte Ireland 2012).

Instagram - With Instagram you can snap a picture, choose a filter to transform its look and feel, and then post it on the application to share with friends and everyone else by either hash tagging it or tagging someone on the picture. The user gets the chance to share on social media such as Facebook, Twitter and Tumblr etc. it is basically the reinvention of photo sharing. It helps bring the art of a picture thanks to the filter options provided by the app. It stores location its all about location on this, which helps promote the vacation reservoir for free which is great.

Out of the big four supermarket in the UK, Tesco, Sainsbury, Morrisons offers a scheme based around customers purchasing fuel from their filling stations. Tesco as known both in Ireland and UK offers loyalty points through club card by giving out discounts, but there has been complaint that Tesco don't offer money in terms of giving the value of the customer's money spent. People roughly equate to a 1% discount, some offers can increase discount by a much as 4 times for certain rewards. Morrisons operates "Morrisons Miles", whereby customers earn vouchers based on fuel purchases. Unusually, customers' personal details are not collected so purchases appear not to be tracked. Vouchers are delivered at point of sale. Boots loyalty scheme gives a cardholder 4 point for every pound spent in a boots store under normal shopping circumstances and is printed on a voucher. These vouchers enable money off specific purchases, extra points for specific purchases, or money off or extra points when spending has reached an amount specified on the voucher, or other offers such as double points on either everything or specific products.

Conclusion

UK is vastly growing in technology especially with the 4G been introduced and rapidly growing; our company Nearu could embrace that using it as an opportunity into the barrier of entry of the UK location based market. Most of the location based application mentioned have surpassed our brand when it comes to brand and reputation, but our product is distinctive and unique having more features than more of these application listed above.

US Market

Shopkick - Shopkick is a company in Silicon Valley that created a shopping app for smart phones and tablets that offers customers rewards for walking into stores. It uses points called "kicks" which are usually awarded when users walk into participating stores.

If Nearu ever thought of evolving to the USA our main competitor will be LoyalBlocks. LoyalBlocks is an automatic loyalty club, business are asked to register themselves online, the company purchases the business app, they get to put their device whilst running the app at the LoyalBox Station at the given location, the business defines the rewards for their customers. As soon as your members have downloaded the LoyalBlocks App to their mobile device, the system will automatically start recognizing them, punching their mobile punch-card and sending tailored tokens their way. The business will be featured instantly on social network as well as the businesses' social media platform will be featured instantly giving people to know about the business/company and their location and significantly spreading the outreach of the company.

Irish Market

The key competitors in this market segment are Shopkick and Phlok. Below will be identifying their market and the services and product they offer.

Phlok - Phlok, a social platform that help consumers' access great deals in shops and restaurants, the company is based in Ireland. Their aim is to try connecting local firms with local people and users to shop locally. The company was founded on March 2012. The cloud which is a company that is based in the UK with the resource of helping transforming the mobile broadband experience, they focus on changing how users experience Wi-Fi when they're on the go. As we all know the 21st century has embraced technology and recently the new generation of mobile devices has created an explosion in demand for wireless connectivity.

Tempster - Tempster is a restaurant discovery app, developed by foodservices entrepreneur Ollie Fegan, the app allows restaurants and clubs to instantly promote high-value offers on same-day reservations, that isn't fully booked, or if there's any cancellation. The application was launched in early February 2013; the app is uses GPS technology to identify the user's location and display all available offers in nearby bars and restaurants. For example, this app allows restaurants to modify their attraction and offers to customers, if the restaurant is quiet, as mentioned before the company can try to bring in customers by posting offers such as discounts or complimentary meals or drinks. The company got a funding of €100,000 from RTE Dragon and also Enterprise Ireland, and the company is aiming to go global expansion through partnerships with international backer (Tempster 2013).

Reveal - This app reveals aims to make the travel experience even more enjoyable. The user can search through cities worldwide by creating a plan finding their spot and building a vacation wish list; as well as sharing the memorable experiences, users get the chance to share their vacation experience on Reveal and earn points and badges; find things of interest, Reveal tends to cover all area regardless or where the user is

flying to, the app helps locate restaurants, bar etc.; Reveal tailors the users uses to bring together what suits them better or places of their interest. This app is out during winter time, this gives Nearu a chance to be ahead of this competitor in terms of market share in the market industry (Reveal 2013).

02 Priority Moments - This is a service from 02 that gives users information about nearby offices and experience from the brand that matters to the user straight to their mobile device. It involves different variety of discount such as cinema tickets, fast food restaurant etc. it gives exclusive offers to different things. But this opportunity exist for 02 customers only, it pays users with vouchers when they decide to purchase the product and uses social media platform as a form of awareness. The 02 priority moments is partnered up with over 54 different stores to be able to allow the exclusive offers been provided or noted on the app possible. These stores aren't just in one category it varies from entertain, health and beauty, travel and foods and drinks etc. giving you which store provides the better offer.

Loylap - This is a free mobile application for medium sized businesses. The company provides this app for SME's to be able to afford technology to compete in the new digital business age. This system gives business the opportunity to build their loyalty system and gives businesses option to work together by sharing loyalty rewards. It has been proven to reduce the cost of rewards on a business's bottom line. For example, if a customer spends €100 in a local dentist, they can immediately walk across the road to redeem their loyalty points for a free lunch. In this case it increases the effectiveness of a loyalty system, without any additional cost, with the end effect of keeping customers shopping local.

Indirect competitors - Indirect competitors are other loyalty schemes such as Tesco, Spar, Dunne stores, boots pharmacy and Superquinn etc. Loyalty scheme in Ireland are majorly offered by super markets around the country, with Tesco you earn 1 point which is 1 cent for every euro you spend once it adds up to 150 points it then generates to €1.50. Tesco does not only offer points through buying groceries but also petrol as well as through their Tesco mobile by topping up. This system is the exact same as

Dunnes store except the petrol and mobile phone. Some of the better schemes allow you to spend your points in a variety of ways. For example in recent years Tesco has expanded what you can spend your points on. Now, in addition to getting money off your weekly shop, you can avail of offers such as travel vouchers for Irish Ferries, magazine subscriptions, activity days, and restaurants. If you go for this option, you will get four times the monetary value. Superquinn, they offer exchange on their points they offer customers for One4all gift vouchers or donate them to children's charity Barretstown, while by customers signing up to Bus Éireann's loyalty scheme, customers can get a range of discounts, such as 15 per cent off the Irish Rugby range at Elvery's or two-for-one entry at Funtasia.

Conclusion

The popularity of e-commerce and m-commerce has been demonstrated throughout different stores like tempster, 02 priority moments, reveal and loylap. Today's "checking in" culture is a rather niche activity for a sub-segment of people interested in mainly social media. "Checking in" allows brands to recognise the customer's identity, before they make a purchase decision. With a bit of imagination it is easy to see the connection within the brand – and a chance for brands to gain a deeper and more profitable customer relationship. According to Juniper Research, says that nearly 1.5 billion people will be using location based service by 2014, with a global market worth \$12.7 billion worldwide. With technology in the UK market growing and increasing, studies shows that 69% of users in the UK would gladly share their location on a mobile device to receive relevant content. Location based service can be of use in so many ways, for instance to build awareness, deal distribution, traffic increases, and new performance measurements etc. In general, location based service is growing vastly and increasingly fast especially for businesses that dwells on apps and pure online businesses. People are sceptical about privacy but will come around it as times goes on, the majority of app on smart phones dwell on location which people will tend to come around to understand that it is important and needed for daily bases.

The user behaviour of mobile phone in Ireland and UK as well as China has become rapidly the primary medium to access the Internet across age groups, and across matured and emerging markets. Everything these days when it comes to technology is all about been smart,

- 77% of all Internet users accessed the Internet through a mobile phone
- 69% connected to the Internet through a smart phone, 37% through a net book and 28% through a tablet
- 76% of men and 78% of women used mobile Internet
- 66% used mobile Internet for personal matters compared with 21% for work-related matters
- 60% of those above 50 use mobile Internet against 84% of those in the age group 14–29
- 71% have concerns about data security

Ireland is on the map for growing use of mobile Internet so the user behaviour is great both in Ireland as well in the UK and China because they are technological countries. When it comes to sex, in Ireland almost an equal number of men (76 percent) and women (78 percent) among the respondents accessed the Internet on a mobile device. With Nearu we are focusing on quality because respondents have ranked quality of network as the most important factor in choosing a network provider for mobile internet access.

Chinese Market

Dianping - Ranking and review based sites entered the Chinese digital scenario at a reasonable early period; there are a big number of location-based coupon apps existed in the market so far. Dianping is a leading local platform in China offering local business search, user generated reviews, and detailed business information featured discounts, group shopping and other merchant services through Dianping.com and mobile apps. It was found in April 2003, Dianping.com was one of the first websites to provide reviews of retail businesses written by independent consumers across China. Powered by a large

and growing user community, Dianping.com offers a full spectrum of local business content and reviews of restaurants, boutiques, and entertainment, leisure and lifestyle services. In addition, Dianping.com provides a one-stop targeted marketing solution for small and medium-sized business using electronic coupons, online advertising and group shopping. To meet the growing demands of mobile users, Dianping has expanded into the mobile app space in 2009 to offer more integrated opportunities for brands that are willing to jump on board. As the name says (comments for everyone) it was born to collect feedbacks on restaurant services and sharing reviews with consumer community. It's the first third-party review site on local consumption service in China, also among the first ones in the world (half a year earlier than American site Yelp), and right now it is the biggest and the most used search portal on local and personal consumption service (Li 2013).

Dianping's headquarters are in Shanghai, with established branch operations in more than thirty cities all across the country now. As of Q2 of 2013, Dianping has got more than 70 million active users monthly. Over 26 million individual reviews have been collected, and more than 4 million local businesses covering over 2300 cities across China are registered. As of the same time, Dianping had more than 2 billion page views monthly, out of which, over 70% came from mobile users. Since inception of its mobile services, Dianping's mobile apps had accumulated more than 75 million unique users (Reuters 2013).

As the leading UGC (User Generated Content) platform on local and personal consumption service, Dianping always focused on consumption experience and personal communication. The app enables clients to check accurate and comprehensive merchant information, reliable customer reviews and great deals. The sign-in and sharing functions enhance the interactive entertainment among users. At the same time, the sign-in history and comments are synchronized with merchants' pages. Its main features are introduced below (all images displayed below are all from Android devices, the images may come from different versions).

Currently, Dianping is updated to version 5.8.1, it has combined the major advantages of Web 2.0 platform and offers an integrated marketing solution, and provides more features to the app in an effort to bring their users more superior user experiences continuously.

Since Dianping's mobile app launched in 2009, it has combined the major advantages of Web 2.0 platform and offers an integrated marketing solution, and provides more features to the app in an effort to bring their users more superior experiences continuously. However, as they enrich the app functions, the app interfaces become simpler and clearer. The home page consists of 4 main sections which are "search" (including "Nearby", "Shake Shake", "Search the City"), "Ranking List", "Membership Cards and Coupons" and "personal center" (which allows users to switch among different features such as group shopping, sign-in, personal central, etc). Each section will be illustrated in details as below (All images are from Android mobile device, the interface may come from various app versions).



Search Functions Interface

This location-based app enables users to search the restaurants, entertainment venues, coupons nearby automatically through "Nearby" function. Click "nearby" icon on the home page to enter next level page. Nearby page shows the location of the user and displays different merchant categories around the location, such as restaurants, café,

banks, parks, patrol stations, etc. The versions updated lately support voice recognition feature, which allows users to input the keywords by talking instead of typing. And the searching results could be sorted and filter again by changing the searching scope, categories and sort criteria.



Search merchants based on key words, commercial districts and merchant categories. Users can input merchant's name or address in the search bar, the app will display relevant results, the pictures, address, and price per capital in average. Besides searching by key words, users can also search by popular commercial districts and merchant categories.



Combine with the basic searching methods, Dianping recently published 2 new searching features - “Shake Shake” and “Search the City”. “Shake Shake” is a feature focus on restaurant searching. Users could set up their preferred cooking style, price range, and other conditions, then look for the suitable restaurants nearby by simply shaking their phones, the user get one recommendation each time, shake again to see more. This feature brings great fun for users while they looking for exactly what they want.



When the users are tired of “Nearby” information, “Search the City” provides the great deals all over the city; the information covers many life services. This feature allows users to setup their preferred conditions as well, including the target district, the merchant categories, the average price, and the way sort out the searching results. The user can also choose a location or select any location on the map to search the venues and information around it.



Another important feature is the LBS service function. The “Map Mode” option enable users to view the distribution of their searching results on the map, it also support route setting through Google map embedded in their phones. In addition, by locating the user themselves through GPS, they will see all the merchants around them, such as KTVs, pharmacies, ATM machines, café shops, retail stores, etc.



The announcement of e-membership cards is a milestone of Dianping's mobile platform. It was created for local businesses to interact with their member management, offering them more precise marketing tools and reducing merchants' marketing costs. The e-membership cards became available online in September 2012 (Reuters 2013). Consumers from 20 large and medium-sized cities across China are able to add e-membership cards of different merchants to their collection via Dianping's mobile apps by browsing through several local life and business categories, including restaurants, leisure and entertainments, daily necessities, barbers and beauty salons as well as other

retail services. Recently, Reuters released that the e-membership cards issued had passed the 10 million mark in only 265 days after launch. On May 28, 2013, the number of cards issued in a single day reached 130,000, an all-time high (Reuters 2013).

Different from traditional member cards which require an in-store application and need to be carried on one's person at all times, e-membership cards are easy to access, download and use. Consumers only need to open Dianping's mobile app to find merchants and add the merchant's membership cards to their collections to become the merchant's VIP member immediately, and enjoying a service of VIP level from a wide variety of merchants each time they buy that merchant's product or services.

By offering e-membership cards, local merchants are able to manage member preferences and set up marketing campaigns online. Merchants get access to a database containing the member's basic information such as name, gender, age, birthday and timestamp of when they selected that merchant's card, and then merchants can archive members' times of purchase, amount, preference and feedback to gain a comprehensive understanding of members' consumption patterns. Access to this information will allow merchants to customize marketing campaigns by selecting from an array of marketing tools according to the consumption patterns of different members. These abilities to customize will lead to a high number of members selecting of the merchant's card and to a higher level of customer loyalty.

E-membership cards also solve a basic problem of customer retention. Relevant research finds that 60% of new clients come from the recommendations from existing clients. In addition, if the retention rate among existing clients increases by a mere 5%, profits will grow anywhere from 25% to 85% (Reuters 2013).

Many top retailers in China have availed themselves of business opportunities brought by the e-membership cards and have made significant improvements in their performance results in less than a year. For example, the Shanghai outlets of China's national chain restaurant "Jiangbian Chengwai Roasted Fish" have seen its membership

number surpass 90,000 in just four and a half months after starting to offer its Dianping e-membership cards online. And these members are expected to bring in nearly one million yuan (approx 120,000 Euro) in new sales to its five Shanghai stores every month (Reuters 2013).



Besides getting membership of merchants' by adding their e-membership cards, customers can also get discounts by searching and saving e-coupons via Dianping mobile app. The coupons will be classified according to release time, popularity, district, merchant categories, etc. The user can download and save the coupon by sending it through a free message with the app to their phone. When they purchase, they just need to show the merchant the e-coupons on their phone when check out.



Online "group shopping" is another money-saving feature. Merchants provide cheaper price of the products or services such as holiday vouchers, aim to attract a big number

of buyers through the service. “Group shopping” has become one of the most used services, which also brought the biggest profit for Dianping (Li 2013). The company also published free reports on trends in each industry, which is also a way for merchants themselves to understand what's going on in the industry base on their user data.



Users can check the ranking list classified by different criteria. Use restaurants as an example, the app will rank the restaurants by customer rating and comments, the criteria could be “best taste”, “best environment”, “best service”, etc. Open the ranking page by clicking the “ranking” icon on the home page. There are three main categories, “best ranking”, and “favorite restaurants” and “best cooking style”, each categories has sub-categories, detailed classification allows users to find exactly what they need.



Recording the users' footprint and sharing experiences with "sign-in" function after the clients visit the merchants. They will need to rate the merchant, leave a short comment, and share the experience with other websites (currently, the app only support sharing to Tencent Weibo, Sina Weibo, and Kaixin). And for protecting privacy, the sign-in record or comments could only be seen by cronies of the user.



Comment is an important function of the app. This is the process of producing the user-generated content, and this information will help other users to know the merchants even before they visit the place. Use restaurant comment as an example, the comment part including an overall evaluation, taste, environment, service, and expense per capital, so other users will know the merchant somehow even before they go there.



There are more features were added to the app. The app now supports photo uploading, the users can upload pictures to describe the merchants or reply their friend's sign-in

records with a photo. The app supports registering with the users' other accounts, such as their QQ account, Weibo account, to save time for registry. The users can also make reservation, place group-shopping orders, save store, record browsing history, receive "badge" by signing in to get rewards or deals when meet certain conditions, etc. Dianping now tends to put bigger effort on an online-to-offline function, to enhance Group purchase and Coupon promotion service. When there's no Internet connection available, the users can still do some offline operation, such as saving e-membership cards, e-coupons, saving store to their collection, saving the draft of comment and then send it when connect to Internet. As we have mentioned above, right now more than 70% users got access to Dianping by mobile app. It is believed that in the short future, this number will grow to 80% or even 90%.

Other Competitive Applications - There are a great many apps existed in Chinese market so far, such as the mobile app from Aizheke.com, Yuele.com, Zhaoyoudian.com, mobile.ddmap.com, Buding.cn, Checkoo, etc. However, most apps which have similar concept with ours are developed domestically, only few foreign developed apps held in there like JinJin of Appconomy Inc.

Mobile app firm Appconomy, which is dual-headquartered in Austin, Texas and Shanghai, China, was founded in 2010 by Austin software veterans Brian Magierski and Steve Papermaster (mystatesman.com 2013). JinJin mobile platform and apps for large and small retails was announced by the company at the 14th China Retail Industry Convention on 01 Nov, 2012 (PRWeb 2012). Appconomy's retail solutions combine in-store guides, smart shopping lists, and personalized in-store promotions to retail consumers using Android or iOS devices, combined with retailer-specific loyalty plans and customer analysis that make the Jinjin platform an appealing choice for retail chains. The app is designed to consolidate multiple merchant rewards and membership programs into a single app. The software started in Beijing and Shanghai, and firstly launched on Android and hit the iOS days later.

The company choose China to start up (more specifically in Shanghai and Beijing) for some reasons. Firstly, although they've seen that there are plenty of choices for Chinese consumers to get discount coupons with their smartphone, but very few startups try to provide a lot more complex things like mobile payments or loyalty cards. The service they provide is much broader than the simple coupons that Chinese smartphone owners are now familiar with, which makes them believe they will be well positioned in the market. Secondly, they've seen the widespread smartphone usage and over 200 million people on 3G, they believe the Chinese shoppers are ready for mobile-based payments and loyalty cards like this, but it's always a challenge to bring in enough retailers and shoppers to make this kind of thing take off. Gerry explains that they're targeting major chains right now, with brands like Burger King and ShabuShabu fully on board for the loyalty program and mobile payments (Millward 2013). Moreover, the growth of mobile commerce in China has been startling and the demand for goods and services by a rapidly growing middle-class in China can't be ignored by global brands, JinJin app and platform meet a pressing need by retailers to provide mobile channels to directly connect with increasingly sophisticated smartphone enabled consumers – more than 350 million of which are in China, which exceeds the entire population of the US (PRWeb 2013). Appconomy won't reveal any JinJin numbers for now, but Appconomy general manager Gerry Goldstein said that the team now has five retail chains in each of its two target cities right now, and they also completed a batch of funding to remain focused on China (Millward 2013).

Business Models

Having looked at the main factors that will make the whole Nearu ecosystem, the team decided to use the framework developed in 2008 and put forward by Alexander Osterwalder, called the Business Model Canvas. The framework consists of 9 elements that are essential in the modern business environment and help the business owner make sense of the completed nature of the endeavour they are about to begin. The model consists of the following elements: Strategic partners, Key Activities, Key Resources, Value Proposition, Customer Segments, Channels, Customer Relationship, Cost Structure and Revenue Streams

Strategic partners - The main strategic partners for Nearu are Qualcomm as they are the developers of the Gimbal software developer kit which the application was built around.

Google maps are also a partner as the geo fences are mapped out on the service using their co-ordinates.

Social media sites like Facebook, Twitter and Pinterest will be used to help generate further consumer engagement for the retailer and help the app user to generate extra loyalty points.

Our app user base are essential in helping spread the word about Nearu either through word of mouth or through the social media sharing function.

The retailers are one of the main partners (along with the user base) because without their support and consideration the app could not succeed, so it important we build a strong relationship with them making sure they receive the best possible service.

Open Mobile Alliance (OMA) is the key enablers of mobile service specification standards that support the creation of interoperable end-to-end mobile services.

Open Geospatial Consortium (OGC) an international standards organisation responsible for the development of standards for geospatial and location based services (Appendix 5).

Table 3. Various consortia/organizations for location-based services.

Consortium	Description
Open Mobile Alliance (OMA)	<ul style="list-style-type: none"> ▶ Key enabler of mobile service specification standards that support the creation of interoperable end-to-end mobile services ▶ Consists of nearly 200 organizations including world's leading mobile operators, device manufacturers and network service providers. ▶ Addresses all the key elements of the LBS value chain which also includes those that are addressed by Location Interoperability Forum (LIF) and Wireless Access Protocol (WAP) forum. ▶ LIF and WAP are now part of OMA
Open Geospatial Consortium (OGC)	<ul style="list-style-type: none"> ▶ An international standards organization responsible for the development of standards for geospatial and location based services
Parlay	<ul style="list-style-type: none"> ▶ Consortium that develops open APIs based on their Open Systems Architecture (OSA) for mobile networks which provides functionality for authentication, authorization, and access to network services.
W3C	<ul style="list-style-type: none"> ▶ World Wide Web Consortium provides guidelines for mobile web best practices including navigation, page layout and content.⁷⁰
Internet Engineering Task Force (IETF)	<ul style="list-style-type: none"> ▶ Working Group provides guidelines for applications and services related to LBS
Organization for the Advancement of Structured Information Standards (OASIS)	<ul style="list-style-type: none"> ▶ A global consortium that drives the development, convergence and adoption of e-business and web service standards including LBS and Mobile Web.

Key Activities - The first activity is to ensure that all the main elements of our application platform are running smoothly because it essential that the Nearu app will function properly when launched. This will be done by testing the application across particular area of Dublin using a testing team. Once we have the conclusive evidence that application is working, we will present the app to local enterprise boards and town councils along with retail owners to prove that app is a good investment. We will listen to feedback from the retailers to ensure that every consideration is looked at. According to their recent study, Google's research shows that "41% of shoppers will turn to a competitor's site after a bad mobile experience."

The marketing activities will be a next step in the roll out of the Nearu application; this will be done through an engaging campaign that will turn the user base into advocates due to the usability, functionality and reliability of the application. The app will be

distributed for free across the three major app stores of Apple, Google and Microsoft by using NFC chip technology across a billboard campaign placed at bus stops and along the geo-fenced areas. The good word of mouth will also work for the retailers as they will ensure that further business owners will sign up.

The technical and sales team will become more important at this stage as they ensure that application is working to specification with our current users while searching out further retailers to sign up.

Key Resources - Having presented to a series of investors, credit unions and banks we were able to gain a sizable start up fund that will be used to help the business can pay a for a quality technical and business savvy team of programmers and marketers. The funding we be used to make the company able to meet the changing demands of the consumer and will be used to help the team change direction or pivot if needs be.

The quality of the software development kit that Qualcomm has made available will enable the app to stand above the competitors in the market due to the personalising features that gain the relevant consumer information from the user's phone and delivers relevant offers. When this technology is fully understood by our technical team the application will be able to engage the user base on a completely different to what is available on the market at the moment.

Customer Segments: - "The Customer Segments Building Block defines the different groups of people or organizations an enterprise aims to reach and serve" (Osterwalder).

The customers will be split into two segments, which will both retailers and consumers. The large variation in different types of retailers will mean a fragmented segment. Through our retailer survey we found that the three most popular stores where engaged in fashion, accessories and health/beauty, while twenty one other different types of retailers can be included in that segment. These others retailers included sporting goods, bicycle stores, jewellers, computer accessories and cafes.

The consumers segment will look at the millennial demographic which are consumers between the age of 18-35. As most of our research was carried out on this particular demographic, we found this demographic was the most willing to accept the technology as well as being the most connected demographic according a recent Eircom sentiment survey.

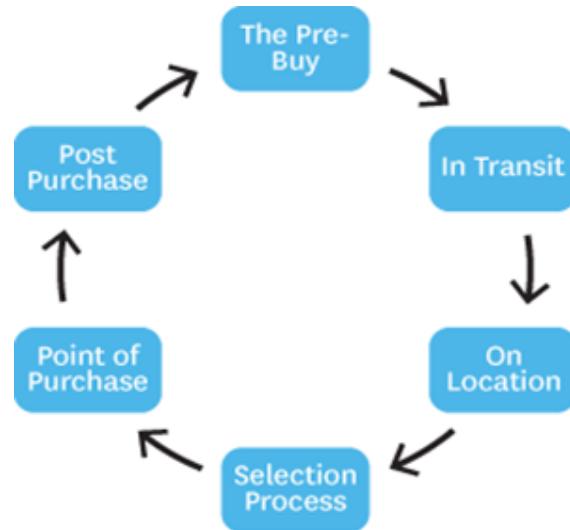
Value Proposition - “The value proposition building block describes the bundle of products and services that create value for a specific customer segment” (Osterwalder).

The technology is an essential part of product differentiation that is essential to making our application stand out. The product offers a range of technologies such as photo and image recognition along with the algorithms that generates contextual recommendations will set aside our application from the rest such as Phlok, Tempster and o2 priority. Having researched these companies we will use a different price plan that will also help stand out and make our more attractive to future users in the retailer segment. The price will be set at monthly fee of £25 which will be at least 40% cheaper than Phlok which offer there service for €40 to €45 per month. Another feature which creates value for the retailers is the different user metrics that help prove that their trust in the Nearu was justified. The positive return on investment will be shown through how many sales conversions that the push notifications from app have actually generated. The app will show from the user receiving the notification to the point of sale how successful their campaign has been. The retailer will be able to augment their call-to-action to ensure that they are hitting all possible bases.

The sound recognition is a feature that could embedded in a future iteration of the app. It will offer a new way of establishing how many people are actually hearing their radio advertisements because the technology will enable our app to recognise every company's radio advert. The recording will allow the user to gain further loyalty points when verified by the app while finding out exactly what demographics are recording and when is the best time to use radio. This information can be sold to the local radio

stations as accurate user metrics and listenership figures which are essential for revenue streams. To attract new users in the consumer segment we will offer the application for free across the three main app stores.

Channels - The touch points for a business would be based on the traditional sales funnel of awareness, evaluation, purchase, delivery and after sales but to reflect the changing environment that has been brought about by rise of the smartphone, the team decided to look at a new sales funnel put forward by Chuck Martin in his latest book called *Mobile Influence* (Martin, 2013). Here describes how people's habits have changed because of smartphones and how they are now present at every stage of the retail/shopping experience and the path to purchase. According to his updated *mobile shopping life cycle*, there is now six touch points or channels that must be considered and these include the pre-buy, in transit, on location, the selection process, point of purchase and post-purchase. While similar to the old sales funnel in some respects, the updated version now maintains that the modern consumer is *always shopping*; they are no longer about to go shopping because of the omnipresent nature of the smartphone.



This Mobile Shopping Lifecycle is attuned to the usage pattern of the Nearu and will help the company understand the various steps in which the mobile shopper takes.

The Pre-buy relates to the researching phase, when the person is sifting through the information about a certain product they are hoping to buy. According to Martin, mobile is a pull instead of push medium because the person is pulling certain info about a product towards themselves instead being pushed an advert.

In-transit occurs when the consumer is on the move and mobile with their smartphone. Using the geo-fencing features on our app, Nearu be able to locate our user base and know that they are close to certain shop that has items they have been searching for while in the pre-buy stage. According to Martin, shoppers that have made up their mind that they are buying the product or service are *Seekers*, while people who no specific purchase in mind but open to suggestion are called *Cruisers*. The user base of the Nearu app will be in constant flux between these two types of consumers.

The third step in the cycle is called *On-Location*, the consumer is now at the bricks and mortar unit and has been incentivised by the latest offers happening in that unit. The user's attention has been grabbed by the offer but still maybe considering buying the product. This is where our NFC sign-in lets the shop know that you have entered the building which can be a very useful if they are regular customers and the store has enough manpower to offer them assistance at the personal level. Research quoted in Chuck Martin's book stated that the CMO council found that "49% of marketers believe that mobile will help influence consumer interactions by providing a more personalised and relevant experience". This will help reduce showrooming and keep consumer's in-store longer.

The Selection Process or the Play occurs when in the retail unit and inspecting the product. This is where a proximity or *NearBuy Marketing* can be used as they are in close quarters to the item or service. Some stores have stated using to NFC tags to individual items to give even more information about the product, further incentivising them to make a purchase.

The fifth step is in the process is called *Point of Purchase or the Wrap*. Chuck Martin proposes that at this stage momentary marketing which is where Chuck Martin believes that even further influence can made in relation to purchasing...at that actual moment. As the Nearu iterates and starts to integrate different technology such as a digital wallet the Nearu could pay for the item using loyalty points they have collected. This way the company has the chance to enable user to pay on the spot of the item reducing the chance that they could change their mind on the way to the traditional check out.

The sixth step is the *Post purchase* where Nearu at the customer care unit making sure that they are happy with the purchase and possibly offering them further discounts or double loyalty points if they shop again within a few days. Ensuring that they are happy increases the chances they will give a glowing report about our app and how well they were treated during the retail experience, turning them into our brand advocates. Building lasting relationships is both essential for our app and retailer.

Customer Relationship - The profile that best describes our relationship with the customer would be Automated Services: A system similar to self-service but more personalised as it has the ability to identify individual customers and his/her preferences. An example of this would be *Amazon.com* making book suggestions based on the characteristics of the previous books purchased.

Cost Structure - The costs of the businesses include the salaries of the employers (software engineers, designers, marketers etc.), the IT maintenance (servers) and the contracts (if any) with the strategic partners, such as the digital map providers, Amazon cloud storage costs, Gimbal usage fees.

Revenue Streams - B2B research sales: Key consumer research data sold to radio stations €1000 per report. B2B subscription model: Subscriptions of €360 per year per retail unit rising to €450.

Table 6. A comparison of several business models.

Model Type	Key Features	Comments
<i>Subscription-based</i>	<p><i>Fixed subscription:</i> Based on a monthly charge with unlimited usage</p> <p><i>Limited subscription:</i> A combination of basic monthly charge (based on a fixed amount of content consumption) plus extra charges based on additional consumption beyond the fixed amount.</p> <p><i>Event or transaction-based charging:</i> Charge is based upon the use of a particular service on content (multimedia message (MMS) or downloading a song)</p> <p><i>Session-based charging:</i> Based on metering during continuous usage of the service or content, such as streaming media services with charges for usage or time</p>	Content providers have to work with WSPs who take control of major revenue and decide what applications and services they deploy.
<i>Safe income</i>	Based on subscriber fees and content providers' placement fees. Fees are derived from businesses that want placement of their ads with top priority and distribution across the WSP's network. Businesses do not share any revenue that content providers earn through the distribution of ads over the WSP network.	A hybrid model without one provider controlling network access and WSPs have less control over revenue generated by the content providers.
<i>Diversified revenue</i>	A combination of high quality content, applications and services and provides a bundled offering that is quite attractive to subscribers. Revenues are generated either through placement of ads or by receiving a share of advertising revenues and transaction fees. The content and service providers use WSPs distribution channel to receive these fees directly.	A more flexible model which has more upside potential for additional revenue generation. Collaboration among WSPs and content providers are necessary to provide a variety of services to the customers. Has some merit over others because it helps to generate additional revenue, with little effort of WSPs for media sales.
<i>Outsourced media sales revenue</i>	Revenue is derived wholly through sharing of all advertising and m-commerce revenue generated over the WSP distribution channel. Requires significant commitment and effective use of mobile advertising from WSPs. It is not only important for the WSPs to track the ads they serve on their network for appropriate revenue sharing, but also to monitor the occurrence of ads they serve to their customers based on their profiles, preferences and characteristics.	WSPs may decide what ads to serve to their customers based on their profile and user preferences. A greater commitment to wireless advertising from WSPs is necessary.
<i>In-house sales revenue</i>	Requires WSPs to have an in-house dedicated team focused on media sales, processing and management of mobile ads. Fully dependent on advertising and m-commerce transaction fees for mobile content acquisition and subscriber access.	In this case, a complete technology solution is required to support mobile advertising in ad development, management and services associated with it.
<i>Advertising by keyword auctioning²⁴</i>	Auctioning of keywords in dynamic web search will be adapted in the mobile search business and a variety of strategies being considered. Keywords will be used to provide location-based context-aware advertisements.	An unproven model that requires some suitable adaptation of online advertising platforms of the traditional web. It is not clear exactly how the revenue will be split among the WSPs and other players in the mobile ecosystem. ⁷

(Appendix 7.1)

Privacy

Privacy has become a something of a privilege these days as technology becomes more omnipresent in our lives. With all this human-technology interaction, petabytes of information are created every day, the possibilities of extracting patterns from these people is becoming a very profitable practise but where does it stop? For this application, where location, shopping habits and peoples willingness to share their private lives is critical to its success we must understand how best to work within the confines of the data protection laws within the regions where wish to launch, namely the Ireland and the UK, which follows the laws set out by the EU commission. The main laws which will affect our application are the data protection directive 95/46/EC, Article 5(3) of the ePrivacy directive, the European data retention obligation directive 2006/24/EC and Articles 12 and 14 of the data protection directive (DP Working Party 2013).

As social media and smartphone technology has increased the amount of data being produced, so has the chance of somebody misusing it for their own personal gain. The first noted uproar was when the consolidated. A Dba. file was found in Apple's I-phone by researchers Alasdair Allan and Peter Warden (Wicker 2012). This file contained the phones location information which mapped out the owner's whereabouts' every single day it was turned on. The people response was that apple where spying on their loyal followers with their every step closely analysed but this as it tuned was a mistake. The vice president of Apple's software development soon dispelled the file as no more than a means of accumulating data about the signal of the cell sites and access points so that they could better the speed of their location refinement, thus providing more refined location-based service (Apple 2011). Apple maintained that information was completely anonymised in a congressional testimony and so Apple where cleared of any wrong doing but this highlights people capacity to overreact to such technology and how it could be used compromise people's privacy (Harris 2012).

Other problems also exist in terms of software developers being thrown into the spotlight when their app is successful but who have no previous legal experience and

therefore the privacy policy is not does cover all the privacy regulations or they don't have any at all. The first step in the legal aspect of the app is at installation where our app must be installed with consent of the user, the next step is when the end user's specific authorisation is required when Nearu app needs to be made aware of the user's location so to send a push notification. The specific consent only pertains to the specific push messages we are send and nothing else, it does not give us the right to authorise third parties to send messages as set out in the EU directive (Meyer 2013). This is one of main selling points of our app is the end users privacy, which is to be totally respected at every stage of the applications duties. This means limiting the geo-location functions to only our application come into a geo-fencing and no other stage and that information is stored for a limited amount of time or not at all.

It seems hard to believe that some app's would not have a privacy policy installed in but according to research carried out by the agency *Future of Privacy* of app's in the stores of Apple, Window Phone and Google play that seems to be the case with only 61% of the top 150 app having a privacy policy (FPF 2012) When they analysed the applications in the Apple store that required your exact location, 12 out of 50 app's where used geo-location with 10 of those 12 having a privacy policy. The Google play store scored the same with 10 out of 14 app having a policy. One solution for developers that think including a policy is a waste is to have a short form presentation of the privacy policy which includes the most details of the policy described in six or seven short sentences with a hyperlink to the full policy at the bottom (Truste 2011). This is best suited to the Nearu app as the main usage will be on the smartphone and is carried out by mobile games developers *Zygna* across all their apps on every platform (FPF 2012). The consumer should also be offer more granularity which will also include in our app, giving them the options to turn off the personalisation feature of our app which collects the information within the phone so that it can personalised the offers sent in the push notifications. These sort of features are what the end user really wants as shown by a study by GSMA in 2011 which found that 92% of app users want to a more granular choice while 89% of respondents thought it was important that they know when their

personal info is being shared by the application and to be able to turn that feature off (GSMA 2011).

An example that show the power of data analytics and how it could be used the crunch the huge dataset's that people create when online is the case of Netflix releasing to the public a training dataset consisting "of more than 100 million ratings from over 480,000 randomly chosen, anonymous customers on nearly 18 thousand movie titles" as a means of creating a better movie recommendation system (Wicker 2012). Although Netflix described as completely anonymous, two computer scientists Arvind Narayanan and Vitaly Shmatikov from the University of Texas, where able to devise an algorithm that enabled them find out a lot more info than Netflix thought was possible. In their paper, "*Robust De-anonymization of Large Sparse Datasets*" they correlated the Netflix data with the Internet Movie Database (imdb.com) as the source of research; they were able to identify the Netflix records of identified subscribers, revealing their political preferences and other potentially critical information (Narayanan, Shmatikov 2011). such analysis would if integrated with a smartphone app would definitely cross over what Silicon valley analyst, Robert Scoble, calls the "freaky line" What would make our app avoid crossing such a freaky line would be the fact that Gimbal SDK has an integrated privacy policy would grants full control to the user to what kind of information is processed (Qualcomm 2013). Although this an important factor in persuading the older generation and the less technology educated section of market people like Sam Liang founder of software app *PlaceMe* believes that once we start using these types of technologies we won't be able to stop using them (Pappas 2012).

The debate on privacy issues and technology constantly changing the goals posts in terms of technology was really started by Facebook on a massive scale as they have changed people's ideas of privacy and how we consider our privacy. Ten years ago it would have been unheard of people putting photos of your family friend's up a public sites for all to see, put Facebook believe the trade-off is worth it as shown by the massive investment when buying Instagram for \$1 billion dollars (Constine 2012). The same could be said for the benefit that could be gained from sharing your location and

other relevant data to our application in exchange for greater saving when they are out shopping. There has been a raft of studies by companies looking to understand privacy in relation to location and rewarding consumers with discounts and other benefits when enable application to access and share their data. One of the most recent found that 51% of a selected demographic of 18-34 years said that they would be open to providing their private information through mobile as long as they received a “timely, relevant and engaging manner loyalty experience in return” while 56% said they provide their location (Hemsey 2013). These stats highlight where our market lies because are the most willing and open of all the demographics and also highlights the growing potential benefits for a loyalty programs can have if they have application that unlock how this age group interact with their smartphone while out shopping.

Risk Assessment

To understand the scope of the risk assessment for the Nearu enterprise, we started to look at the company's objectives and possible risks so that we could fully understand what could happen. Normally a company's objectives would take in a wide range of considerations including strategy, operational and compliance but they can also be more focused like when it relates to the function such the supply chain or new product. So risks could come in the form of a computer server crash or the recent credit crunch. Such factors can be included in our quantitative risk assessment but for this task, we will concentrate on the risks of launching a location based service such as the Nearu app. When looking at the PriceWaterhouseCopper guide (PWC 2008) on the different types of risk assessments we decided that three of the Customer risk, Product, Financial. Risks should be assessed considering the likelihood and impact of such risks in relation to specific objectives. Both should being measured on a three point sliding scale with likelihood rating of unlikely, likely and certain while impact will be measure using negligible, moderate and critical. Several factors have been identified as prohibiting the growth of location based services such as cost of wireless data services, information quality, industry-wide standards, pricing for LBS and its perceived value, customer trust, localization, personalization, and privacy concerns (Chin 2012).

Customer trust - According to Junglas, trust reflects a person's openness to be in a vulnerability situation according to the positive expectation towards another party's future behaviour (Junglas 2008). Trust contains is made up of three factors: ability, benevolence and integrity. Ability in relation to a mobile service provider could mean the necessary ability and attributes to carry out the promised operations. Benevolence means that service providers like for example Vodafone, being equally concerned with their own as well their customer base. Integrity relates to a cellular service keeping to their word and not leader their customer base astray. These three factors are crucial to the success of a location based service like Nearu. Research carried out by Siau and Shen (2003) found that trust is a main factor when hoping to engage the main user base in a

sustainable and profitable relationship. Conclusive evidence from seven other research projects in an online and mobile context, have found that the main factor many of why the user base does not agree to give personal information to a website is the lack of trust in the site (McKnight et al 2003). MacKenzie & Lutz (1989) found that "Credibility is the consumers' perceptions of advertising's truthfulness and believability." When carrying out an in-depth analysis of the attitudes of Austrian consumers' in relation to advertising via mobile devices, Haghrian and Madlberger (2005) found that credibility affects attitudes towards mobile device advertising significantly.

Likelihood: Likely

Impact: Moderate

Privacy Concerns - Some the latest research carried out in a mathematical context on a study on the role of push and pull Location based services using a privacy calculus lens using the behavioural model of *the Unified Theory of Acceptance and Use of Technology* (UTAUH) discovered that the level of user's privacy concerns were higher in push based location services than in pull-based LBS (Xu et al 2009). It concluded that privacy worries are affected by the level of control a user has. Users have more control in pull based LBS than in push-based LBS. Junglas et al (2008) has put forward five personality traits, which include extraversion, openness to experience, emotional stability, conscientiousness and agreeableness have an effect on privacy worries.

Likelihood: Likely

Impact: Critical

Product Localisation - Localisation relates to how aware of its location a mobile device is or in other words, the technical capability to determine the current physical location of mobile devices (Zhong et al 2004). The positioning technology used in location based services to determine the location of mobile users in outdoor environments can be

divided into three broad categories: handset-based, mobile network-based, and hybrid approaches (Steinfield 2004). The hand set approach uses GPS to find your location, while the network approach using the cellular data to track you. The hybrid approach could use your IP address and Wi-Fi triangulation along with the other two mentioned. (ACLU 2010) Junglas et al (2008) has stated that the fit between location sensitiveness as task characteristics and locate-ability and mobility as technological characteristics will determine user adoption of our Nearu location service.

Likelihood: Unlikely

Impact: Moderate

Personalisation - Seven studies in the field of location based services such as our own have put forward that personalisation is a deciding factor for the successful uptake of location-based services (Diao et al 2009; Osman et al 2003) The relevance and personalisation of material and information will be critical so to add value to the Nearu push messages that will be presented to our users due to their personal advertising nature (Baek et al 2012; Heinonen et al 2005). If we unsuccessful in this part of the application we will lose our customer base. Further research by Wolk and Theysohn (2007) discovered that relevance was the second deciding factor in the process of attracting people to websites, while consumers were found to be less worried about privacy when the message was personally relevant (Evans et al 2001).

The importance of relevance has been demonstrated in a number of studies investigating direct marketing and websites (Evans et al 2001; Heinonen et al 2005). “*Personal relevance can be enhanced by advertising which creates meaningful, experiential, and involved advertisements focused towards the recipient*” (Lastovicka 1983). Haghrianand, Madlberger (2005) have put forward that since mobile phones are carried by around and belong to you, relevant advertising to selected users would improve their attitude towards mobile advertising. This supports other propositions that personal relevance affects attitudes towards mobile advertising (Leppäniemi et al 2005). These studies lead to us at Nearu to really makes sure our presentation of the

personalised messages really connect with our user base every time that receive them while crossing a geo-fenced area.

Likelihood: Certain

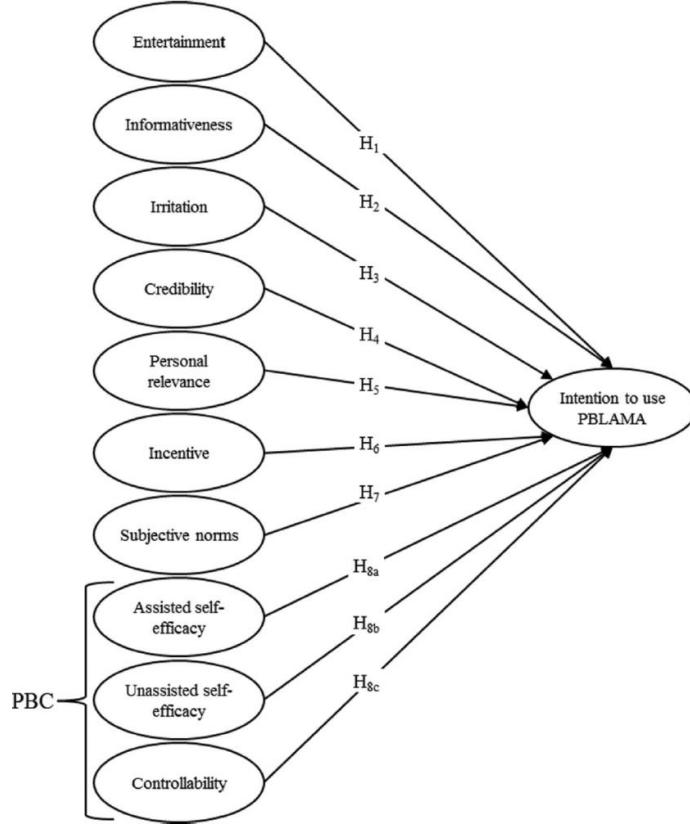
Impact: Moderate

Information quality - A great deal of research suggests that information quality is a critical success factor for location-based services (Lehrer et al 2010; Osman et al 2003; Chang et al 2007; Xu et al 2010). The results from these studies highlight that millennials are more likely to adopt our geo-fenced messages if they are informative, not irritating, entertaining and include some form of incentive i.e. our personalised deals and offers from selected stores near the users location. Others factors that important include peer pressure which was found to be a majorly positive role along with confidence of the user. The millennials or digital natives as they used to be called are early and substantial adopters of new communication technologies (Howe et al 2000, 2007). It is crucial to our success that we attract this demographic on a large scale. Digital natives are individuals aged between 16 and 33 who have grown up with information and communication technology as a part of their everyday lives and are now dependent on it for accessing information and communicating with others (Bennet et al 2001). Richards and Meuli (2013) paper "*Exploring and modelling digital natives' intention to use permission-based location-aware mobile advertising*" in which a survey of New Zealand students developed a conclusive models consisting of 10 factors that were crucial to the success of mobile advertising including entertainment, informativeness and irritation (Appendix 13).

Likelihood: Unlikely

Impact: Critical

Figure 1 Conceptual model.



Financial Pricing for LBS and its perceived value - Incentives and discounts are methods which are used to persuade consumers to accept advertising (Haghrian et al 2005; Leppäniemi et al 2005). Whilst no empirical testing has been completed in the mobile advertising context, the impact of incentives offered by brands and telecommunication companies need to be considered as a factor influencing the intention to use location based services.

Likelihood: Likely

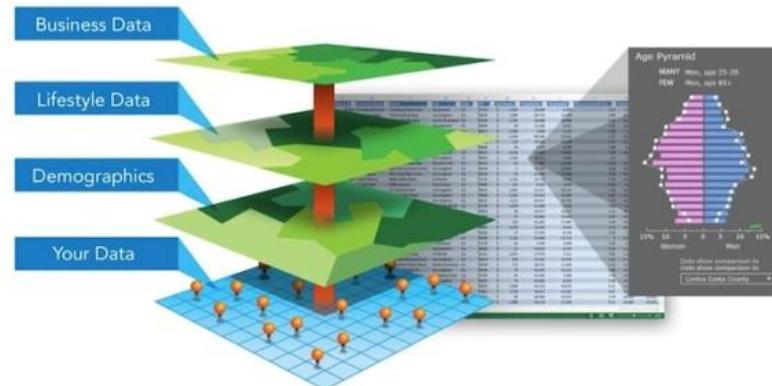
Impact: Moderate

Competitor Advantage - Not be able to analyse the data due to financial restrictions that we are receiving will be a major risk when will need to stay ahead of our

competitors. The use of data analytics is becoming even more important for businesses especially with in location based application such as the Nearu app (Appendix 14). Competitors analyzing GIS will enable them to drill down into a specific region or neighbourhood to run geo-statistical analyses. Analysts Killick maintains that location analytics can be used to predict current and future sales, and to identify sites for new stores (Xconomy 2013).

Likelihood: Likely

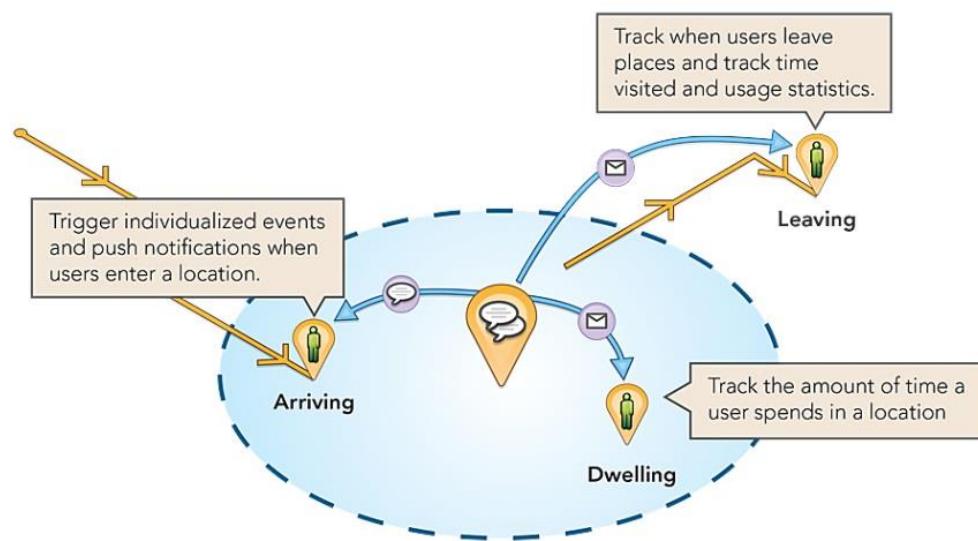
Impact: Moderate



Business and Marketing Strategy

Introduction

When we initially set out looking for a suitable idea to invest in we researched a series of technologies that would be moving into the mainstream and how these technologies could be used to good affect across the Irish and UK market. When we finally decided to concentrate on how near field communication's (NFC), context and location based marketing could be of great benefit to the retail sector, it presented a series of interesting ideas in which we could an exciting smartphone application. As the idea grew, we started to become more interested in what could be done with location based marketing and how Geo-fencing could be used to help raise awareness about the products and services available from small retail businesses and their stores (Appendix 2).



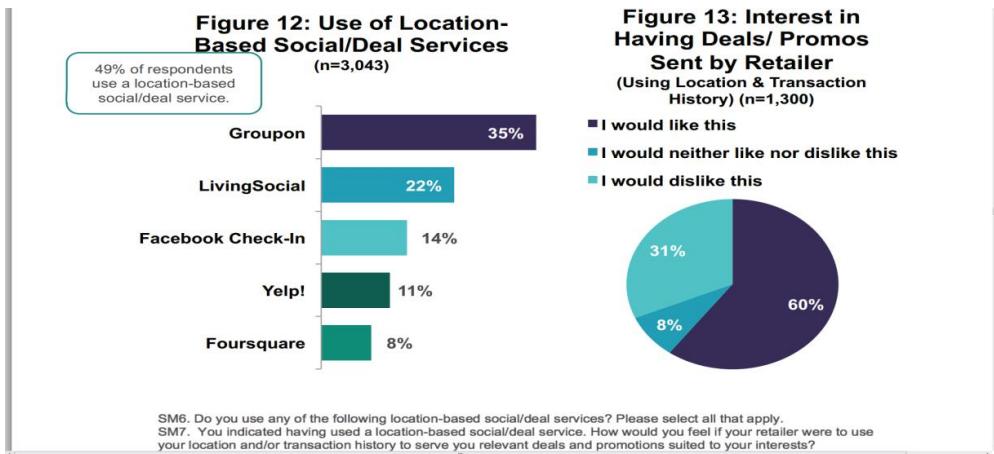
As I already mentioned in the market overview, the poor state of the Irish economy has affected the retail stores born in the boom but who are now finding it very hard to survive, so in the downturn lay opportunity. Our opportunity lies in the fact that people are permanently attached to their smartphone and are more willing to receive information

about products they are presently in need of, especially if the item was being sold at a reduced cost.

Loyalty Program

The next logical step was to figure out how we could keep people using our app after they made an initial purchase and came in the form of a loyalty programme, much like the Tesco example where people would gain points through their purchase behaviour. The idea of people needing to collect as many points to receive discount on a particular item collected through our app instead of the traditional plastic card with a magnetic strip. The chance to offer personalised messages through app would help motivate the consumer to consider the item and the possibility of converting this motivation into an actual sale if greatly increased when they pass through the geo-fence and therefore are closer to the retail unit. When we looked at the US location shopping app, Shopkick, that is and how they used various tactics like offering loyalty points for signing-in through social media, we were intrigued. Facebook will used to help the user base of Nearu to help generate loyalty point as posting on the retailer Facebook will generate loyalty points and create awareness. A study by UPS found that 14% of their respondents used Facebook sign-in while will 39% read a retailer's update like it was one of their friends posting on their social stream (Appendix 10).





The chance to offer a more unique way of generating loyalty points would help our app to stand out from the Irish competitor, Phlok which seems to basically have copied the basic premise of the Shopkick app, which has had massive success with similar tactics.

Product Differentiation

We wanted to give the best possible experience when using our app. Using Qualcomm's innovative Gimbal software development kit includes a lot more features than what's available on the Phlok app so we decided to take advantage of them so we would stand out from them. Location based information coupled with personalised feeds and a fully integrated social media experience define our application from the rest of the market.

Another feature we could have in a future iteration is the sound recording function that will let people record the sound off the shop's ad on the radio or TV. Our app will recognise the sound from the ad and then recognise that person has recorded it and give them more u-points, much like the way that the Shazam application recognises music that you are unfamiliar with. The need to accumulate points through these tactics will add to the our gamification leader table with the top shopper of every month receiving extra loyalty point for having the most photographed shop front or recorded adverts. These factors would add to the levels of interaction between the consumer and

the app, so helping the app understand the usage pattern and personality of the user. These usage patterns can be used later on to automatically recommend products which could be helpful to the user.

Marketing Campaign

The marketing campaign would be built around our innovative use of NFC enabled posters placed around the various geo-fenced areas which will us to help us distribute our free application among interested shoppers. The target market of the 18-35 demographic will need to be shown how they benefit from having our app and over time our company will be able offer exclusive products and deals which will they save them money along with features that will be fun to use. The importance of constantly great user experience within our application will hopefully generate a significant amount of positive word of mouth to help our application go viral across Dublin and beyond.



Nearu Facebook page (<https://www.facebook.com/pages/Near-U/602051699826047?ref=ts>)

The screenshot shows the Twitter profile page for @Nearuofficial. The header features the Nearu logo with a blue and white geometric design. The profile picture is a smartphone displaying the Nearu app interface. Below the header, there's a sidebar with links for 'Followers', 'Favorites', and 'Lists'. A section titled 'Who to follow' lists three accounts: SAPhightech, Jeet Banerjee, and MapInfo. To the right of this is a summary box showing 59 tweets, 91 following, and 25 followers, with a 'Edit profile' button. The main feed displays several tweets from various users, each with a small profile picture, the user's name, and a 'Following' button. On the left side, there's a 'Trends' section listing hashtags like #Tyrone, #TwitterSilence, #InspiringWomen, #JustinBieber, #CelebrityMasterChef, #LittleMix, #DoctorWho, #MrK1stGoodNow, Peter Capaldi, and Donegal.

Nearu Twitter page (<https://twitter.com/Nearuofficial>)

The screenshot shows the Nearu website homepage. At the top, there's a navigation bar with links for 'HOME', 'FEATURES', 'HOW IT WORKS', 'UPOINTS + U', and a red 'nearU' logo. The main content area has a teal background with the text 'High street shopping has never been so rewarding introducing Upoints from Nearu'. Below this, there's a large image of a smartphone displaying the Nearu app interface, which shows a store interior and various offers. To the right of the phone is a red 'DOWNLOAD APK' button with a white play icon. At the bottom of the page, there's a small '▼' icon.

Nearu website (<http://bit.ly/18VMFfO>)

Sales Strategy

After reviewing the best strategies to keep our staff numbers below ten while covering a greater of businesses across and Dublin we decided the best approach to signing businesses up to our endeavour was to hire four sales staff who which will be split in to two teams with team A looking after north Dublin and team B looking after south Dublin. The first approach for the company will be establish a connection to the local enterprise boards across such the Fingal county, Dun Laoighaire-Rathdown County, South Dublin county and finally Dublin City. Here will approach the head of retail to establish how interested the each enterprise boards in bring this new technology on board and if they are, they will contact the businesses to see if they would be willing to join. The main goal would be establish a dialogue with at least one of these enterprise boards so that we start to build up a good relationship.

When we find out how many companies are interested we will start to individually visit each businesses to see the idea to them. We will make sure the team are well experienced in sales plus have a good knowledge of their business and their surrounding area. The team will visit early in the morning to avoid the busy period so they have plenty of time to present the idea to each business. The teams local knowledge will the owners that our team have taken the team to understand the how badly the retail sector area has been affected by the recession in the area and this how technology could have the capability to increase the footfall of the business. We highlight the success of other retail apps such the Shopkick app in America, how loyalty programs are proven to increase spending and how our data analytics can show their call to action/adverting is actually leading to sales and has a positive return on investment from their marketing campaign.

When the company has signed twenty companies to the project we will start to roll out our marketing campaign on a small level scale, relying more on word to build up our user base organically. This gives us time to properly understand how people are using the app through their valuable feedback plus it will give a clear idea how popular the app is actually which maybe clouded by a massive marketing campaign. After the first

month will start our phone sales campaign to convince the other businesses that may have rejected our project at first start to sign up. We will display the data that has been gained over the last month to highlight how many sales' conversion that the app has gained.

Mission Statement

The main goal at Nearu is to enable the consumers of Ireland to receive the right deal on the right product at the right time from the nearest available business. The team will ensure that consumers are always receiving relevant context aware offers and information that will greatly benefit the user while increasing footfall across the board.

Vision

Using the latest software and smartphone technology, Nearu wants to be the most reliable and innovative shopping app on the market. The company hope to be the reason why people go shopping not because they need to but because they want.

Values

The three most important elements in the Nearu shopping experience are the consumers, the retail experience and the return visit. The consumer must receive the information about the products they love when its benefits them the most. The Retail experience must benefit both the shopper and the retailer while the end result will mean a lasting relationship because the consumer and the retailer both understand what they want.

Financial Planning

Key Costs

Company structure - Nearu is a private limited company. The shareholders include -

John Paul Gallagher, CEO and Chief marketing Officer,

Luke Freeman- Chief Innovation Officer

Yue Zhang-Chief Operations Officer

Emamoke Precious Chief Financial Officer

Funding - The company will be funded by a €500k loan that will be repaid over a four term from Bank of Ireland, a fixed rate of interest of 10.3% will cost a total of 106k in interest repayments. Accessing available funds from Enterprise Ireland would give an injection of a Feasibility study and market intelligence grant of €15,000 for the first year of the business plus an Innovation voucher to the value of €5,000 for the one year. The four founding members will also invest a personal amount of €10k each. This will give a total investment for the first year of the business of €560k. It is estimated by the end of the year the company will have sizable amount of company subscriptions through our business to business model that will net an income of €54k.

Wages - The expenses to be generated by the company will include wages in which the company will hire two android developers at €60k each and one designer at €60k, the team will pay themselves a starting wage of €15k. The rental costs of €4800 for 2013 and €9600 in 2015 will come from hiring a work space from the Digital Hub on Crane St. This is the good location for the team as it is the main start up incubator in Ireland. The rental fees will expand when we move to the UK in 2015 when they cost €16800. Moving the business to China will increase the costs to €32k in 2016 and €32400 in 2017

General fixed costs will include - Light + heating at €1200,

Office furniture at €4000,

Stationary at €400

Post at €400

Main technology expenses - The main expenses will be generated from the purchasing of new technology such as laptops. This will give all the members of the team a laptop in the first year costing €11k. These costs will rise over the year five of the budget as more staff come on board.

These costs will increase as estimated below -

2014 at 17k,

2015 at €25k

2016 at €37k

2017 at €38k

Hosting costs - These costs will be generated using Amazon Web Services. These costs will also raise across the five year budget as the application reaches a wider audience. The costs attributed to these services are estimated below -

2013 at €4000

2014 at €7000

2015 at €12k

2016 at €18k

2017 at €28k

Other technology - These costs will include Internet rental that will cost an estimated €360 for the first three years of the budget. This cost will then rise to €720 for 2016 and 2017 as we move into the Chinese market. Gimbal license (.05 cent charge for every user once the application has 10,000 downloads) .05 cent charge for every user thereafter. Repairs to laptops are estimated at -

2013 at €1100

2014 at €1700

2015 at €2500

2016 at €3700

2017 at €3800

Sales team - We will also have additional staff that will include a four person sales team that will be paid a wage of €20000 per sales team member -

2013 at 4 staff €80,000
2014 at 6 staff: €120,000
2015 at 10 staff: €200,000
2016 at 20 staff: €400,000
2017 at 23 staff: €460,000

An addition team of localisation experts will need to be hired when moving to China to ensure that Nearu application will translate to the Chinese Market properly. These team members will be hired in 2016 onwards and these team members will be paid a wage of €60k each, costing a total of €120k for that year only.

Sales estimates - The estimation for sales will generate the company over five years an estimated €360 per year and rising to €400 per year after 2015 to accommodate for inflation before rising to a subscription of €450 per year per business from 2017 onwards

Legal & Professional - We estimate that the company will be required to pay €10k in legal fees in relation to our intellectual property rights, insuring that brand and technology will not be copied.

Insurance - Insurance of all the technology that is stored in the premises will generate costs estimated below -

2013: Small office (€1000)
2014: Large office (€2000)
2015: Large office (€2000)
2016: 2 offices (large + small) (€3000)
2017: 2 offices (€3000)

Bank Loan Repayments - €240,000 per year for 4 years

Travel - As the company grows the team will need to travel to the UK on a regular basis. It is estimated that team members will at least once a week to the UK -

Year 3 – Flights to the UK at €4800

Year 4 – International Travel at €10k

Year 5 – International Travel at €16k

Depreciation of hardware - €300 per laptop

2013: Depr. Of 11 computers at €3,300

2014: Depr. Of 17 computers at €5,100

2015: Depr. Of 25 computers at €7,500

2016: Depr. Of 37 computers at €11,100

2017: Depr. Of 38 computers at €11,400

Profit and Loss

The following profit and loss data illustrates the financial forecasts for the next 5 years.

Profit + Loss						
	Ireland 2013	Ireland 2014	Ireland & UK 2015	Ireland, UK & China 2016	Ireland, UK & China 2017	
volume/quantity of product/service sold	150	600	1100	3000	6000	
unit price of product/service sold	360.00	360.00	400.00	400.00	450.00	
total sales	54,000.00	216,000.00	440,000.00	1,200,000.00	2,700,000.00	
Sales Gimbal license (.05 for every 10,000 users)	5,000.00	10,000.00	20,000.00	40,000.00	80,000.00	
	49000.00	206000.00	420000.00	1160000.00	2620000.00	
Percentage gross profit	91%	95%	95%	97%	97%	
Employee costs (salaries and nat. ins.)	250000.00	370000.00	370000.00	370000.00	370000.00	
Premises costs	4800.00	9600.00	16800.00	32400.00	32400.00	
Laptops	11000.00	17000.00	25000.00	37000.00	38000.00	
Office Furniture	4000.00	8000.00	12000.00	24000.00	28000.00	
Hosting (Amazon EC2)	4000.00	7000.00	12000.00	18000.00	28000.00	
Rates, heating, lighting, water, services	1200.00	2400.00	2400.00	3600.00	3600.00	
Repairs	1100.00	1700.00	2500.00	3700.00	3800.00	
Phone	3800.00	6120.00	9000.00	13320.00	13680.00	
Post	400.00	400.00	400.00	400.00	400.00	
Stationery	400.00	800.00	1600.00	2000.00	2400.00	
Computer and Internet charges	360.00	360.00	360.00	720.00	720.00	
Advertising and promotion	30000.00	30000.00	60000.00	90000.00	120000.00	
Legal and professional	10000.00	10000.00	20000.00	20000.00	20000.00	
Insurance	1000.00	2000.00	2000.00	3000.00	3000.00	
Depreciation (write-down of assets)	3300.00	5100.00	7500.00	11100.00	11400.00	
Bank Loan Payments	240000.00	240000.00	240000.00	240000.00	240000.00	
Sales Team	80000.00	120000.00	200000.00	400000.00	460000.00	
Localisation Team				120000.00		
Travel		4800.00	10000.00	10000.00	16000.00	
Data Protection (Contingency Planning)	10000.00	10000.00	10000.00	10000.00	10000.00	
Other expenses	3000.00	3000.00	3000.00	3000.00	3000.00	
Total Fixed Costs (Overheads)	658520.00	843480.00	989360.00	1412240.00	1164400.00	
Profit before tax	-609520.00	-637480.00	-569360.00	-252240.00	1455600.00	

nearU

TECHNICAL DELIVERY

Introduction

This section of the document details the technologies and architecture of the individual system components. It provides an overview of the intricacies of each component and their place in the overall system architecture. The technical delivery illustrates the decision making behind the use of technologies, strategies and design methods. The design and specification of the product is described in high detail to provide the reader with an accurate understanding of how each component works, looks and integrates with other system components. This document is structured in the same way as the development process with an explanation of the underlying technologies described at the start followed by their integration and the design of individual components.

This document provides a road map for the full delivery of the proposed system from its initial conception to any future potential.

System Specification

The system specification sets out the minimum requirements of compatible devices and the development platform and reasons for its choosing.

Platform Specification

The possibility to develop the application as a web, hybrid or native application led to the analysis of these individual platform structures and the determination of the most suitable architecture based on the products requirements. Each platform provides distinct advantages and disadvantages summarised in the table below.

Item	Preferred	Reason
-------------	------------------	---------------

Rich user experience/Faster Performance	Native	Browser support limited for HTML5 – Different behaviour on range of devices – Native apps can leverage underlying resources
Deployment Costs	Web (HTML5)	Roll out once – automatic updates
Security	Native	Greater security on native applications, advanced features and cryptography
Immediate updates/Distribution Control	Web (HTML5)	Free to control distribution – can avoid Google Play/App Store

Information source (Ballve 2013).

MDG (2013) summarise that the performance speed is significantly faster in native applications at the expense of higher development costs. Quick performance and a natural UI are key features of the products requirements and this can be effectively achieved through native application development (Ballve 2013). Native applications also offer improved security and can be more reliable than their web counterparts. Although there are features of the web application stack that are appealing such as the platforms ability to update information quickly and roll out system changes seamlessly

the native environment provides a more robust setting for our application's development. As a result of these findings the decision to develop the product as a native application has been made based on comparison with the products key requirements. The native application designs natural UI and improved UX were appealing features and coupled with location based services and the possibility of leveraging the handsets context aware capabilities and camera application a native platform is the most suitable choice.

Kerschberg (2012) recommends developing for the Android platform first based on the operating systems large market share and proliferation on mobile devices. For this project the Android platform 4.3 has been chosen as the initial development platform. The Gimbal SDK through which the geofencing functionality is leveraged works with 2.2 and higher and is available for both Android and Apple development platforms. At a later stage the application will be ported to the iOS platform.

Prototype – The prototype product has been built using a hybrid selection wrapping web features in the Android native environment. This has allowed the development of the prototype to be achieved quickly using web standards and languages (HTML, CSS & Javascript) that would have taken longer to develop through Java alone.

Handset Specification

The Gimbal SDK works with everything from Android 2.2 (Froyo) onwards and although the target platform for the application will be 4.3 (Jelly Bean) the application will be available for these earlier OS versions. The result is that a significant number of handsets will be compatible with the Nearu application.

Handset requirements –

Android OS - The handset must be running Android OS version 2.2 or higher, the current version of Android is 4.3. Compatible versions of Android include -

- Froyo (2.2)
- Gingerbread (2.3)
- Honeycomb (3.1, 3.2)
- Ice cream Sandwich (4)
- Jelly Bean (4.1,4.2,4.3)

NFC Check-in – To be compatible with this feature the handset must be NFC enabled. Google, HTC, Samsung and Sony are the most notable companies that ship handsets with NFC technology.

Top selling Android handsets 2012/2013

Make/Model	NFC Enabled	Units sold
Samsung Galaxy S3	Yes	50,000,000
Samsung Galaxy S4	Yes	9,000,000
HTC One	Yes	23,000,000
Sony Xperia Z	Yes	1,000,000

Architecture

Client/Server Architecture

The client/server architecture supports the connectivity and communication required between the client devices (application) and stored data on the server. The client side of our service contains 2 different applications and a web based content management system. Each of these systems requires unique features that have been incorporated into their architectural design described in the following sections.

Nearu Components –

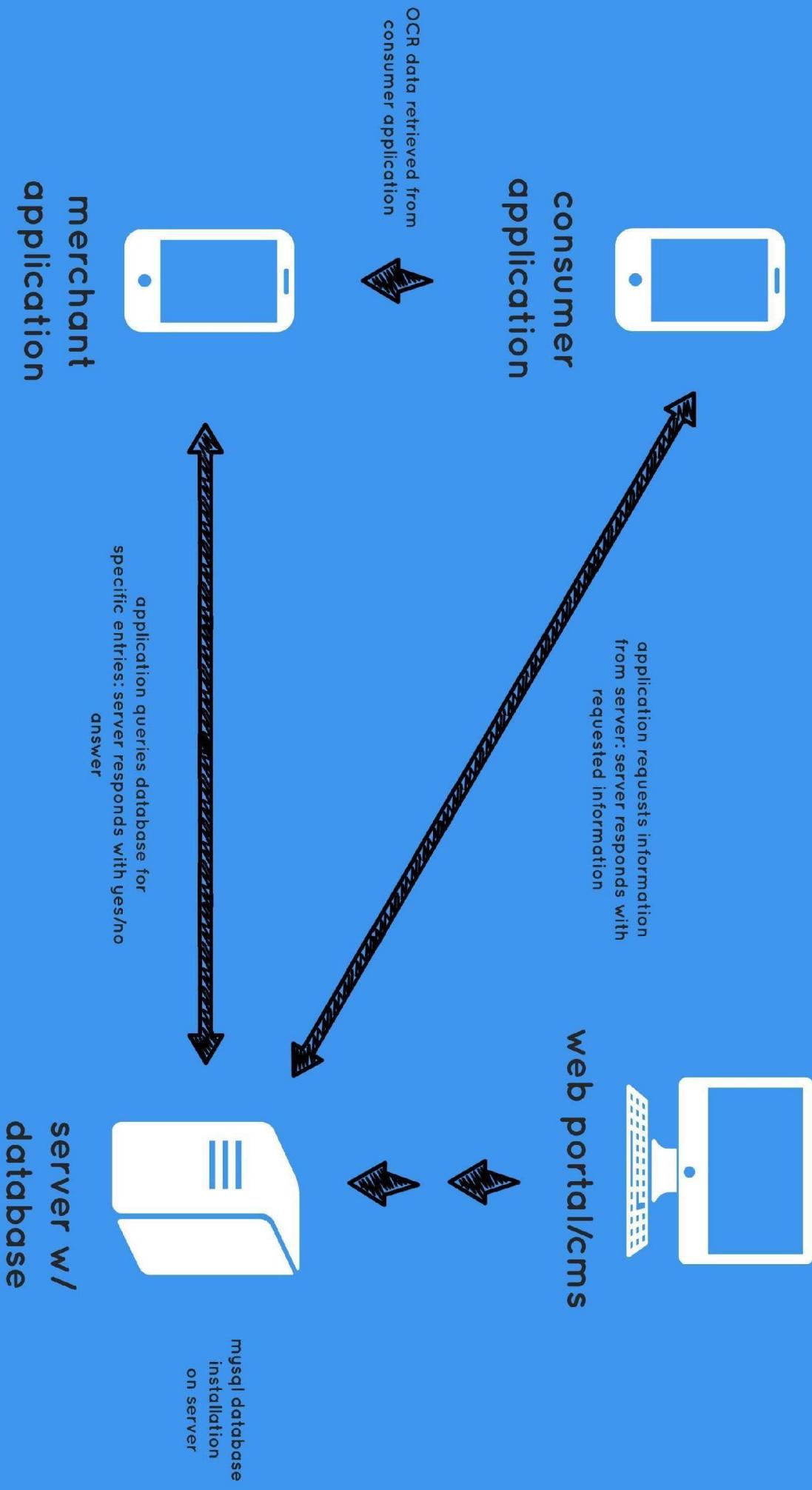
- Merchant application
- Consumer application
- Web portal
- Server w/Database

The server side stores the database and all associated information about consumers and store owners. The consumer application requests and sends information to and from the server's database. The consumer application is the services main focus and delivers location based data to the user.

Merchant information that is required by the consumer application is uploaded by the store owner through the web portal/cms directly to the database. This information is then sent to the consumer and presented through the consumer application as dynamic data. The merchant application is used by store owners and takes information from the consumer application in the form of digital vouchers and compares it with information stored on the server to facilitate voucher exchange.

Client/Server Architecture 1.0

content created by merchants is uploaded to the server



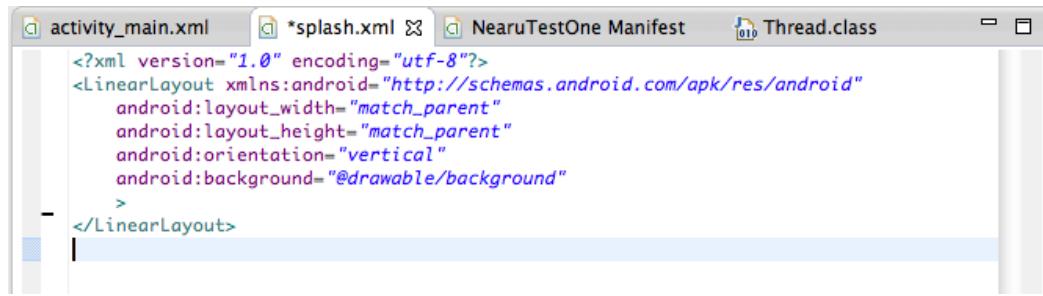
Consumer Application

Available as a downloadable native application the Nearu app allows users to create a unique account and collect points (Upoints) through store interaction. Offers are based on geo location and points can be redeemed against store goods. A unique feature of the applications design is the availability of service only within a geo-fenced area. Other features of the app include personalised advertising feeds that aggregate relevant advertisements closer to the top of the feed. User location, favourite lists, categories and point redemptions can be used to calculate the relevance of advertisements to individual users. The application uses inventive ways of generating consumer interaction by rewarding points through social media including check-in, sharing and photography of location, goods and services. A leader board feature generates competition between users and rewards frequent users and top scorers.

The consumer application is built using the Android SDK and an external API (Gimbal). The native language for the Android SDK is Java and this controls the programs functionality. The GUI is built using a view layer written in XML. XML templates containing the user interface correspond with the Java file containing the executable code. The Gimbal API provides the key features of the applications design. The consumer application is linked to the central database which populates the application with dynamic data.

UI -XML is the natural way to develop interfaces for Android applications. It provides the necessary flexibility and control to develop a rich UI. XML is easy to understand and write and layouts can be quickly prototyped and developed with an immersive user experience. Thornsby (2012) highlights the main advantage of using XML to develop the UI as '*the ability to keep the UI and the behaviour of your app separate, giving you the freedom to tweak your app's presentation without disrupting its underlying functionality*'.

This level of abstraction suits the style of architecture chosen for the applications development using MVVM.



The screenshot shows the Android Studio interface with the code editor open. The tab bar at the top includes 'activity_main.xml', '*splash.xml', 'NearuTestOne Manifest', and 'Thread.class'. The main area displays the XML code for 'activity_main.xml':

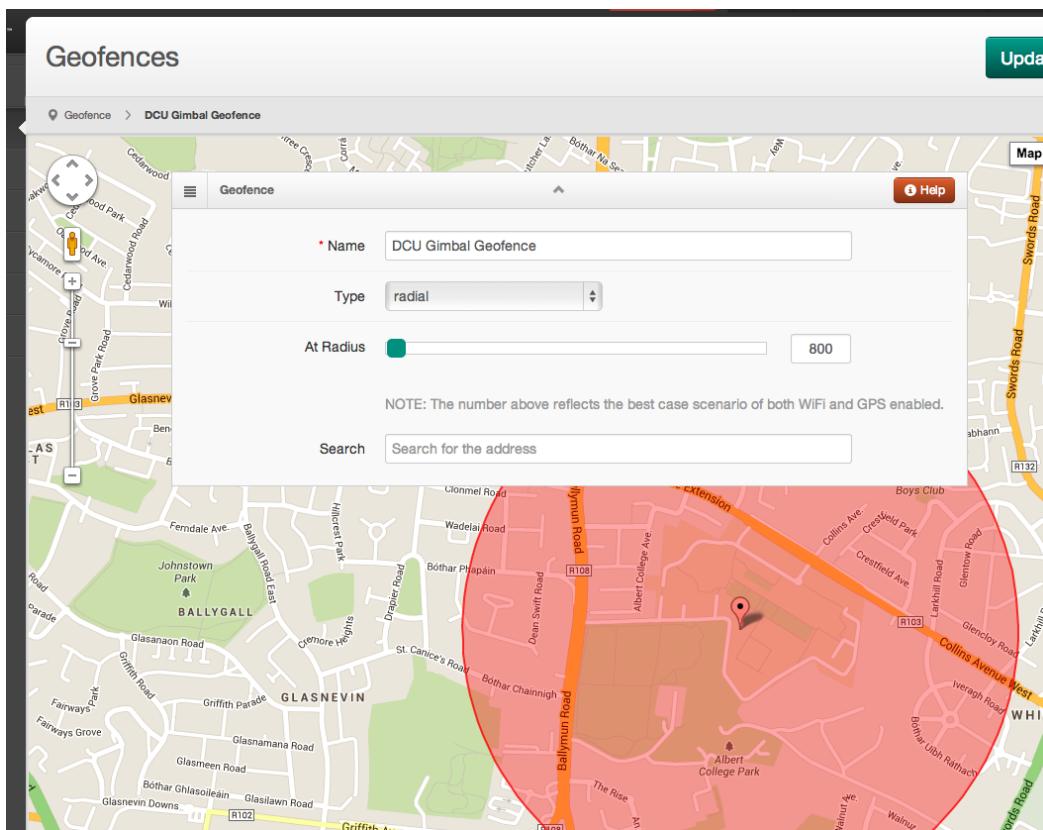
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:background="@drawable/background"
    >
</LinearLayout>
```

XML code for the application loading screen

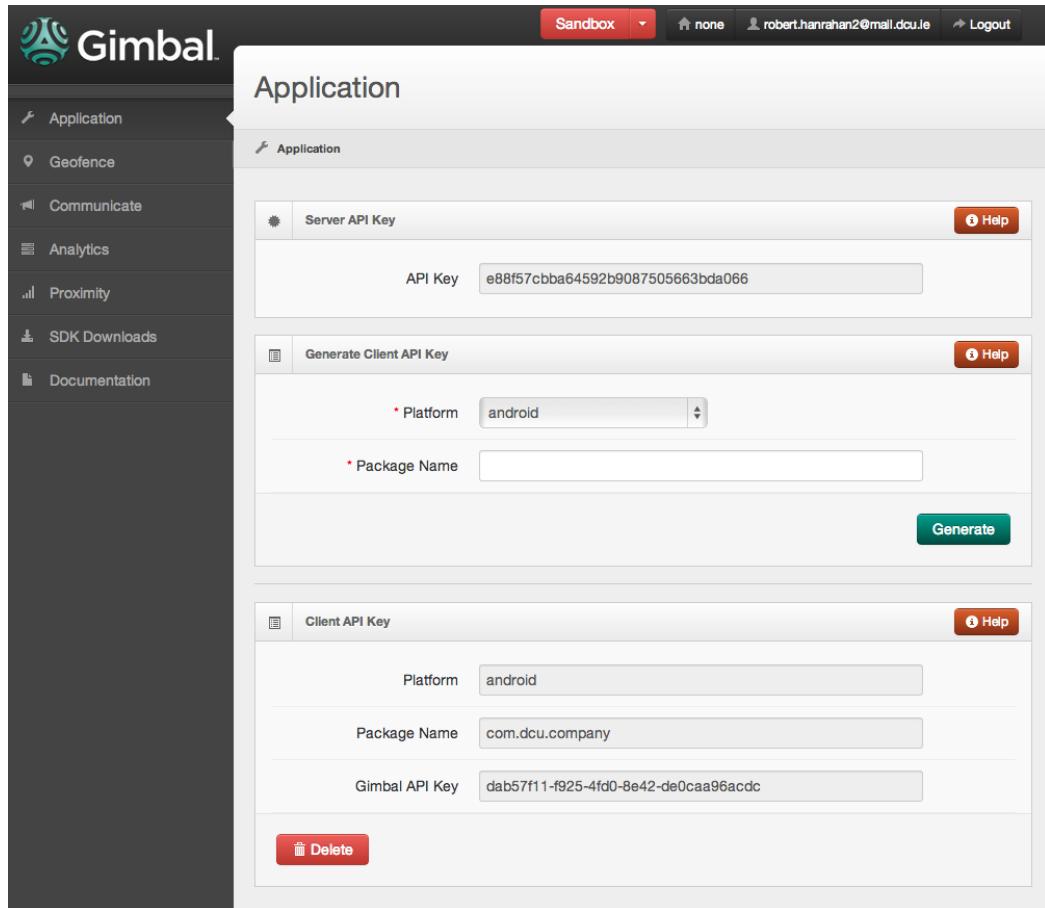
MVVM (Model-View-ViewModel) Architecture - The application architecture will be built using the MVVM style of design. The model layer represents the data coming into the application in this case the database information. The view layer represents the GUI (Graphical User Interface) and its various components including buttons, form fields and layouts. The ViewModel layer provides the interaction between the model layers information and the views interfaces and provides commands for the view to execute. The advantages of using the MVVM style allow the application design to be changed easily and make unit testing of commands a lot simpler. According to an article on Code Project (2011) the binding style of MVVM produces cleaner code. Documentation on Intersoft states that MVVM '*allows you to create a strong separation between data, behaviour, and presentation, making it easier to control the software development process primarily on the user interface engineering*'. This will allow the development team to build a rich UI and UX experience focused on the design/layout plans.

Gimbal SDK - The Gimbal SDK provides an all-purpose API for the development of context-aware applications. This API also incorporates location based services and

simplifies the process of generating multiple geofences. A connection authenticated through a client/server key exchange allows the Nearu development team to edit and upload geofences efficiently through the Gimbal manager and these changes are pushed to client devices running the application. The ease of use and maintainability of the Gimbal platform provide the development team with a framework for developing a context-aware location driven application. It is through the geofence trigger that the applications main functionality is established and although this can be achieved using the Android SDK alone the bundled functionality and established platform will reduce development time. The location based services are leveraged from Gimbal using the platforms RESTful web services available through the Gimbal REST API. A server key and client key authenticate the communication between the server and client and allow the application to receive data from Gimbal services.



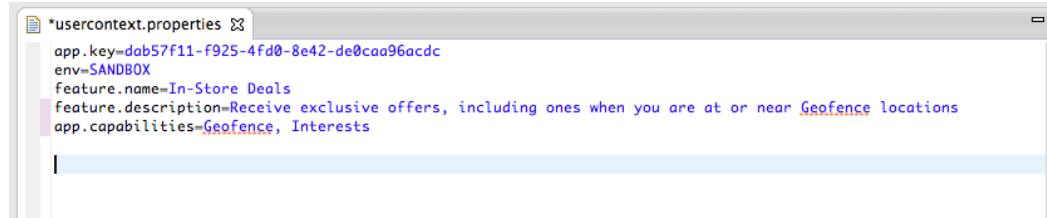
A screenshot of the geofence tool accessed through the Gimbal dashboard. Geofences are easily configured using this tool built with the Google map API.



The Gimbal portal manages the geofence triggers and relative data – this screenshot shows the server and API keys required for data transmission.

The following illustrates the settings file of an application developed using Gimbal to permit geofence, context-aware and interest services. The consumer's location determines the news feed that is received. Store advertisements are segregated

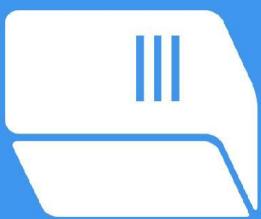
depending on their location with each store assigned to a respective geofence. Entry upon a specific a geofence generates advertisements for stores within that location only.



A screenshot of the context.properties file within the application that controls the features available through Gimbal eg. Geofence and Interest aware capabilities.

The interest's functionality is user permission granted and leverages information from the users search history to determine the relevance of advertisements for application users. Access to the context aware services can be toggled on and off and when in the on state the keywords from the user's searches are communicated to the server. Advertisements that match those keywords can then be aggregated to the top of the news feed the next time the user is within a geofence. This improves the relevance of the news feed and adds personalisation for the user. Other factors that affect the rating of advertisements towards a user include categories selected, shares and favourites. Interaction with store advertisements through these functions increase or decrease the position of an advertisement on the user's news feed.

Nearu Application (Consumer)



When the user is outside a geo-fenced location the news feed is blocked from receiving data.



When the user is within a geofenced location the news feed and available vouchers feed is populated with data specific to that geofence.

outside geo-fenced location

geo-fenced location

Nearu Application (Consumer)

4. The nearu server references the users account profile to generate a news feed to the users preferences and sends this back to the application.

3. If yes the application calls the Nearu server using the geo-location ID to retrieve the relative news feed.

1. The user logs in to the system securely using SSL.



nearu server



2. The application checks if the user is in a valid geo-location by calling the Gimbal server.

Geo-fence locations are created by the Nearu team for the chosen locations.

consumer application



gimbal server

Personalisation

Favourites

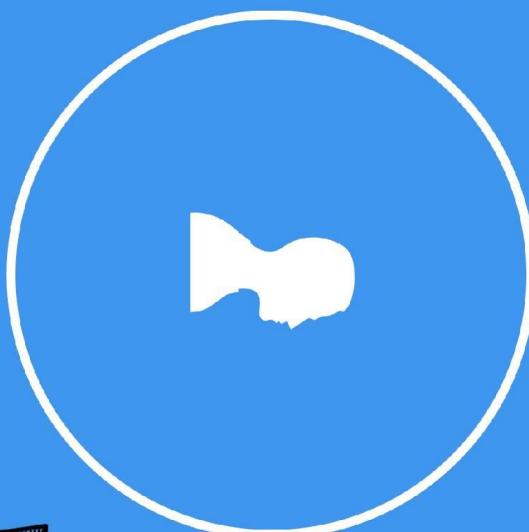
Making an advertisement a favourite indicates that the user may have more preference for that stores products.



User profiles are annotated with this data and advertisement feeds are personalised based on these profiles.

Categories

Selecting categories is a sure fire way for the user to decide which advertisements are the most important to them - selected categories always appear at the top of the news feed.



Search History

Keywords from the users online search history are stored in the database and compared to current advertisements for matching terms.



Social Media

Sharing advertisements indicates products/services and stores that the user favours.



NFC (*Near Field Communication*) - NFC is a standards based communication protocol for mobile devices allowing information to be exchanged when two devices are within close proximity of each other. The contactless features make data exchange quick and efficient. A feature of the Nearu application is the use of NFC technology in-store to automate check-in proceedings and provide an alternative method for generating points. NFC technology is easily programmed and inexpensive and provides an innovative way for consumers using the latest handsets to check-in to participating stores.

Advantages

- Inexpensive
- Ease of use

Limitations

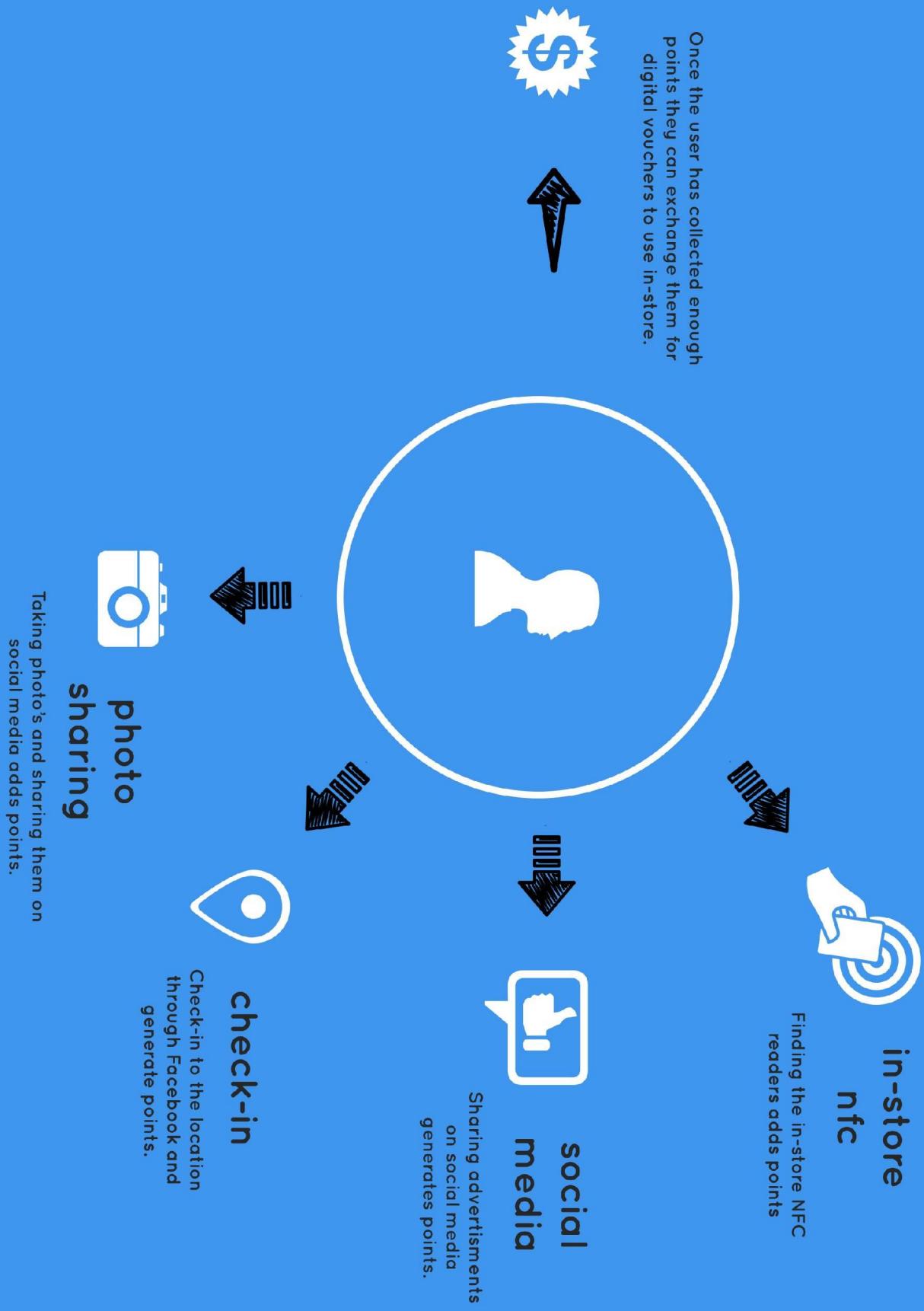
Limitations of the technology occur as it only becomes available in the latest handsets; the motivation behind using NFC is that it encourages consumers to enter the store thus rewarding them for their participation.

Social Media API's (Facebook, Twitter, Pinterest) – These social media providers can be integrated with the application using their respective API's. The sharing functionality of the Nearu application requires the user to submit account details for each of the social media platforms to enable sharing and points redemption from within the application. Using the RESTful services provided by Facebook, Twitter and Pinterest allows the Nearu application to verify shares by the user. The interaction is handled by calls from the native application to the API and uses OAuth a security standard to ensure a secure communication.

Overview (How it works)

- The user selects Facebook from the account options and submits username and password credentials for that account; this information is communicated using SSL.
- The account credentials are stored on the server.
- The sharing functionality within the application uses the credentials to post information directly to the users account from within the application.
- Connections to Facebook are secured using OAuth.

The Points System



Merchant Application

The application is available for download as a native program for smartphones and requires unique login credentials only generated through a paid subscription. This application allows shop owners to redeem points from consumers. Digital vouchers generated through the consumer application are required to follow a process of redemption. The merchant application bridges this gap between dynamic offers and the store by providing a till point exchange and supports the involuntary creation of offers. It prevents consumers availing of a single offer multiple times at the stores expense and provides an accurate method of redeeming and subtracting consumer points. The information about the discount is stored on Nearu servers and can be accessed and retrieved for use in stock and tax calculations. The application features three interfaces presented as the login screen, voucher scanner and a records request.

The merchant application uses the underlying capabilities of the smartphone (camera API) in combination with an OCR API (Optical Character Recognition) to facilitate the redemption of vouchers. The OCR API is openly available for the Android SDK and is called from within the applications class. The merchant application communicates with the database on the server side to manage exchanges of information. Database entries are used as points of reference to authenticate the redemption of vouchers. The merchant application features 2 screens after the login and is built using Java through the Android SDK.

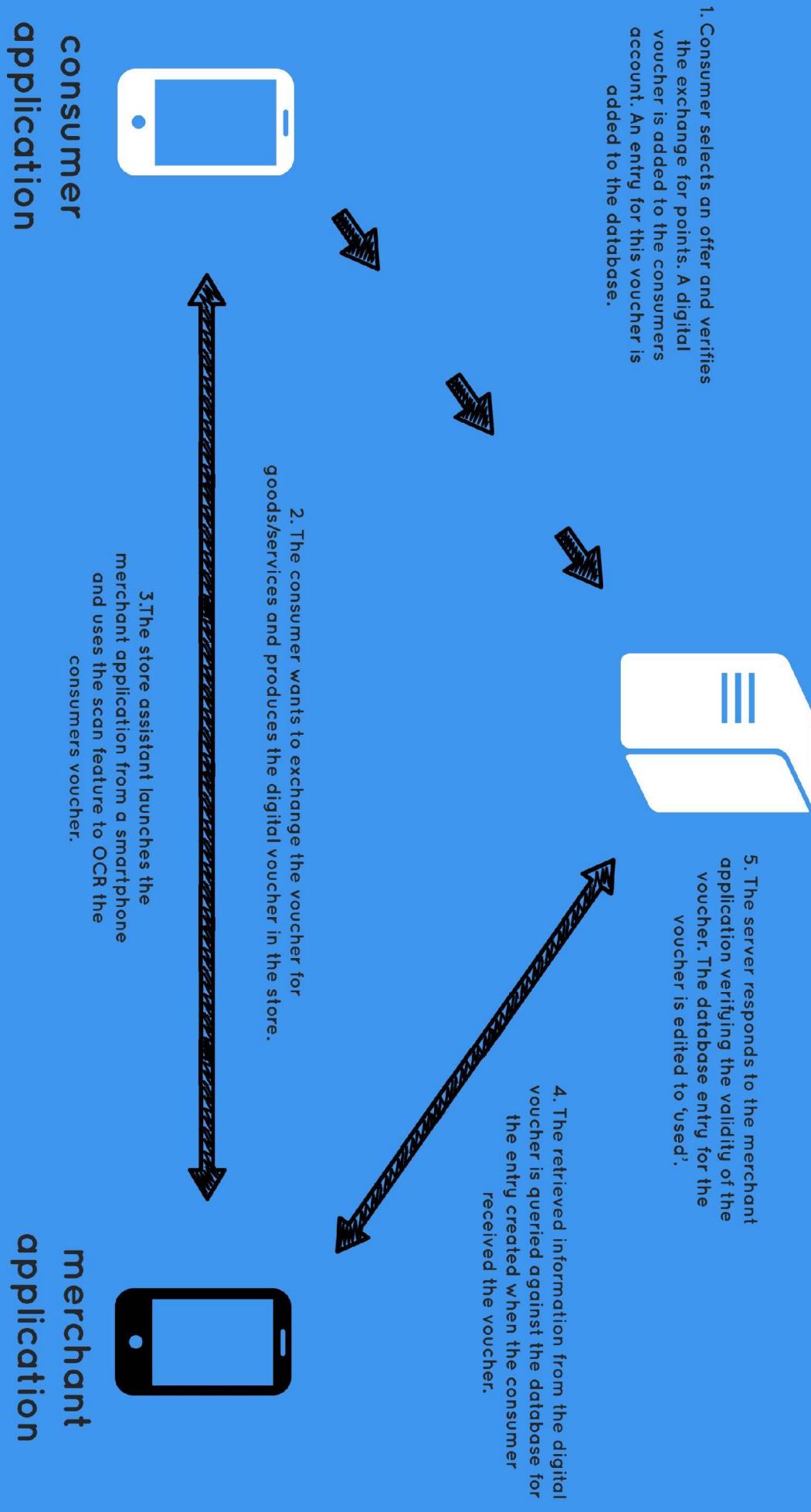
OCR (Optical Character Recognition) – OCR technology provides the most efficient and cost effective way of exchanging digital vouchers. OCR is used to recognise characters and numbers in digital format simply by scanning the object with OCR enabled technology (Camera, software). The characters retrieved from an OCR scan are converted to a string which can be used for search or reference purposes.

Overview (How it works)

The following provides a simple overview of the digital voucher exchange between the store and consumer using OCR to communicate the data.

- Consumer selects an offer and generates a digital voucher within the application and this creates an entry on the database with the selected offer and field named 'valid'.
- Shop owner/assistant takes a scan of the digital voucher using the merchant application.
- The OCR function converts the voucher to a string that is sent to the server and referenced against the database.
- The server uses this string to access the correct entry, check the offer exists and edit the consumers voucher field to 'used'.
- Finally the server edits the merchant table with the transaction for analytics/purchase history.

Exchanging Vouchers for Points



Web Portal

The web portal provides merchant account owners with a GUI to create/edit/delete database entries. Information uploaded through this CMS (content management system) creates an advertisement that is pushed to the consumer application. The functionality for the CMS can be implemented using PHP and the CMS connects to a MySQL database to enable the upload of data objects. The CMS is a user friendly method of allowing merchant users to edit, upload and keep track of their product/advertisement information. It provides the necessary controls to manage the UPoint information from a merchant's perspective and integrates efficiently with the MySQL database. PHP controller scripts manage the user uploads and create the required database entries. The presentation layer (GUI) is designed using HTML, CSS and Javascript.

Web portal data entry for product advertisement (table fields) – The following defines the fields that constitute a new product (fields marked with a * are a form field in the CMS edited by the owner).

- Product ID > Generated when a new product is created
- Name* > The name of the product
- Description* > The product description
- Image* > Cover image for the product
- Time Remaining* > The time remaining on this object

Web portal data entry for store points offer (table fields) – The following defines the fields that constitute individual store information for a Upoints offer.

- Offer ID > Generated when a new offer is created
- Offer Name > The name of the offer
- Offer Description > The offer description
- Points Required > Points required to select this offer

Server Architecture

For our application to be truly dynamic and handle user requests and interaction it is necessary to develop a back-end. The back-end or server side of the application hosts the database which stores the application information. The database is installed on the server and this can be connected to each component (merchant application, consumer application, web portal). Our goal with the server-side architecture is to develop a scalable and secure platform that operates to a high performance when managing client interaction.

MySQL – MySQL is the chosen database installation for the back-end and according to Palani (2010) the unique design/storage system promotes high productivity, fast performance and is well supported. MySQL uses tables to identify and store specific data. It can be used to manage the login functionality, store account information and product data. Information supplied from the application and web portal is stored in the database and presented to the user through the GUI on the application side. According to MySQL.com sites including Facebook and Twitter rely on a MySQL database to manage their exponential growth. The database has the capability to grow to manage numerous user requests and information references while maintaining high performance and scalability.

The secure management of data is an important aspect of our application design and the proposed architecture ensures that all information is stored on the server side. Personal information stored in the database needs to be encrypted and MySQL provides the functionality for achieving this. The following methods provide encryption for the communication exchange and the server side enforcing cryptographic standards throughout all aspects of personal information collection and retention.

- AES_Encrypt

- SSL

AES (Advanced Encryption Standard) - is an encryption specification that can be applied to the database table fields. The advantage is that even in the event of a breach of access the database content will be secure and safely encrypted. MySQL provide built in functions AES_ENCRYPT and AES_DECRYPT to manage the encryption of database information. Ahsan (2010) writes that the MySQL encryption functions are the most cryptographically secure available for the platform. AES encryption will only be necessary for select fields eg. Username, Password, E-mail, Name.

```

private static byte[] encrypt(byte[] raw, byte[] clear) throws Exception {
    SecretKeySpec skeySpec = new SecretKeySpec(raw, "AES");
    Cipher cipher = Cipher.getInstance("AES");
    cipher.init(Cipher.ENCRYPT_MODE, skeySpec);
    byte[] encrypted = cipher.doFinal(clear);
    return encrypted;
}

private static byte[] decrypt(byte[] raw, byte[] encrypted) throws Exception {
    SecretKeySpec skeySpec = new SecretKeySpec(raw, "AES");
    Cipher cipher = Cipher.getInstance("AES");
    cipher.init(Cipher.DECRYPT_MODE, skeySpec);
    byte[] decrypted = cipher.doFinal(encrypted);
    return decrypted;
}

```

AES_Encrypt and Decrypt functions (Java)

SSL (Secure Sockets Layer) - provides encryption and authentication for the exchange of data between a client and server. The introduction of a secure layer through which to communicate transmissions ensures that any data exchange over that connection has not been tampered with or viewed by a third party. SSL integrates well with Android and the native application design can easily transmit data to the database. The SSL connection requires additional bandwidth however the perceived benefits of securing client login and account information ensure this process is only used in the applications essential security requirements (login process, account creation, social media information). Kissoon (2011) highlights the slow performance issues associated with

SSL but cites the customer confidence and secure connection that is near impossible to hack as essential for personal information.

Overview (How it works)

The following steps illustrate the high level creation of a secure connection and the transport of personal data to an encrypted database.

- SSL certificate is placed on the server side.
- Client (consumer application) makes request to database and checks for SSL certificate.
- Server responds with the SSL certificate and asks the client the keys they want to use for the secure exchange.
- Client responds with the selected keys (Public Key Encryption).
- Server responds using public key exchange.
- Client responds using public key exchange.
- Now both client/server have a means of secure communication and messages are exchanged using public key encryption.
- Data sent from the client is encrypted upon entry to the database using in-built functions.

Communication Layer

The communication layer is responsible for the secure and fast exchange of data between the client application and the server's database. The architecture of this layer and selection of technologies has been designed to enable a lightweight exchange that easily scales to a large number of user requests. Security is an important component of the communication layer and the mechanism for achieving has been described above using SSL.

Architecture – REST

Message format - JSON

REST (*Representational State Transfer*) – REST is an architectural style of communication that imposes constraints on client/server communications to improve the transport and exchange of data. It uses four HTTP calls to retrieve and edit data on the server (GET, PUT, POST, DELETE). This simplified method of communication places less overhead on the HTTP requests used for client/server exchanges. Using REST provides several key advantages to the performance of the application. The exchange of data is lightweight compared to the use of SOAP exchanges placing less strain on the bandwidth and the server. SOAP messages carry large overheads and can only send/receive requests in XML. Using a REST style of exchange enables the application to scale to a large number of user requests. According to Fielding (2000) the REST architecture is designed to improve scalability and reduce the high latency which occurs through server interaction. Unlike SOAP however the REST style lacks predefined security and it is necessary to implement secure transport through third-party security (See security section). For future development the REST style approach can be used to easily implement a REST API on the server to enable developers and website owners to consume application information. This increases the extensibility of the application and makes it available as a web service.

PHP (*Hypertext Preprocessor*) – PHP is a server side scripting language that can be used to manage requests from the client. A PHP script is placed on the server to interpret the calls made from the application. An example call from the application would be to retrieve (GET) the latest product advertisements and in this instance the PHP interprets the GET request and sends the latest product advertisements to the application. PHP can be used to manage all of the client requests that our native application requires.

```

<?php

#Ensure that the client has provided a value for "FirstNameToSearch"
if (!isset($_POST["FirstNameToSearch"])) && $_POST["FirstNameToSearch"] != ""){

    #Setup variables
    $firstname = $_POST["FirstNameToSearch"];

    #Connect to Database
    $con = mysqli_connect("localhost", "root", "", "mytestdatabase");

    #Check connection
    if (mysqli_connect_errno()) {
        echo 'Database connection error: ' . mysqli_connect_error();
        exit();
    }

    #Escape special characters to avoid SQL injection attacks
    $username = mysqli_real_escape_string($con, $username);

    #Query the database to get the user details.
    $userdetails = mysqli_query($con, "SELECT * FROM users WHERE UserName = '$username'");

    #If no data was returned, check for any SQL errors
    if (!$userdetails) {
        echo 'Could not run query: ' . mysqli_error($con);
        exit;
    }

    #Get the first row of the results
    $row = mysqli_fetch_row($userdetails);

    #Build the result array (Assign keys to the values)
    $result_data = array(
        'Username' => $row[1],
        'Points' => $row[2],
    );

    #Output the JSON data
    echo json_encode($result_data);
} else{
    echo "Could not complete query. Missing parameter";
}
?>

```

An example PHP script points.php placed on the server side that gets the number of points from a users account and converts the data to JSON format.

JSON (Javascript Object Notation) – JSON is a lightweight message exchange format that is easily interpreted by both humans and machines. When the PHP script gathers the data to send to the client application from the clients request it encodes the response using JSON. This reduces the time to send and interpret the information as the JSON format is significantly simpler than XML. When the client receives the JSON message from the server it can quickly parse the information and display it for the user. XML is typically used for the exchange of data however messages require additional layers of encoding and padding and the syntax is heavy in comparison to JSON. JSON.org states that XML is in fact not well suited to data-interchange as a result of the additional

baggage and Shabrez (2012) writes that JSON is less cluttered than XML and therefore better for mobile communications. Staudacher (2012) adds that using JSON provides a standard communication platform for distributed devices and is understood by browser, Android and iOS platforms.

HTTPClient – The HTTPclient class is part of the Android application available as an API and is responsible for making the server requests. The HTTPClient contains a JSON parser and manages the message request/retrieval exchange. The HTTPClient provides full support for SSL with the implementation of a Java extension (Java Secure Socket Extension). Calls from within the applications Java files initiate the database connection to send/receive information.

```
//Create the HTTP request
HttpParams httpParameters = new BasicHttpParams();

//Setup timeouts
HttpConnectionParams.setConnectionTimeout(httpParameters, 15000);
HttpConnectionParams.setSoTimeout(httpParameters, 15000);

HttpClient httpclient = new DefaultHttpClient(httpParameters);
HttpPost httppost = new HttpPost("http://192.168.1.112/clientservertest/points.php");
httppost.setEntity(new UrlEncodedFormEntity(nameValuePairs));

HttpResponse response = httpclient.execute(httppost);
HttpEntity entity = response.getEntity();

String result = EntityUtils.toString(entity);

// Create a JSON object from the request response
JSONObject jsonObject = new JSONObject(result);

//Retrieve the data from the JSON object
strUserName = jsonObject.getString("UserName");
intPoints = jsonObject.getInt("Points");
```

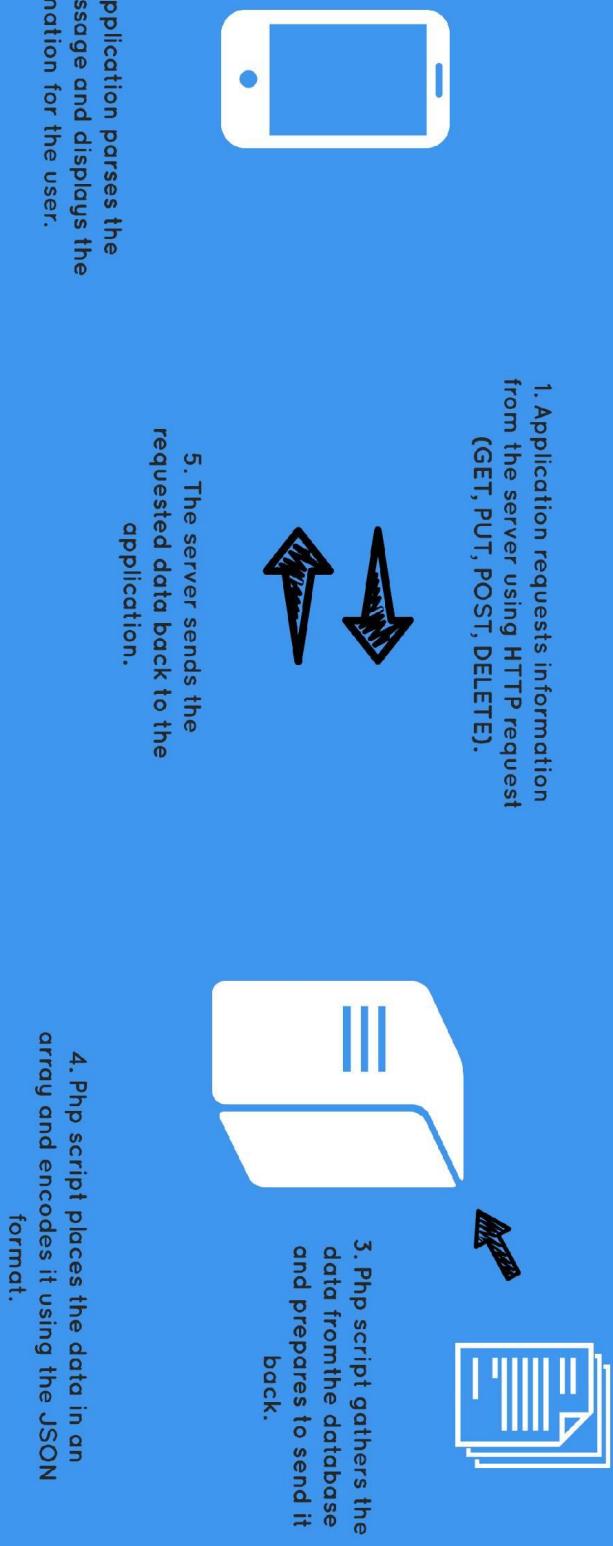
HttpClient makes the POST request to the points.php file and parses the JSON response

Overview (How it works)

A simple overview of how our REST inspired lightweight communication layer works promoting scalability and extensibility for our application.

- The client (Nearu application) makes a request to the server for the latest product information (Sends HTTP POST).
- The PHP script on the server handles the request and queries the database for the information.
- The PHP script then collects the required data and prepares to send it back to the client.
- The PHP script assigns each piece of data a key value pair and outputs the requested data in the JSON format.
- The JSON message is sent back to the client and the application parses the data and displays the information for the user.

REST Architecture



Commercial Server Provider (Amazon EC2)

Amazon EC2 – A commercial provider is necessary to manage the server requirements and Amazon provides reliable and scalable web application hosting in the form of their EC2 platform (Appendix 15). Amazons EC2 (Elastic Compute Cloud) is a cloud server architecture that contains multiple databases, application servers, load balancers and web servers to enable the efficient delivery of a mobile application.

Setup – ‘*Most organizations will select an Amazon Machine Image (AMI) and then customize it to their needs*’ (Amazon EC2 documentation). Amazon provides the company with an instance on their servers which contains an image to build the applications back-end on. The AMI infrastructure allows the chosen technologies and architecture for the server side to be implemented to the exact specification. In this case the Nearu image will contain a virtual OS (Linux/Windows) with the MySQL database and PHP scripts for client database communication installed. These virtual images can be edited, added to and deleted with ease. According to Seldo (2012) flexibility is EC2’s greatest asset allowing companies to easily scale to load-events, recover from failure quickly and deploy new hardware upgrades cost-effectively.

Nearu will use a flexible model that charges for usage only, maximising the traffic value and storage cost for the company during peak and low times. Amazon states that the web servers and application servers are set to auto scaling which automatically detects incoming user requests and manages the load to handle spikes and maintain performance. The service will be able to handle the storage requirements for application data adding necessary storage capacity when required. Seldo (2012) recommends the use of EC2 for startup companies as a cost effective way of managing hardware requirements.

The key advantages to using EC2 for our applications hosting –

- No need to purchase hardware.
- Database size and cost scales depending on usage.
- Flexible infrastructure that can be configured with the latest technologies and hardware upgrades.
- Can handle any number of user requests while maintaining a high performance.
- Pay for usage only.
- Recover from failures quickly using multiple instances.
- Backup is easily configured with load balancers offering roll-back features.

Nearu Merchant Application

Functional Specification

Features/Functionality -

- Simple UI/3 screens/single command
- Camera scans generated voucher
- Information about exchange stored on server
- Monthly reports on sales, customer use
- Dialog Messages

Login screen – store owners/sales assistants log in to the merchant application using credentials provided by the Nearu team upon receipt of purchase. The login functionality requires a username/password combination.

Voucher scanner – After the application has loaded the first screen to appear is the voucher scanner. This screen has been selected as the home screen to minimise navigation for the end user. When a consumer presents a digital voucher to the store the sales assistant simply scans the voucher using this interface by clicking the camera button located at the bottom of the screen.

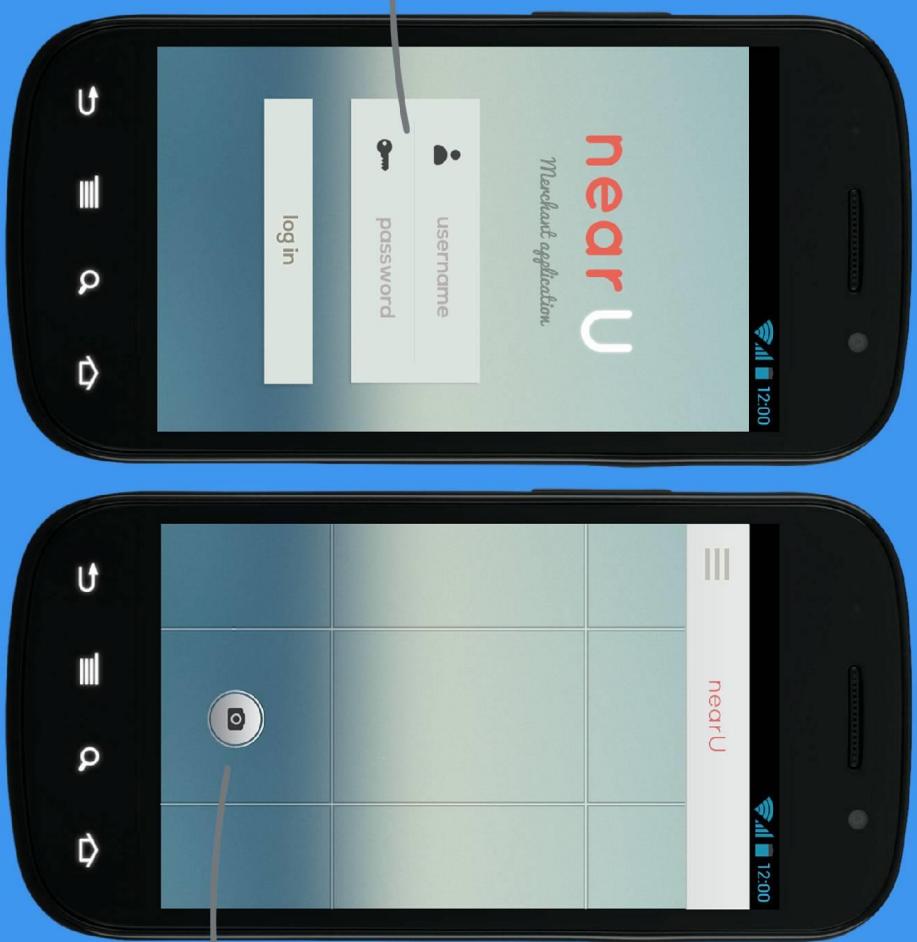
Records request – The records request page is simply a button controlled request form that the user clicks to receive an e-mail about the services performance. The e-mail is sent to the address submitted upon registration.

Navigation - The application uses a side-navigation control that contains access to the voucher scanner, request records and logout features.

Dialog messages - Dialogs have been implemented to alert the user to accepted/rejected or failed voucher scans. Once a voucher has been scanned it is necessary to apply a status to the transfer and dialogs provide an effective means of achieving this. The dialog messages popup covering the voucher scanner and request the user to take another action. There are four dialogs implemented within the application and they are –

- Failed 'Scan Failed'> this dialog message indicates that the OCR recognition has failed. Alternative action is to retry.
- Invalid Voucher 'Already Used/Not for this store'> this dialog indicates that the voucher is not applicable for the store. No alternative action.
- Passed 'Voucher Accepted'>this dialog indicates that the OCR has been successful and the server has been notified of the voucher transaction. No alternative action.

Merchant Login

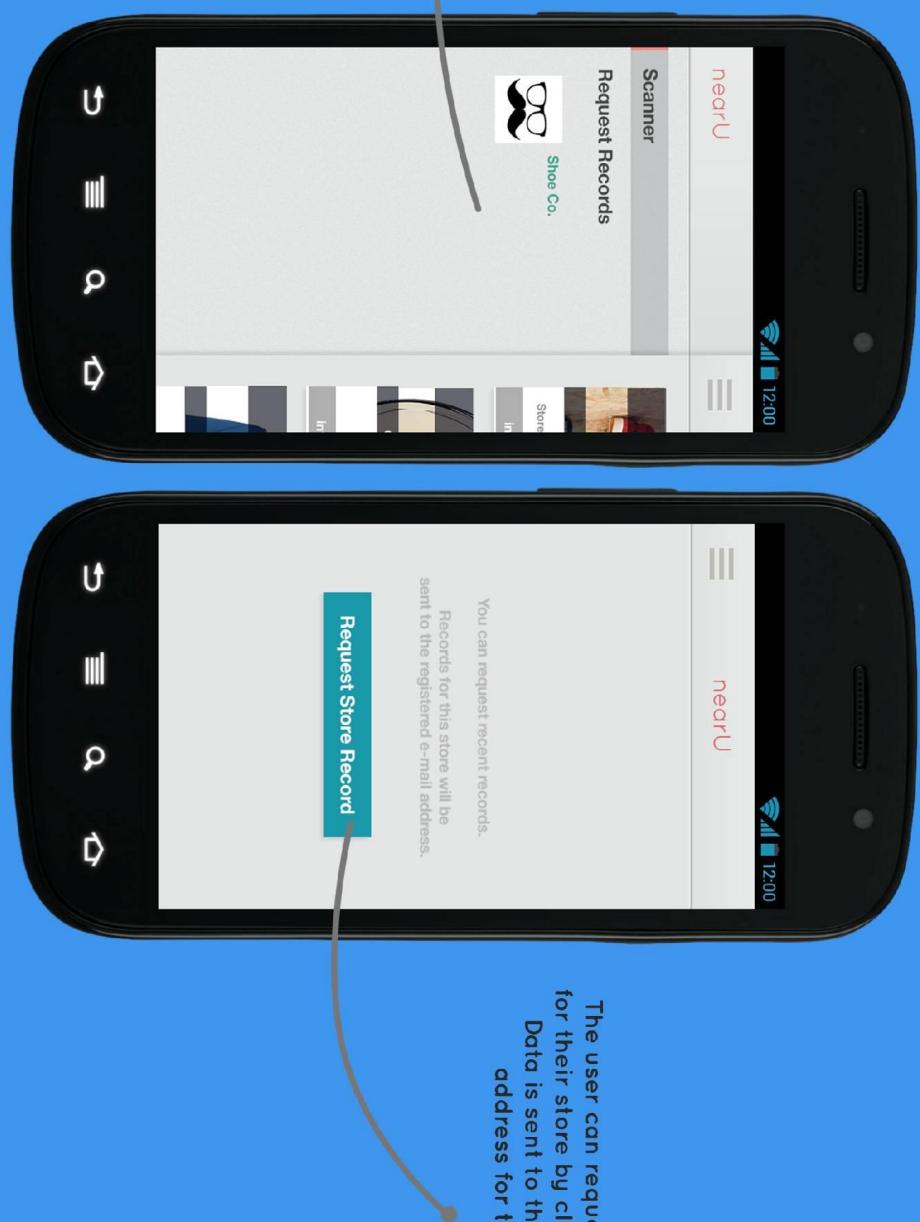


Used by store owners to scan consumers vouchers. Simple UI clicking the camera button starts the OCR process.

Scanner

Navigation

Request App Data



Simple navigation allows the user to switch between the applications two processes.

The user can request application data for their store by clicking on this button. Data is sent to the registered email address for that merchant.

You can request recent records. Records for this store will be sent to the registered e-mail address.

Design Specification

The merchant application is a simple program that minimises the controls/choices of the user to serve a basic function. According to Nielsen (1995) an '*aesthetic and minimalist design*' is a feature of good usability and this has been incorporated within the applications design. Several features of Nielsen's (1995) Heuristics are present in the merchant application. For the voucher scanner during the scanning process a loading or completion bar illustrates that the system is currently determining the status of the voucher. This feature provides a visual reference for application users and satisfies Nielsen's (1995) '*visibility of system status*' heuristic. Dialogs have been designed using heuristic principles from Nielsen (1995) who states '*Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.*'

Nearu Consumer Application

Functional Specification

Features/Functionality -

- User Accounts
- Context aware advertising
- Simple UI
- Rich UX
- Location based services
- Points based system
- Social media integration
- Unique voucher generation

Login Screen – The login screen uses a secure connection to authenticate user access. Necessary credentials include a valid username and password. In the event that a user forgets their password the option to renew via e-mail is presented clearly on the login form. The login form also provides navigation to the create account page in the event that it is a new user.

Create Account – The create account page requires the user to submit email, username, password and gender information. Users have the option to submit the credentials to their Facebook, Twitter and Pinterest Accounts for sharing purposes. Located just before the submit button the user must select agree to terms and conditions before proceeding.

News Feed/Homepage – The homepage is populated with advertisements created by merchant users. It works like a news feed as new posts are created they populate the top of the feed with older posts subsequently pushed down the display order. Each advertisement features a title, image, description, share button, favourite button and information link. The interactions have been designed using natural language that describes the action clearly to the user (Nielsen 1995). All interactions have been placed at the bottom of the advertisement to conform to a consistent design. The user can toggle between the news feed of advertisements or the news feed of available vouchers by clicking on the arrow in the right hand corner.

- Heart Icon - Selecting the heart icon adds points to the users account and increases the favourite counter visible in the middle of the advertisement. A favourite advertisements heart icon turns green and users can deselect favourites by re-clicking the icon.
- The ‘share this’ button activates the side navigation for sharing advertisements (this process is described in the share this description).
- The UPoints counter always displays the available points for checking in to the store.
- The ‘info’ button links to the product page.

Product Page – The product page contains information for a specific stores advertisement. The product page is only accessible from the news feed (info button) and a users list of favourites. The product page features the stores name, the advertisement info, address, Upoints available, Upoint offers, time remaining, share button, favourite button and map button.

- Map button – The map button shows the location of the store through a Google map, clicking ‘map’ slides the interactive map with the stores location into view.

- Check-in – If the store owner has enabled check-in for point's availability the user can select to check-in through the product page by selecting the check in text.
- Upoint offers – A user can select to exchange Upoints for the offers/deals set by stores. By clicking on the text describing the available offer the user is presented with a dialog that asks them if they wish to proceed. The user will not be able to complete the transaction if they do not have the required Upoints. If the user confirms the transaction a voucher will be generated and stored in the users voucher wallet and a dialog popup appears to notify the user of this change.
- Time remaining – The general advertisement is set to a time limit that decrements and removes the advertisement upon reaching 0.

Points Page – The point's page aggregates the users Upoints information to a central location for reference. It separates the data into statistics eg. Points collected over a daily, weekly, monthly and yearly period. It also contains information on recent exchanges and the leaderboard for the most collected points. By clicking the 'arrow' in the top right hand corner the user brings the leaderboard into view. The leaderboard view is available as total or of individual stores with users rewarded additional Upoints based on their position in these rankings.

Enter Location – This page replaces the news feed of advertisements when the user is currently outside of available geo-fences. To remove this page and resume service the user must navigate to a geo-fence. The enter location page provides a button directly to the geo-fence location map.

Favourites – Items made favourite by the user appear on this list. The user can click on the list item to navigate to the advertisement. The list items delete automatically when the advertisement has exceeded the time limit or the user un-checks it as a favourite.

Locations – This interactive map shows the available geo-fences and their location. The user can pinch to zoom or use the integrated controls to navigate around the map.

Voucher Wallet – This digital wallet represents a list of the user's vouchers generated through point's exchange. By clicking on a voucher the user navigates to the digital voucher which can be exchanged in-store. Vouchers automatically delete after they have been used.

Voucher – A digital voucher that includes the users account information and the offer against which it was redeemed. Text based image used by the merchant application to facilitate the vouchers exchange.

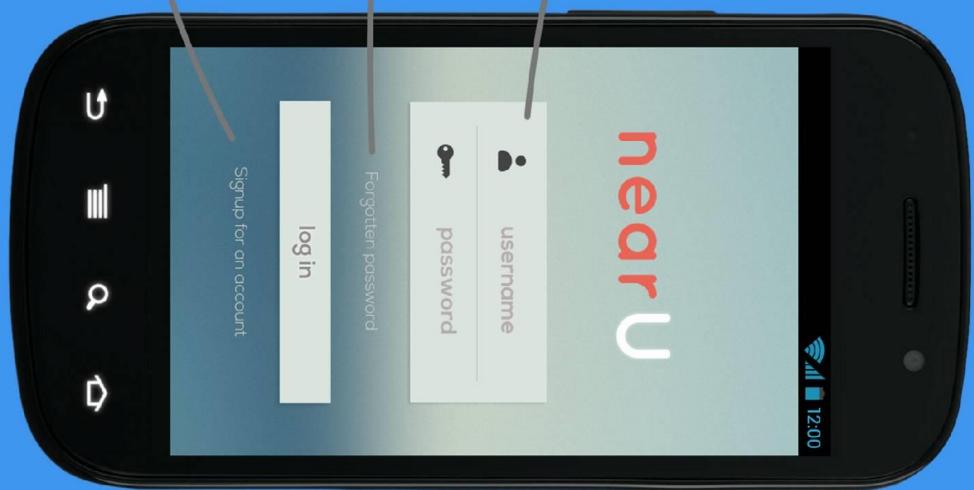
Settings – The settings page allows users to set access to Facebook, Twitter and Pinterest accounts to enable sharing from within the application. Clicking on the text of the list item raises the username and password settings for that particular account. An account with valid credentials is marked with a tick. A user has the option to uncheck notification and geo-fence notification settings.

Navigation – The application uses a side-navigation control that contains access to the news feed, points, favourites, voucher wallet, locations, settings and logout page. Situated below the navigation section is an account summary with details about the current users account, clicking on the users profile picture directs to the settings page.

Share This – The share this functionality is accessed by selecting any 'share this' button throughout the application. The share panel slides in from the right displaying social media icons for Facebook, Twitter, Pinterest and E-mail. Selecting a social media icon generates a popup dialog displaying the selected platform and the message to contain in the post. Once the user clicks 'send' on the dialog the points allocated for sharing the advertisement are added to the users account. Additionally the Facebook dialog offers

the opportunity to sign-in. Photo sharing is a feature of the application design and the dialog features an attachment icon ‘camera’ that users can select to add pictures to the social media share. Users have the possibility to share once on any platform and the sharing option for that advertisement is then greyed-out and unavailable again to that user.

Login

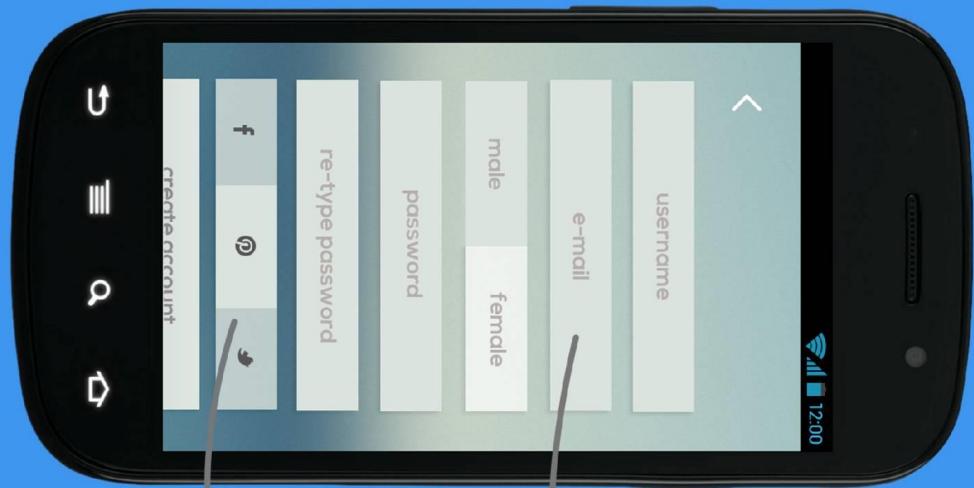


Username/password
combination
secured by SSL.

Users with forgotten passwords can
select this option to receive a new
password at their registered e-mail

log in

Signup for an account



<

username

e-mail

male female

password

re-type password

Required fields -
username, password, email, gender

Users can select to add credentials for
social media accounts
(Facebook, Pinterest, Twitter), this is not
mandatory for creating an account and
can be added at a later stage.

create account

Create Account

News Feed/Homepage

Voucher Feed

Changes the current feed of advertisements to a feed of UPoint vouchers (vice versa). Allows users to easily browse voucher opportunities.

Navigation - introduces the navigation from the left hand side of the screen

Store advertisements - created by

merchants and pushed to users inside a geofence. Advertisements that are recent and match user profiles (gender, favourites) are aggregated towards the top of the news feed



Vouchers offered by participating stores - this list includes all offered vouchers available in a specific geo-location.

The required points to get the voucher.

The user exchanges points for the voucher which is added to the users digital wallet.

More info - leads to the 'product page' which contains more information about the advertisement

Share-this introduces the share buttons panel from the right hand side of the screen

Favourite button - users can click to favourite an advertisement

Advertisement

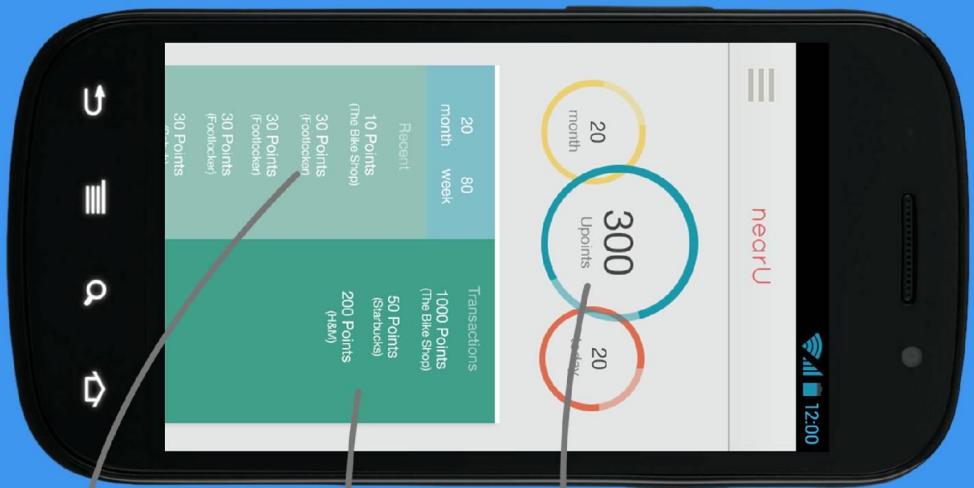
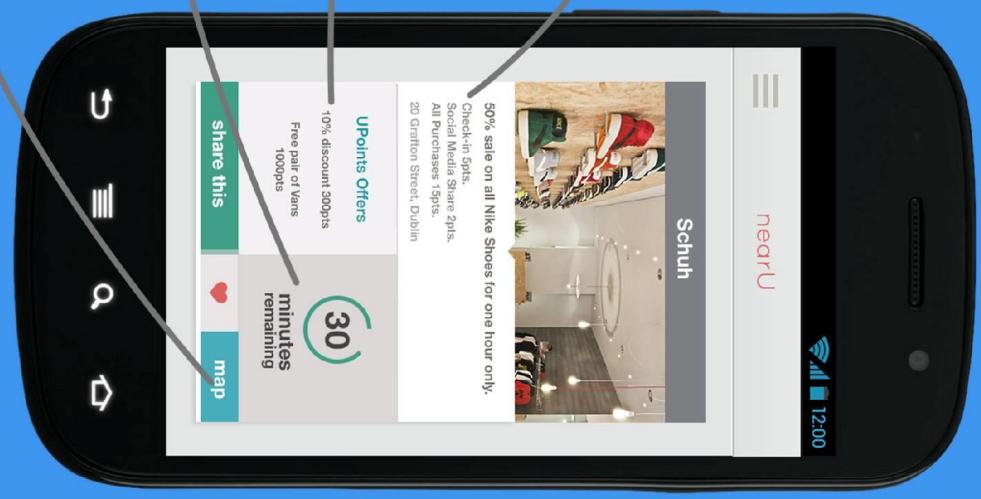
Advertisements are created by merchants to display sales/offers or to promote specific products/services

A list of available UPoint activities. The user can gain Upoints by interacting with the store in the ways listed here e.g. (check-in, social media).

Upoint vouchers are listed here, by selecting a Upoint offer the user exchanges points for the voucher offer.

The advertisement is set to a limited amount of time.

Clicking map brings the location of the store into view shown through Google maps.



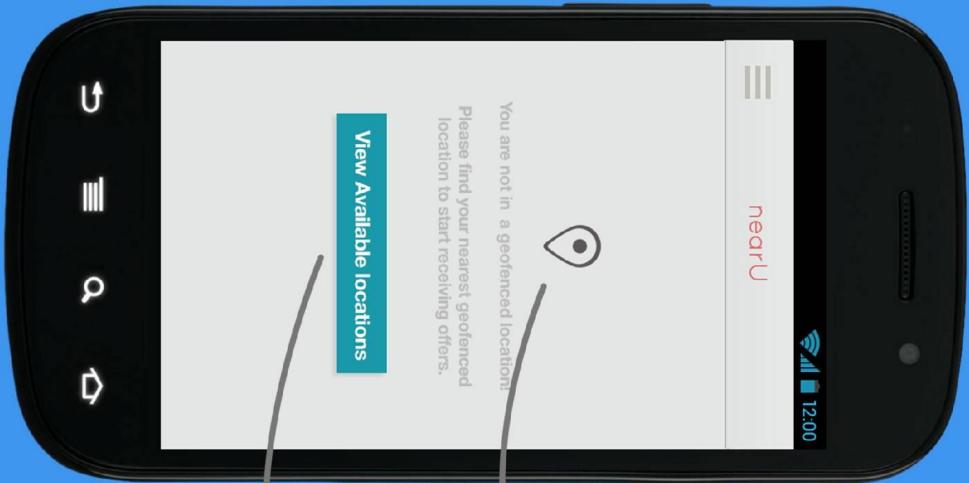
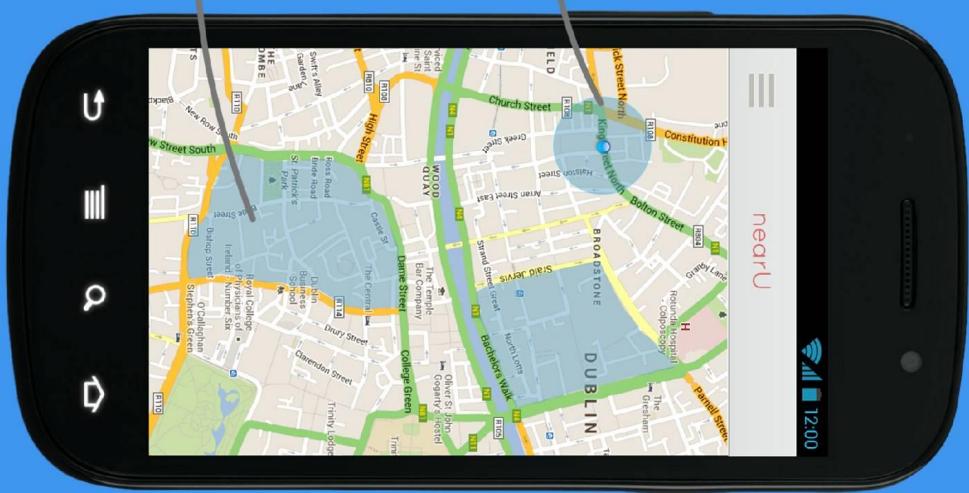
A leader board displaying current scores by other NearU members updates as users gather/interact with stores

UPoints

Geofence Lookup

Outside Geofence

The user's GPS position is displayed on the map.



New feeds are replaced with this screen when the user is outside of a geo-fence area.

Geo-fences are marked out in blue areas on the interactive map. The user can zoom/scroll.

Clicking on this button takes the user to the geo-fence lookup screen

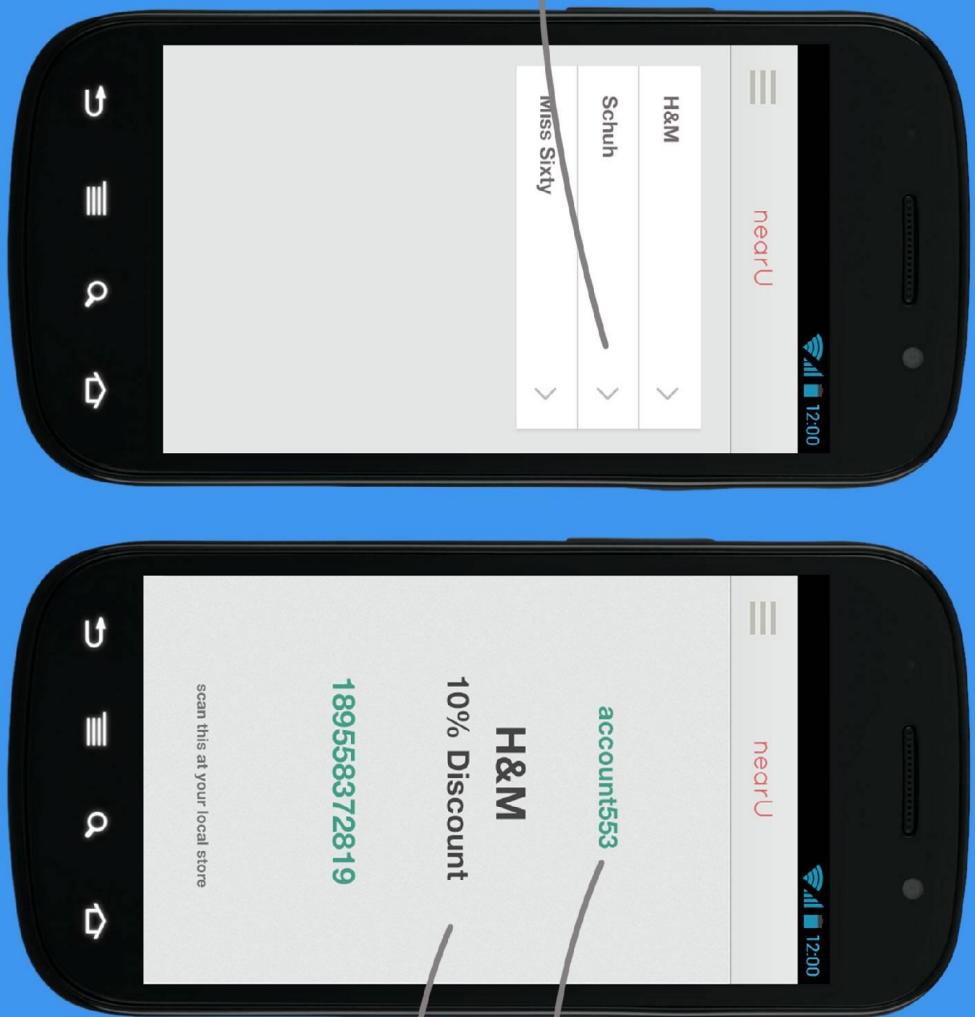
[View Available locations](#)

Voucher Wallet

Voucher

The voucher wallet stores the users redeemable vouchers.

Clicking on a link takes the user to the voucher.



The user presents the voucher in-store and the merchant application scans the account ID and voucher number.

Voucher name and value.

189558372819

Scan this at your local store

Navigation



Navigation panel slides in from the left- Allows users to continue browsing without navigating away from their activity.

Selecting a share icon presents the user with a dialog to share the advertisement on the chosen platform.

Account summary - owners
username
nearU

To resume activity click on the left hand panel.

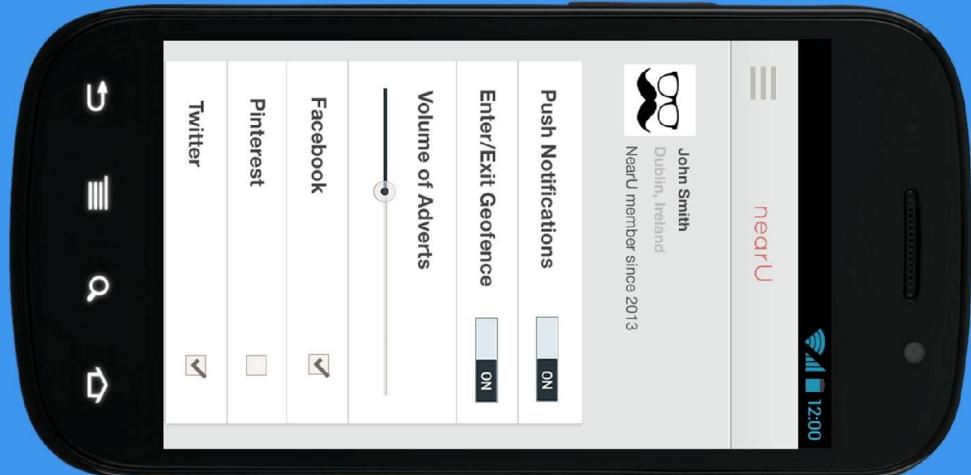
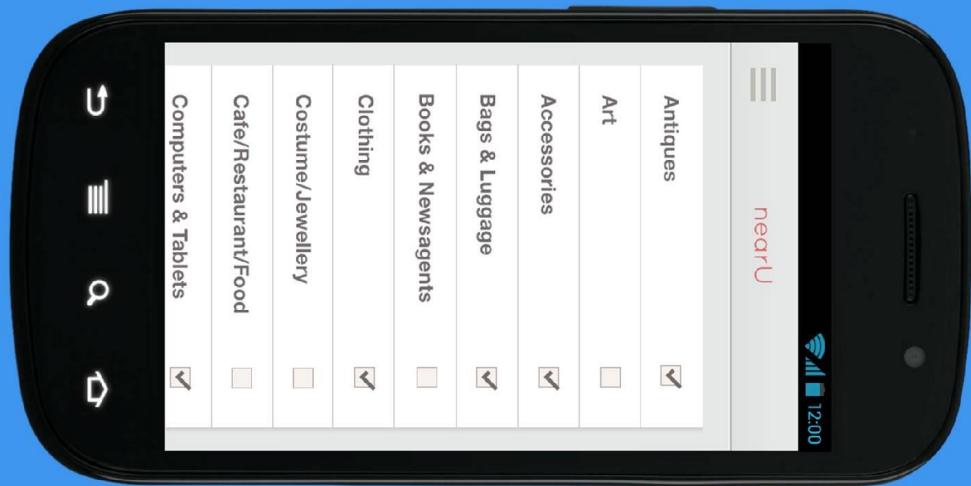
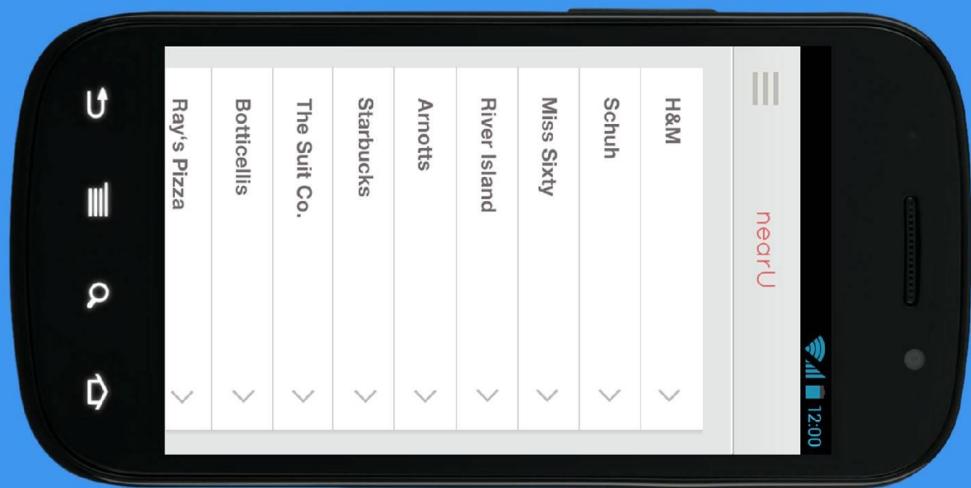
Share icons slide in from the left when a user clicks on any blue share button.

Share This

Favourites

Categories

Settings



When a user favourites an advertisement it is saved to the users favourites in a list style format. Clicking on a favoured advertisement sends the user to the advertisement page.

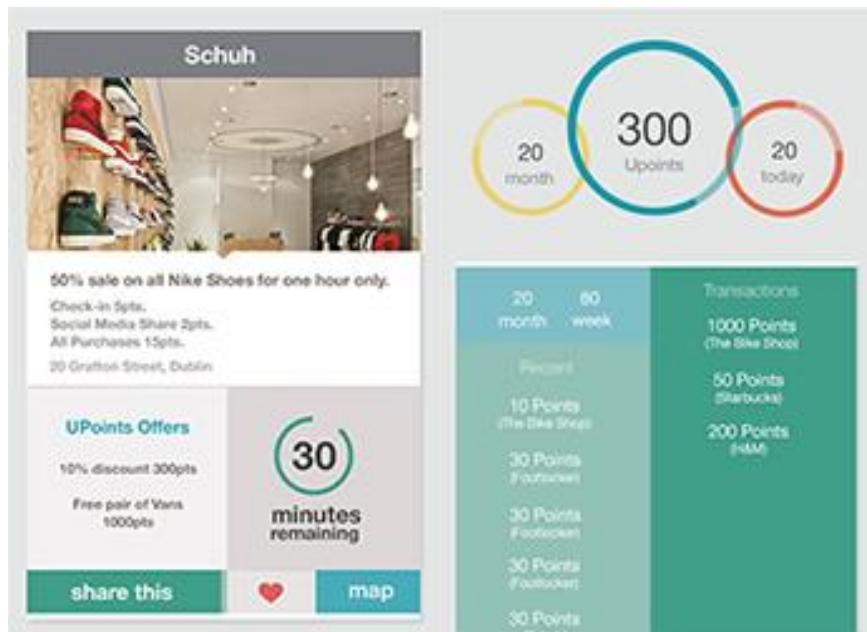
Selecting specific categories adds a personal element to the news feed of advertisements sending adverts with chosen categories to the top of the list.

The user can configure notifications and add credentials for social media accounts under the settings page.

Design Specification

According to Fadeyev (2009) mobile applications should have simple, intuitive and responsive user interfaces and the design we have chosen to build attempts to incorporate these features. To achieve this effect Nielsen's (1995) heuristics for user interface design (Appendix 16) have been applied to the thought and development process.

The application features a flat design with the UI elements conforming to this specific style. Flat UI is currently a popular design trend used by Windows and Google in their latest products and the result is a clean and colourful UI. '*Flat design schemes often use a lot of vivid colour. From colour blocking and shapes and bars to tints, colour is a key component to making it work*' (Cousins 2013). The use of contrasting colours and colour shades are apparent within the UI and distinguish buttons and panels from each other. One of the requirements for this product and a key design goal was to design a simple yet highly functional application. Using Nielsen's (1995) aesthetic and minimalist design heuristic the interface has been simplified and the use of the flat UI gives it appealing characteristics that differentiate controls and data with minimum fuss. The theme and interactive components have been designed with consistency a key element within UI design. The button interactions respond in similar ways, highlighting the text upon a click or changing the background colour to indicate an action has been taken. Nielsen (1995) highlights consistency and standards as part of his heuristics and this has been applied to every element within the UI.

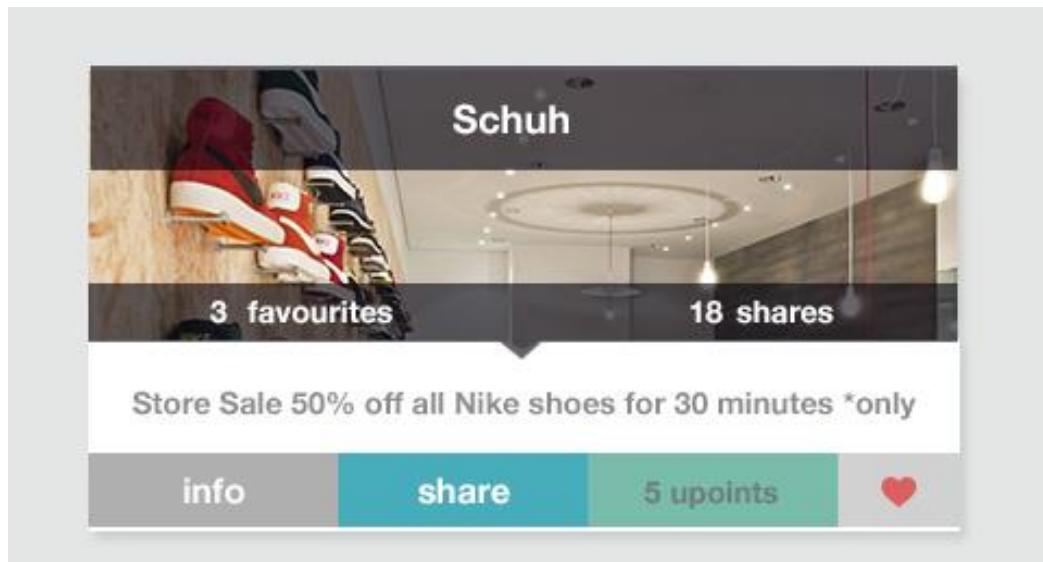


Colour shading and flat UI style (product and points pages)

The side navigation is inspired by an emerging trend in mobile application UI. The main navigation and share functionality incorporates the sliding side navigation technique to improve the UX and enrich the UI. An article on Android UI Patterns (2010) highlights how sidebar navigation speeds up the user's interaction with the application. For our design the availability of the sharing functionality as a component of the user's current page removes any requirement to navigate through multiple pages simplifying interaction and commitment to actions. Sliding panels are a consistent feature of the application (map, leaderboard) allowing large amounts of functionality or information to be retrieved quickly by the user without navigating them away from their current activity or overloading the contents of the screen.

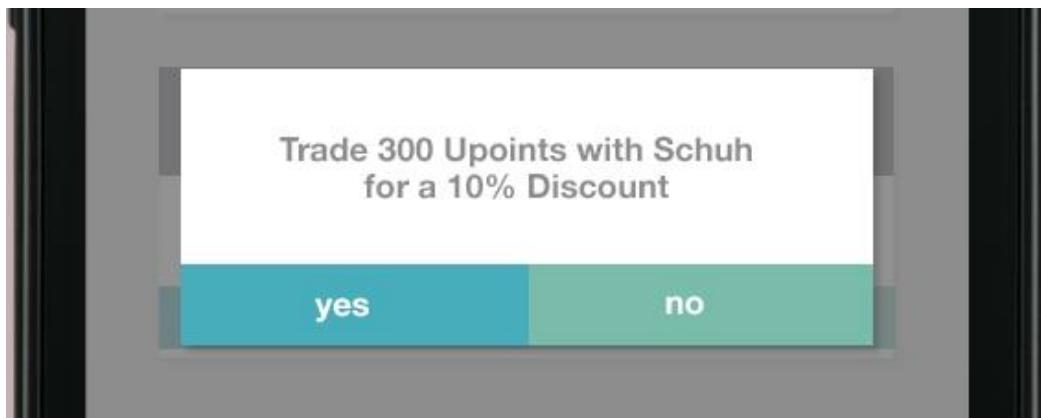
The news feed inspired design for the main page has been chosen to provide an aesthetically pleasing method of displaying large amounts of information that is easily grouped with functionality. Grouping advertisement features together with button controls gives the application a unique design that is consistent and easy to interpret.

Turrell (2010) writes that the news feed is native to the digital world and is ideal for presenting vast amounts of information.



An advertisement as it appears in the news feed

Vasile (2013) writes that constant dialog is important for users to determine if they have done something right or wrong and Nielsen (1995) highlights the importance of dialog messages in his usability heuristics. The application features both subtle and obtuse dialogs depending on the user interaction. For example important actions present the user with a dialog message that alerts the user to the consequence of their actions and prompts them to continue if they are happy with the outcome or decline to undo the action as with point's exchanges. In contrast making an article a favourite simply changes the 'heart icon' to green.



Dialog confirming a user's voucher trade.

Text is used throughout the application design to promote recognition rather than recall a key usability heuristic. This minimises the user's memory load improving the UX of the system. Allowing users to understand the functionality or action of the system through text is preferable over icons as Gocza (2010) highlights that icons can prove difficult and inefficient for memory recall. For this reason text has been chosen for the key controls such as 'info' and 'sharing'. Icons have been used sparingly and feature in the navigation controls and this consistency to keep icons to navigation and text to actions has been implemented with the user in mind.



Icons are used sparingly and in self-descriptive locations.

Dialogs are used throughout the application to let the user know the systems status 'Nielsen's visibility of system status'. When the user is unable to receive data via the news feed the screen is explicit in this status. Notification messages alert the user to

entry within a geofence directly through the phone, this allows the application to run in the background while notifying the user about changes to the applications state.

Usability Testing

Usability testing is an important step in the application development process as it enables the development team to identify aspects of the design they have over-complicated or designed insufficiently. The prototyped application we developed allowed us to field test the user interface of the design and understand how potential users would interact with the system features. According to Anthony (2011) the key benefits of usability testing include cutting costs, improving the user experience therefore improving customer retention, spotting obvious design issues and ultimately that objective feedback is more important than opinion.

How we conducted the test – 2 students selected from the class were given smartphones with the prototype application installed. We used smartphones with different sized screens to test the application interface in multiple environments. While they used the application we asked them to call out what they were thinking while conducting set tasks, this is known as think aloud user testing and captures the users thought process while they are interacting with the interface. Nielsen (2012) writes that the main benefits of think-aloud testing include the cost-effectiveness and convincing results returned by users. During this study their thoughts were recorded and additionally we compiled a survey and asked them to complete it after using the application.

Handset Make/Model	Screen Size/Resolution
HTC Nexus One	480 x 800 pixels, 3.7 inches (~252 ppi)

	pixel density)
Samsung GT15500	240 x 320 pixels, 2.8 inches (~143 ppi pixel density)

Tests were carried out using handsets with different sized screens

Key Findings – Both students responded positively to the interface design indicating that they found it clear, concise and easy to use. There were no issues with the naming conventions and the students found the navigation effective and clear. Both students indicated that the interface was fun to use and they enjoyed the layout of content and style of elements.

Major issues – There were no major usability issues with the interface design.

Minor issues – Both students acknowledged that the interface buttons could be bigger as they found they mishit links on more than one occasion. This was more significant on the device with a smaller screen (Samsung GT15500).

Question	Student 1 (HTC)	Student 2 (Samsung)
Is the interface easy to use?	Yes	Yes

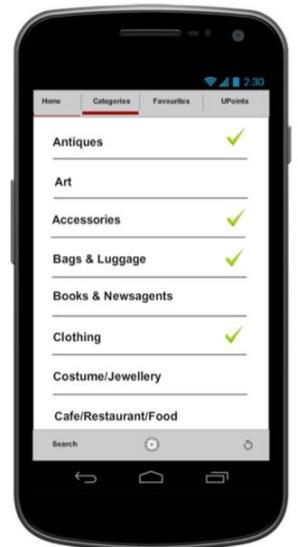
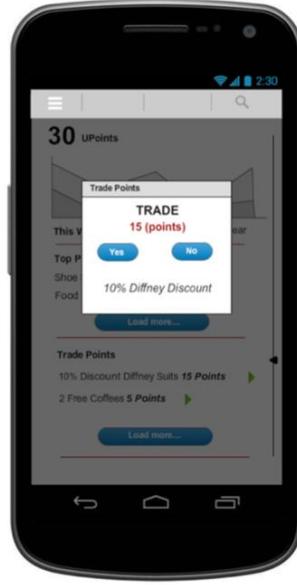
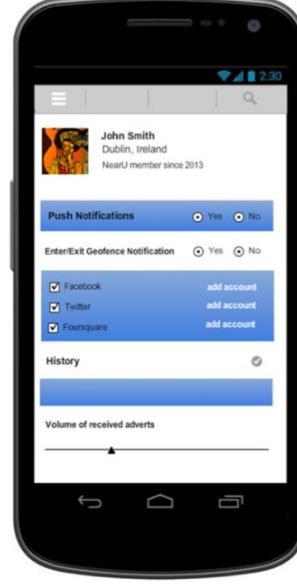
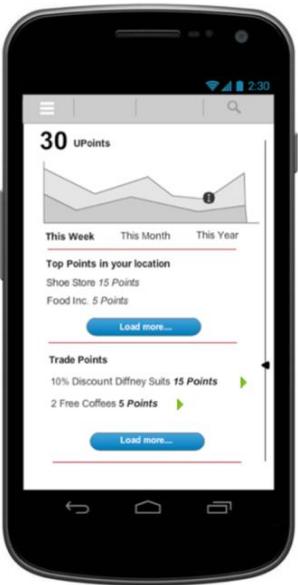
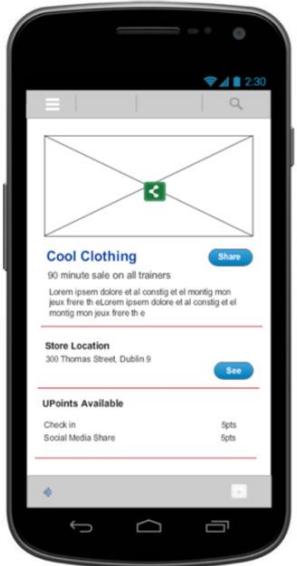
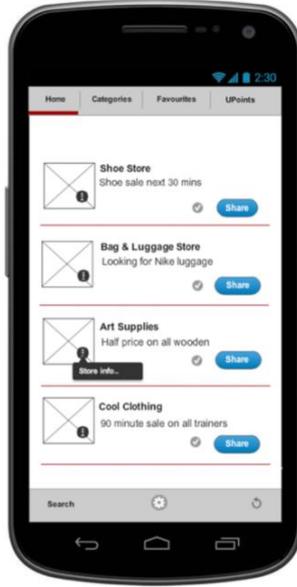
Do you understand the button controls and the actions they take?	Yes	Yes
Could you find the navigation easily?	Yes	Yes
How easy was the application to navigate?	It was easy to navigate	The application was easy to navigate and worked as expected
Were the icons good representatives of the action?	Yes	Yes
Do you enjoy using this interface?	Yes	Yes
If (yes) why?	The information is presented in a clear manner. It is easy to read and I like the use of colours.	Yes the interface is fun to use because it is simple and works as expected.
What changes would you make to design?	It could be good to increase the size of the elements on screen, the navigation animation could be smoother	The share and like buttons are quite small and difficult to hit, especially on the product page, also there is no indication that the user should hit the text on the product page to accept

		the offer
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Data taken from the user interface testing study

Wireframes

Silva (2012) writes that the wireframing process is an important step in the development phase providing a blueprint for the team to work and build from. The wireframe process enabled the team to determine an effective way of designing and linking the functionality of the application interfaces. This process was the first step in designing the application and made the final design more cohesive by improving the structure of content and navigation. It also enabled the team to identify forgotten requirements (Kelvin 2013) early in the design process and improve the features available through the application.



Nearu Web Portal

Functional Specification

The web portal provides a web based service for shop owners to upload product information and deals. Product information is specified and values including time remaining, number of offers and current Upoint deals can be uploaded to the server. This information is presented by the view layer of the main application.

Features/Functionality

- Merchant account
- Text/Image Upload
- Offer/Upoint settings
- Content management system

Login – The merchant logs in to the web portal through a browser.

UI – The UI is split into 2 panels with the left hand panel governing the creation of new advertisements and offers and the right hand panel containing the configurations for each of these articles. The left hand panel can be used to create a new advertisement or Upoints deal. Selecting create a new article from the left hand corner presents a drop down menu with the options ‘advertisement’ or ‘upoints’. Clicking ‘create’ creates the chosen article and adds it as a subset to its parent. Parents are listed in the left hand panel and contain all of the children articles created by the user; the parents are fixed to ‘Advertisements’ and ‘UPoints’. Clicking on the UPoints parent link introduces the controls to add/remove point’s availability for the store. The settings here control how consumers can interact with the store and the points attached to each interaction eg. 5 points for checking in.

Available configurations -

- Check-in
- Share w/social media
- Share w/photograph
- Favourite

Article Creation -

UPoints – The UPoints article allows the user to configure the settings for UPoints deals offered by the store. It contains a title, description and point's value specified by the user. Selecting save and publish sends the offer with all store advertisements.

Advertisement – An advertisement article requires the user to fill out the title, description, time remaining, category and image fields. Selecting save and publish sends the offer to the Nearu consumer application.

Design Specification

The web portal has been designed to be as easy to use as possible. The creation of new advertisements should be a simple process with a short learning curve. The goal is that first time users will easily be able to setup new advertisements and maintain the stores presence on Nearu.

To achieve this, the controls have been well labelled to promote user recognition and guide users through creating advertisements and offers. Fields and controls are consistent in design and react the same way upon user interaction. The controls have been limited to prevent errors and the misplacing or failure of adverts. Help and documentation are included with the web portal to aid usability and user interaction. Documentation on the management of advertisements is available through the Nearu website with links to this available through the portal.

Web Portal (Creating an advertisement)

Select the item to create from the dropdown menu (advert or voucher)



Store name



Allow drag & drop
Reordering



Main

Advertisement Name

50% Sale on Mens Shoes

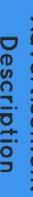
Advertisement Description

Sale on mens shoes for the next 2 days - casual and smart shoes available

Advertisement Image



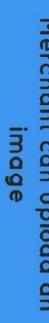
Advertisement
Description



Name of the advertisement



Merchant can upload an
image



Advertisements and Upoint
vouchers are grouped under
their respective parents.
Selecting the UPoints parent
tab allows the merchant to set
the available Upoint
interactions and scores e.g.
check-in, social media shares

The time/date for the
advertisement to finish

Select the category



Technical Diary

24th May – 30th May (Concept Revision)

The first phase of development involved idea revision and refining the concept we had presented in the proposal. There were aspects of the idea that needed to be better understood. During this phase the decision to implement a voucher based system was made and this led to the requirement of 2 applications, one for merchants and one for consumers. The initial idea to use NFC technology for the majority of information exchanges was downgraded and the use of an application to manage till point exchanges was chosen to provide flexibility and a standardised well supported method of exchange. It was also necessary to understand the points system and how the user would collect and spend these points. The team decided on a fixed set of interactions that were afforded to users to standardise the points system. The revision of the required components allowed us to move into the next phase of development understanding the components architecture and choosing the right technologies.

1st June – 16th June (Information Architecture)

After the concept had been finalised it was necessary to research technologies and tools for building the application and choosing methods for achieving the required functionality. Several technologies were researched as we wanted to build a system that incorporated a lightweight secure infrastructure that afforded flexibility and scalability. To achieve this it was necessary to contrast the advantages and disadvantages of using one style/technology over another and select the most suitable, cost-effective and reliable strategy. During this phase the front-end and back-end architectures were designed and respective technologies included in the design. Understanding the capabilities of the technology and how the individual components interacted as a whole allowed the next phase of development to take place now that requirements and features were established.

17th June – 21st June (Wireframes)

Now that the requirements for the concept were truly understood the next phase was to develop wireframes. The wireframes provided a basic structure of the application interfaces highlighting forgotten requirements and illustrating the workflow of the proposed application. This allowed the team to understand better the individual components and how users would interact with the system. It also allowed us to understand the most effective design for displaying information and the flow of the UX. Features such as the point system and check-in processes were incorporated into the design at this phase and the interaction between interfaces was mapped using the wireframes.

21st June – 30th June (UI design)

With the wireframes providing a skeleton of the application the next phase was to flesh out those blueprints with fully developed interfaces. Research was conducted into popular design trends and effective UI and UX design and the team downloaded the latest shopping applications to understand popular layouts and features currently in use. Appealing features found through the earlier research were applied to the design and a colour scheme was chosen and applied consistently throughout the application. The UI design features every UI screen and documents every step and feature available to the user. Iterations of the design were presented to the team to make suggestive changes or to acknowledge additional features and potential improvements. The UI design formed the basis of the application interfaces and could be used in the next stage of development to rapidly prototype the basic functionality of the application.

1st July – 27th July (Front-end development)

During the application development phase a working prototype of the consumer application was developed. This was developed to provide an example of the key

interfaces of the application concept. The application was developed using the Android SDK. The UI was coded using HTML and CSS and designed from the specification from the previous UI design phase of development. Jquery was used for the interactive elements of the application and the prototype provides a real world implementation of how the application would look and feel. The Gimbal SDK was used to create a prototype of the geofence triggers and emulate the entry/exit of a user within different geofenced locations. During this phase the team learned about geofence management and the creation and testing of geofence locations. It was necessary to carry out field tests using the Gimbal application to understand the granularity of the service and the precision of geofenced locations. To conclude the front-end development light user testing was carried out using peers from the class. 2 students were used in this study to test the usability of the application and their feedback was noted and used in the final prototype.

28th July – 31st July (Back-end development)

The web portal was configured on a hosted server with a dedicated database to support the uploading of merchant advertisements. A MySQL database was installed on the server along with PHP controller scripts to facilitate data being sent from the database to the prototyped application. The front-end has been configured to receive a list of current advertisements from the database on the back-end. The web portal installation provides a working example from the merchant's perspective. Additional MySQL tables were created to illustrate the structure of the complete database as used by the consumer application to store account information.

1st August – 6th August (Marketing Website)

The marketing website was designed during the final week of the project submission. It features information and a how to use guide for the Nearu project. The team worked together on the website copy for the design.

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Appendices

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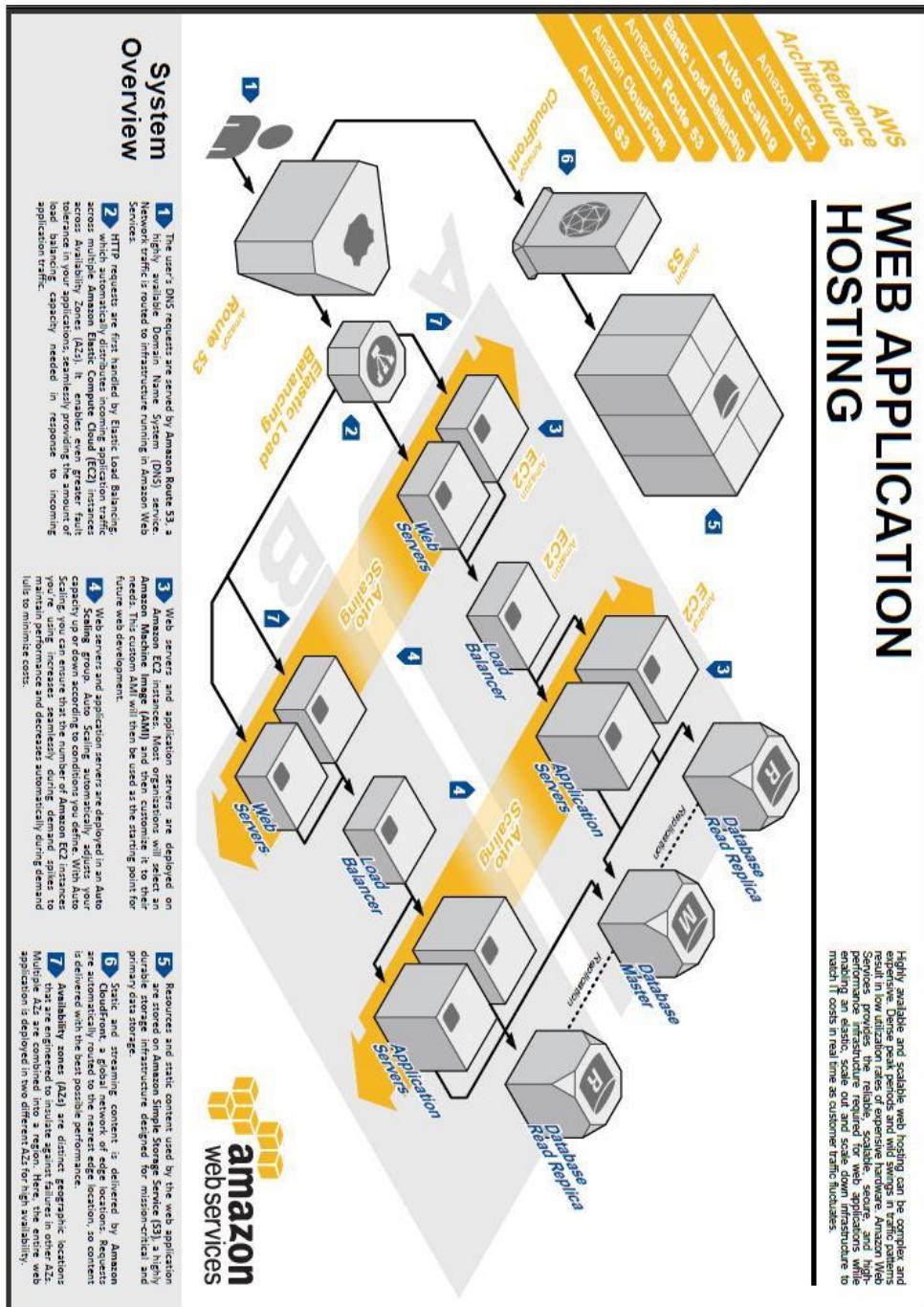
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10 Usability Heuristics for User Interface Design

About Jakob Nielsen

Summary: The 10 most general principles for interaction design. They are called "heuristics" because they are more in the nature of rules of thumb than specific usability guidelines.

Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

User control and freedom

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

Recognition rather than recall

Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

Flexibility and efficiency of use

Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

Aesthetic and minimalist design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

Help users recognize, diagnose, and recover from errors

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

Appendix.17: Nearu Consumer survey <http://www.surveygizmo.com/s3/1288888/NearU-application-Customer-Survey>

NearU Application Customer Survey

Page One

Using the Likert scale below please rate your level of agreement with the following statements about reward programs including travel/air miles, credit card, supermarket and retail reward smartphone app's:

1. Loyalty programs are definitely worth the effort of participating? *

Strongly disagree Disagree Neutral Agree Strongly agree

2. Programs are a part of my relationship with the company.

Strongly disagree Disagree Neutral Agree Strongly agree

Influence of programs on your shopping habits:-

3. I modify when and where I buy items to maximise the points I receive for purchases

Strongly disagree Disagree Neutral Agree Strongly agree

4. I modify what brands I buy to maximise the points I receive for purchases.

Strongly disagree
 Disagree
 Neutral
 Agree
 Strongly agree

you participated in the following programs, for example, I have redeemed points for this program in the last year:-

5. Grocery

- Yes
 No
-

6. Financial

- Yes
 No
-

7. Fashion/Retail programs

- Yes
 No
-

8. Entertainment

- Yes
 No
-

9. Travel/Hotel.

- Yes
 No
-

% of members active by program type:-

10. Over the last 12 months I have collected loyalty points.

- Yes
 No
-

Influences on Loyalty

11. I modify when and where I buy items to maximise loyalty point

- Strongly disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly agree
-

12. I modify the brands I buy to maximise loyalty points.

- Strongly disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly agree
-

13. Programs make me more likely to continue to do business with a company

Strongly disagree Disagree Neutral Agree Strongly agree

Reasons why you may stop you from joining a loyalty program

14. If there is a fee to join

Strongly disagree Disagree Neutral Agree Strongly agree

15. Benefits are not relevant/poor rewards

Strongly disagree Disagree Neutral Agree Strongly agree

16. It takes too long to accumulate rewards/

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<input type="radio"/>				

17. I have too many cards/I'm member of enough of programs,

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<input type="radio"/>				

18. They want too much personal information

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<input type="radio"/>				

19. Difficult to sign up/join

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<input type="radio"/>				

20. Privacy concerns.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<input type="radio"/>				

If you have stopped/not participated in a certain loyalty program please indicate from the reason below why you stopped:-

21. I just don't shop at those retailers anymore

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<input type="radio"/>				

22. I was just not earning enough points/rewards fast enough.

- Strongly disagree
- Disagree
- Neutral

- Agree
 Strongly agree

23. They did not communicate enough

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<input type="radio"/>				

24. The rewards did not appeal to me

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<input type="radio"/>				

25. Too much hassle to participate.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<input type="radio"/>				

Have you done any of the following things in relation to loyalty programs:-

26. Receiving points for referring friends

- Strongly disagree
 Disagree
 Neutral
 Agree
 Strongly agree

27. Gained VIP access to exclusive events or experiences, like special services such as front of the line access, concierge

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<input type="radio"/>				

28. I find ways to engage with this program beyond just collecting rewards e.g online discussion/forums/reviews.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<input type="radio"/>				

29. I seek out ways to share this program with others.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Not Applicable
<input type="radio"/>					

30. Earning benefits for interacting with the program via social media.

- Strongly disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly agree
-

31. Shopped at a certain location so you could "check-in" on social media.

- Strongly disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly agree
-

32. Supposing your loyalty program offered only three benefits which of the following would you chose from below?

- "check-in" on social media
 - Earning benefits for interacting with the program via social media.
 - Seeking out ways to share this program with your friends/others.
 - Finding ways to engage with this program beyond just collecting rewards e.g online discussion/forums/reviews.
 - VIP access to exclusive events or experiences, like special services such as front of the line access, concierge.
 - Receiving points for referring friends
-

Communications between you and a loyalty program:-

33. The communications I receive from loyalty program are relevant to me.

- Strongly disagree

-
- Disagree
 - Neutral
 - Agree
 - Strongly agree
-

34. I always read the communications that are sent to me from this program.

- Strongly disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly agree
-

35. The loyalty program sends me communications too often.

- Strongly disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly agree
-

36. For each of the program aspect, please select the communications methods you prefer to receive information from, please select all that apply

- (a) Email
 - (b) Mobile including app, mobile website, text messaging.
 - (c) Printed mailing
 - (d) On-site at the retailer/institution
-

37. what are some of the things that would prevent you from joining another reward program in the future, please select all that apply

	1	2	3
(a) Privacy concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Programs require too much personal information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(c) The GPS locator kills the battery on my smartphone.

Using the scale of creepy and weird versus cool and exciting, please indicate your openness or desire for your reward program to engage with you in the following ways:-

38. Allowing programs to review your friend's status updates/photos to determine your eligibility for benefits.

Really creepy and weird Creepy and weird Neutral Cool and exciting Really cool and exciting

39. Offer benefits to those who provide the program with access to personal information about you (such as personal income, household composition, etc.)

Really creepy and weird Creepy and weird Neutral Cool and exciting Really cool and exciting

40. Provide your personal credit card number to a retailer via their website for credit on statement if you spend a certain amount.

Really creepy and weird Creepy and weird Neutral Cool and exciting Really cool and exciting

41. Ask you for personal info when enrolling to target promotions to your specific demographic.

Really creepy and weird Creepy and weird Neutral Cool and exciting Really cool and exciting

42. Personalised discounts on your favourite items, based on your purchasing habits

Really creepy and weird Creepy and weird Neutral Cool and exciting Really cool and exciting

43. Personalised offers you want based on your preferences that you manage and update.

Really creepy and weird Creepy and weird Neutral Cool and exciting Really cool and exciting

44. Special benefits to those who "like" or "follow" a program on Facebook/Twitter/Pinterest

Really creepy and weird	Creepy and weird	Neutral	Cool and exciting	Really cool and exciting
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

45. Determine your location using your smartphone and offers you deals if you near a partner retail store.

Really creepy and weird	Creepy and weird	Neutral	Cool and exciting	Really cool and exciting
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

46. Set preferences for purchases on your smartphone such as upon arriving at partner retail store, your order is processed and paid for instantly (e.g., your morning beverage order)

Really creepy and weird	Creepy and weird	Neutral	Cool and exciting	Really cool and exciting
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

47. What age are you?

- under 18
 - 18-24
 - 25-34
 - 35-54
 - 55+
-

48. Are you male/female?

- Male
 - Female
-

Submit

0%

Appendix.18: Nearu merchant survey <http://www.surveygizmo.com/s3/1288880/NearU-Concept-Study>

Nearu Concept Study

**Please read before completing the survey*

What is Nearu?

Nearu is a downloadable smartphone application that uses geographical location mapping to market goods and services.

Who is it for?

Shops/Retail Stores & consumers

What does it do?

Nearu rewards consumers for interacting with the store. The goal of Nearu is to increase footfall for high street stores. It is a marketing tool that allows retail stores to directly market their products to nearby consumers.

How does it work?

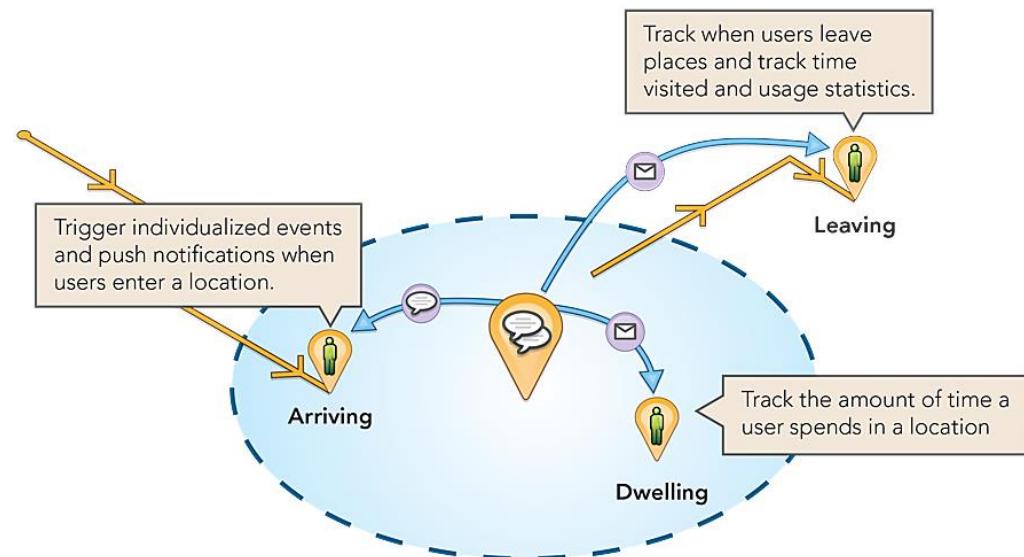
The application pushes notification messages to consumers that are within a precise geographical distance. Consumers can only receive notifications once they enter this geographical location. For example - 500m of the shopping centre.

Messages are created by store-owners and comprise details about offers, promotions, sales or goods/services. Messages can include multiple media (text, photo and video).

Consumers receive messages on mobile devices and can search by category, product/service through a news feed of aggregated store messages. The service can be personalised over time by the consumer by selecting favourite stores and product categories.

Consumers are rewarded for signing into the store and sharing this through social media. Reward points (U Points) scale depending on the number of shares eg. Sharing across four social media platforms (points * 4). Points can be redeemed against the products/services specified by the store. For example 500 points equates to a 5% discount on next purchase. (It is the responsibility of the store to set the rewards offered to consumers that collect U Points).

Example - 500 metre Geofenced area that pushes notifications to consumers when they enter the location.



Q. What is your company name?

A.

Q. What category of business are you? (Retailer, Clothing, etc) *Please tick one*

A.

- Antiques
- Art
- Accessories
- Bags & Luggage
- Books & Newsagents
- Café/Restaurant/Food
- Clothing
- Collectibles
- Computers & Accessories
- Costume/Jewellery
- Craft Materials
- Dolls & Bears
- DVD, Film, TV
- Events Tickets
- Garden & Patio
- Health & Beauty
- Holidays & Travel
- Home, Furniture, DIY
- Jewellery/Watches
- Mobile Phones/Communication
- Music
- Musical Instruments
- Pet Supplies
- Pottery/Porcelain/Glass
- Property
- Sound/Vision
- Sporting Goods
- Tattoo Parlour
- Toys/Games
- Video Games & Consoles

Q. How old is your business?

A. *Please tick one*

- 1 year
- 2 year
- 3 year
- 4 year
- 5+

Q. What marketing do you currently use?

A. *Select Those That Apply:*

- Social Media (Facebook, Twitter)
- Radio
- Print (Paper, Magazine, Flyers)
- Print (Billboard, Poster Campaign)
- Television
- Text Messaging
- Google (Search Engine Advertising)
- Website

Q. Do you currently use any software, tools or applications yourself for marketing?

A.

- Yes (If yes please specify)
- No

Q. What are your most effective marketing tools/strategies?

A. *Select Those That Apply:*

- Social Media (Facebook, Twitter)
- Radio
- Print (Paper, Magazine, Flyers)
- Print (Billboard, Poster Campaign)
- Television
- Text Messaging
- Google (Search Engine Advertising)
- Website
- Promotions
- Sales

Q. On average how much do you spend on marketing a year?

A. *Please tick one*

- 0 – 500
- 500 – 1000
- 1000 – 2000
- 3000 – 5000
- 5000 – 10000

- 10000 – 20000
- 20000+

Q. Do regularly create/participate in promotions and sales for your store?

A.

- Yes
- No

Q. Are you aware of the use of mobile applications to increase customer interaction?

A.

- Yes (If yes please specify)
- No

Q. Are you aware of location based software to push marketing notifications to consumers?

- Yes
- No

Q. Are there any retail/shopping smart-phone applications in the current market that you use or would recommend?

A.

For the next set of questions please indicate your level of agreement to the following statements by selecting the most appropriate answer -

Q. I have time for technology and would be willing to use the latest technologies for my business?

A.

- Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Disagree

Q. At some stage I will use mobile advertising.

A.

- Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Disagree

Q. Mobile advertising is a great idea?

A.

- Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Disagree

Q. I would be willing to learn to use the Nearu technology.

A.

- Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Disagree

Q. I would like the opportunity to use the Nearu application?

A.

- Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Disagree

Q. I am aware of NFC capabilities on smart-phones.

A.

- Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Disagree

Q. I would be happy to run my own promotions through the Nearu application.

A.

- Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Disagree

Q. Using the Nearu application has the potential to increase footfall in-store.

A.

- Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Disagree

Q. I feel that mobile marketing is a waste of time.

A.

- Agree
- Somewhat Agree

- Neutral
- Somewhat Disagree
- Disagree

Q. Notifying consumers about products/services within the stores vicinity would be worthwhile.

A.

- Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Disagree

Q. I have privacy concerns about using the Nearu technology.

A.

- Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Disagree

Q. Which services would interest you the most in our location-based marketing application?

A. *Select Those That Apply:*

- Deals/Promotions Advertising
- Attracting customers in-store
- Loyalty Program/Rewards
- Awareness about shop location
- Social media marketing

Q. How much would you be willing to pay for this type of service on a yearly basis?

A. *Please select one*

- 50 – 100
- 100 – 250
- 250 – 500
- 500+

Appendix.19: Tempster features

The Problem

Are you tired of having empty seats or unpredictable busy periods at your venue?

We understand that lots of seats can go unfilled and last minute cancellations can cause havoc to your profit margins.

We have developed a cost effective, real time solution to get burns on seats when you really need them.



The Temptster Solution

Temptster is a real-time deals business for the hospitality sector. All deals are for immediate use for today only.

Temptster is app based, so if you are quiet now, we can bring you customers within 15 minutes who are near your venue.

You can host deals for VIP customers only and contact VIP customers for free outside of deals to promote your venue.

Why Temptster?

- 1 Attract Customers Now**
Customers visit our app to socialise now
- 2 Full Control of Deals**
 - Takes 20 seconds to make a deal live
 - You control all aspects
- 3 No Fees or Charges**
 - Unless someone buys
 - Risk free trial
- 4 Build Customer Relationships**
 - VIP customers
 - New customer groups

Why will customers use Temptster?

Location, location...

Deals are shown in proximity to the customer's location



VIP Relationships

- Customers can become VIPs at their favourite venues
- Merchants can host exclusive VIP deals
- Merchants can communicate for free with VIPs via weekly push notifications
- Comprehensive reporting on who your VIPs are and where/when they buy

Temptster showcases:

- **What's Hot**
- **What's on Now**
- **What's Affordable**

Help people **Celebrate Spontaneity!**

Temptster
Celebrate Spontaneity!

About Temptster
Temptster is an Enterprise Ireland funded start up and will launch in the UK in early 2013. It was founded by Oliver Fegan from Fegans Foodservice who has in-depth knowledge of the hospitality sector.

Marketing Strategy
Celebrate Spontaneity Central Theme
Advertising in DART & Buses
Viral Films & Promotions
Competitions for Young Professionals



Find out more, get in touch... info@temptster.ie 01 415 1235 www.temptster.ie

Appendix.20: Loylap features

Mobile Loyalty for your Business

Loylap is THE mobile app for loyalty programs – put YOUR loyalty program on YOUR customer's smart phones.

Bring your brand mobile with Loylap and tap into our large customer base.

A few simple steps and you're ready to start rewarding your most loyal customers quickly and easily:

- Sign up online @ www.loylap.com
- Register your Business for free
- Set up your tailored loyalty program to utilise the stamps or points system
- Download the free "Loylap Partner" App from the App Store or Google Play

Your Loyalty Program is now mobile!

For more information or a call-back, contact info@loylap.com or visit the website

Sign up today!

Available on the iPhone App Store

ANDROID APP ON Google play

Choose the best bars, clubs or restaurants in seconds

Venues are shown in order of proximity to you

Select a time...
...and your party size

220

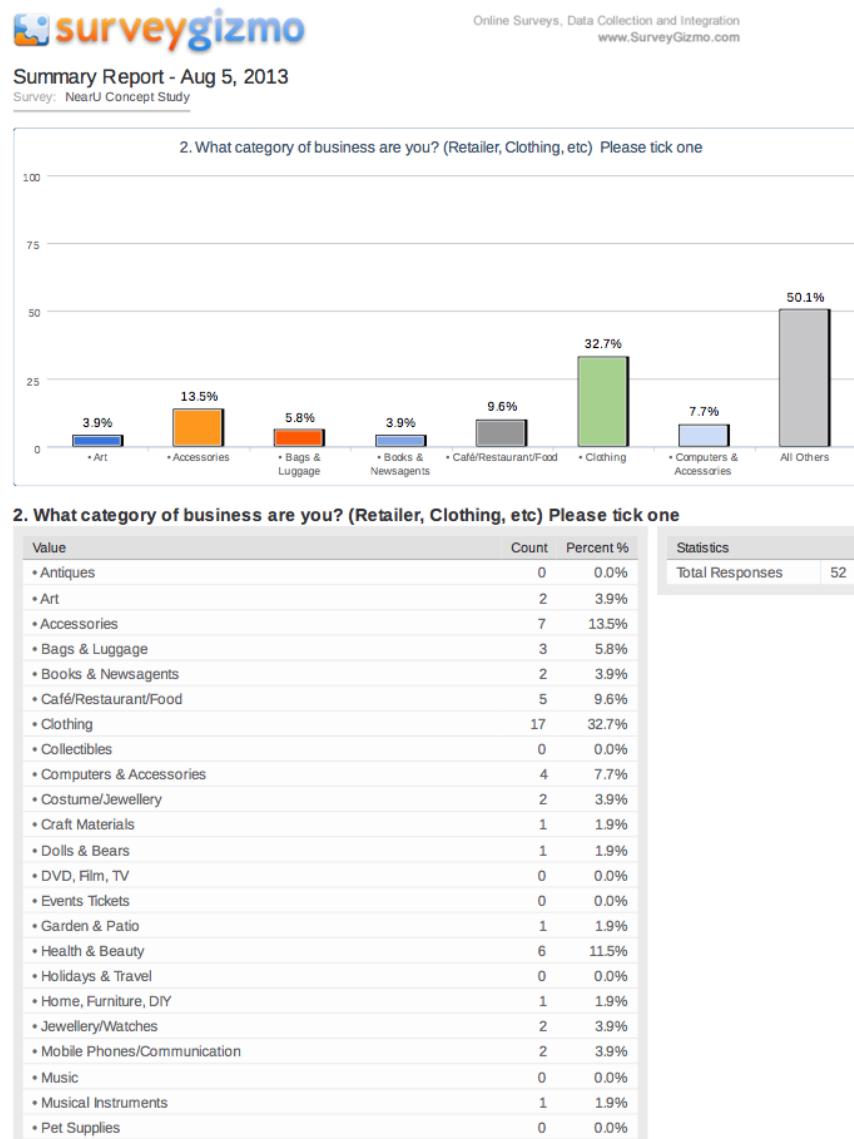
Appendix.21: Business cards from Stephen green merchants who participated in the survey.



Appendix.22: Loyalty cards from competitors and business cards from local businesses.



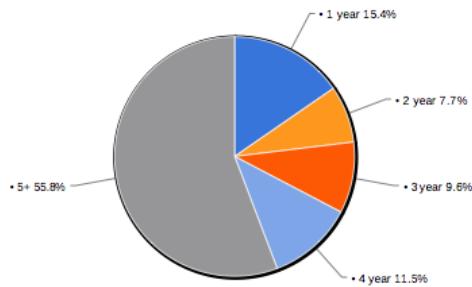
Appendix.23: Concept Study



Results

• Pottery/Porcelain/Glass	1	1.9%
• Property	0	0.0%
• Sound/Vision	0	0.0%
• Sporting Goods	3	5.8%
• Tattoo Parlour	0	0.0%
• Toys/Games	0	0.0%
• Video Games & Consoles	0	0.0%
Off-Sales/Wine Merchant	2	3.9%
Bicycles	1	1.9%
Shoe-ware	2	3.9%

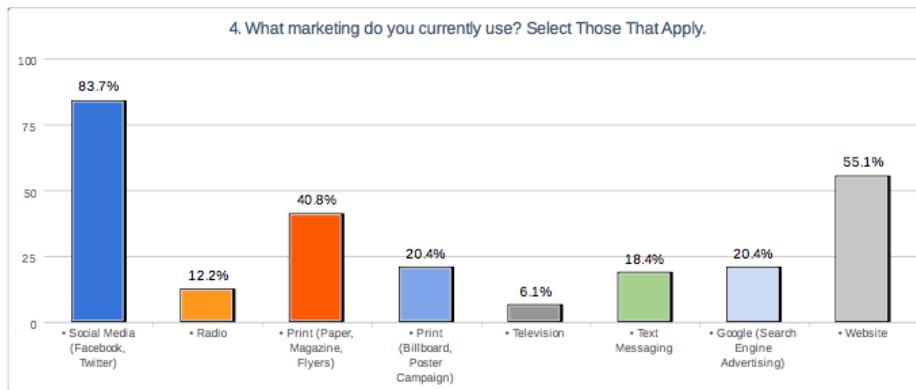
3. How old is your business?. Please tick one.



3. How old is your business?. Please tick one.

Value	Count	Percent %
• 1 year	8	15.4%
• 2 year	4	7.7%
• 3 year	5	9.6%
• 4 year	6	11.5%
• 5+	29	55.8%

Statistics	
Total Responses	52

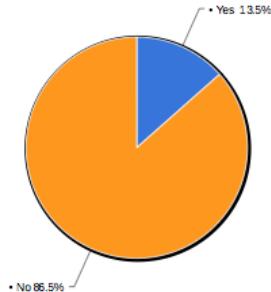


4. What marketing do you currently use? Select Those That Apply.

Value	Count	Percent %
• Social Media (Facebook, Twitter)	41	83.7%
• Radio	6	12.2%
• Print (Paper, Magazine, Flyers)	20	40.8%
• Print (Billboard, Poster Campaign)	10	20.4%
• Television	3	6.1%
• Text Messaging	9	18.4%
• Google (Search Engine Advertising)	10	20.4%
• Website	27	55.1%

Statistics
Total Responses 49

5. Do you currently use any software, tools or applications yourself for marketing?



5. Do you currently use any software, tools or applications yourself for marketing?

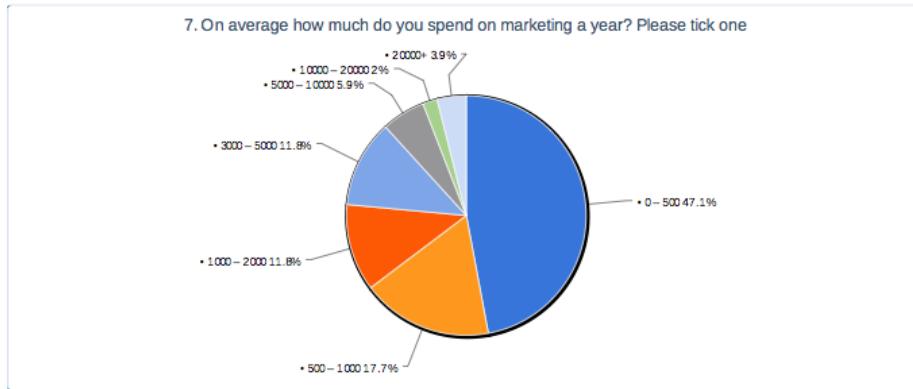
Value	Count	Percent %
• Yes	7	13.5%
• No	45	86.5%

Statistics
Total Responses 52



6. What are your most effective marketing tools/strategies? Select Those That Apply

Value	Count	Percent %	Statistics
• Social Media (Facebook, Twitter)	27	52.9%	Total Responses
• Radio	5	9.8%	51
• Print (Paper, Magazine, Flyers)	7	13.7%	
• Print (Billboard, Poster Campaign)	5	9.8%	
• Television	1	2.0%	
• Text Messaging	4	7.8%	
• Google (Search Engine Advertising)	1	2.0%	
• Website	11	21.6%	
• Promotions	16	31.4%	
• Sales	10	19.6%	

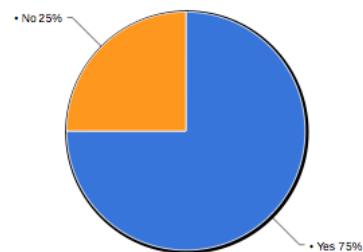


7. On average how much do you spend on marketing a year? Please tick one

Value	Count	Percent %
* 0 – 500	24	47.1%
* 500 – 1000	9	17.7%
* 1000 – 2000	6	11.8%
* 3000 – 5000	6	11.8%
* 5000 – 10000	3	5.9%
* 10000 – 20000	1	2.0%
* 20000+	2	3.9%

Statistics
Total Responses 51

8. Do regularly create/participate in promotions and sales for your store?

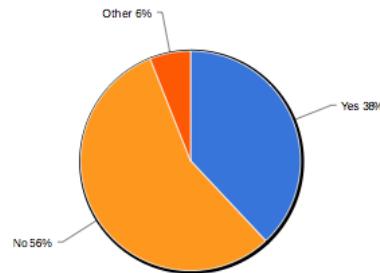


8. Do regularly create/participate in promotions and sales for your store?

Value	Count	Percent %
* Yes	39	75.0%
* No	13	25.0%

Statistics
Total Responses 52

9. Are you aware of the use of mobile applications to increase customer interaction?

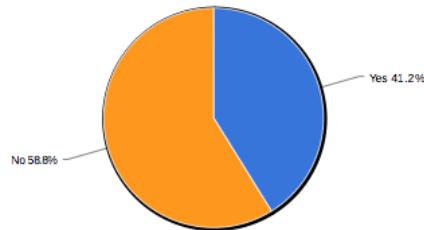


9. Are you aware of the use of mobile applications to increase customer interaction?

Value	Count	Percent %
Yes	19	38.0%
No	28	56.0%
Other	3	6.0%

Statistics
Total Responses 50

10. Are you aware of location based software to push marketing notifications to consumers?

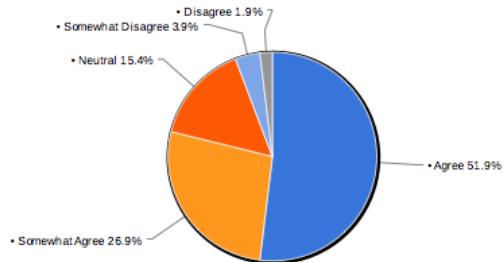


10. Are you aware of location based software to push marketing notifications to consumers?

Value	Count	Percent %
Yes	21	41.2%
No	30	58.8%

Statistics
Total Responses 51

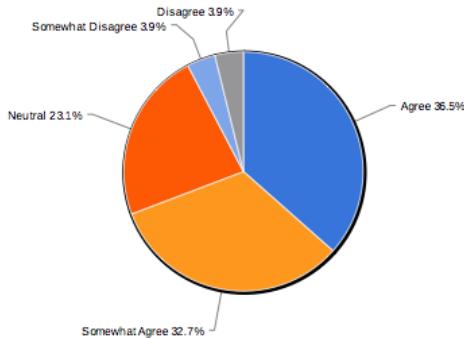
12. For the next set of questions please indicate your level of agreement to the following statements by selecting the most appropriate answer - Q. I have time for technology and would be willing to use the latest technologies for my business?



12. For the next set of questions please indicate your level of agreement to the following statements by selecting the most appropriate answer - Q. I have time for technology and would be willing to use the latest technologies for my business?

Value	Count	Percent %	Statistics
• Agree	27	51.9%	Total Responses
• Somewhat Agree	14	26.9%	52
• Neutral	8	15.4%	
• Somewhat Disagree	2	3.9%	
• Disagree	1	1.9%	

13. At some stage I will use mobile advertising.

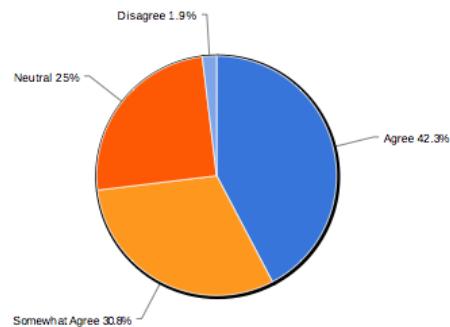


13. At some stage I will use mobile advertising.

Value	Count	Percent %	Statistics
Agree	19	36.5%	Total Responses
Somewhat Agree	17	32.7%	52
Neutral	12	23.1%	

Somewhat Disagree	2	3.9%
Disagree	2	3.9%

14. Mobile advertising is a great idea?

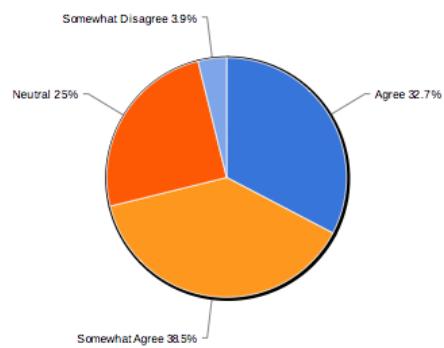


14. Mobile advertising is a great idea?

Value	Count	Percent %
Agree	22	42.3%
Somewhat Agree	16	30.8%
Neutral	13	25.0%
Somewhat Disagree	0	0.0%
Disagree	1	1.9%

Statistics
Total Responses 52

15. I would be willing to learn to use the NearU technology?



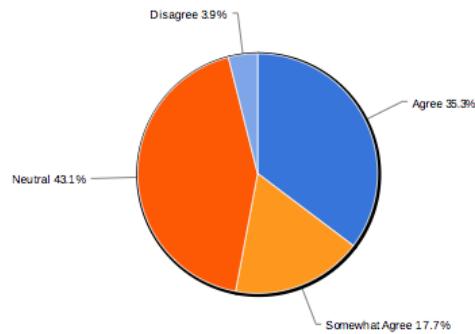
15. I would be willing to learn to use the NearU technology?

Value	Count	Percent %
-------	-------	-----------

Statistics
Total Responses

Agree	17	32.7%	Total Responses	52
Somewhat Agree	20	38.5%		
Neutral	13	25.0%		
Somewhat Disagree	2	3.9%		
Disagree	0	0.0%		

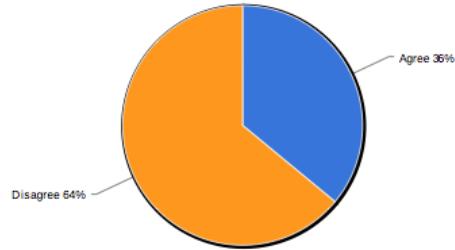
16. I would like the opportunity to use the NearU application.



16. I would like the opportunity to use the NearU application.

Value	Count	Percent %	Statistics
Agree	18	35.3%	Total Responses
Somewhat Agree	9	17.7%	51
Neutral	22	43.1%	
Somewhat Disagree	0	0.0%	
Disagree	2	3.9%	

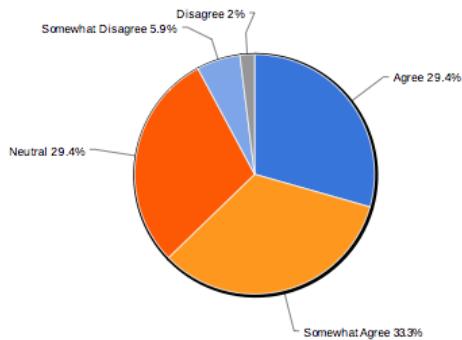
17. I am aware of NFC capabilities on smart-phones.



17. I am aware of NFC capabilities on smart-phones.

Value	Count	Percent %	Statistics
Agree	18	36.0%	Total Responses 50
Disagree	32	64.0%	

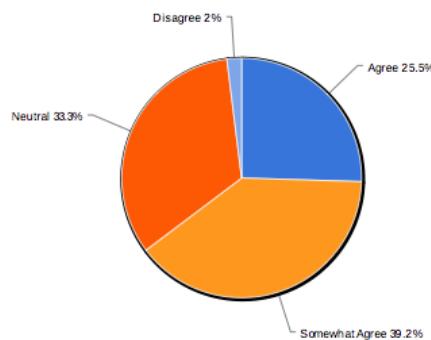
18. I would be happy to run my own promotions through the NearU application.



18. I would be happy to run my own promotions through the NearU application.

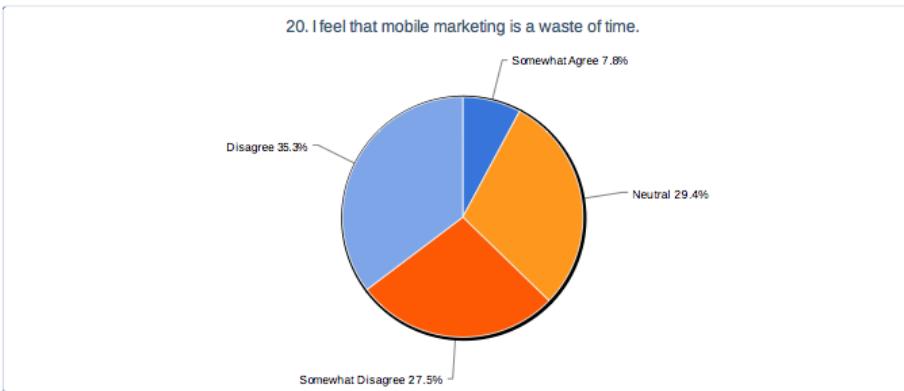
Value	Count	Percent %	Statistics
Agree	15	29.4%	Total Responses 51
Somewhat Agree	17	33.3%	
Neutral	15	29.4%	
Somewhat Disagree	3	5.9%	
Disagree	1	2.0%	

19. Using the NearU application has the potential to increase footfall in-store.



19. Using the NearU application has the potential to increase footfall in-store.

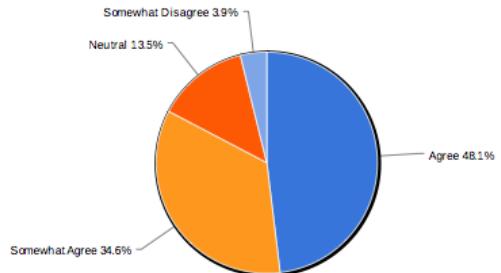
Value	Count	Percent %	Statistics
Agree	13	25.5%	Total Responses
Somewhat Agree	20	39.2%	51
Neutral	17	33.3%	
Somewhat Disagree	0	0.0%	
Disagree	1	2.0%	



20. I feel that mobile marketing is a waste of time.

Value	Count	Percent %	Statistics
Agree	0	0.0%	Total Responses
Somewhat Agree	4	7.8%	51
Neutral	15	29.4%	
Somewhat Disagree	14	27.5%	
Disagree	18	35.3%	

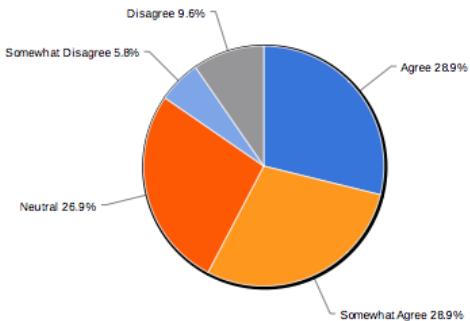
21. Notifying consumers about products/services within the stores vicinity would be worthwhile.



21. Notifying consumers about products/services within the stores vicinity would be worthwhile.

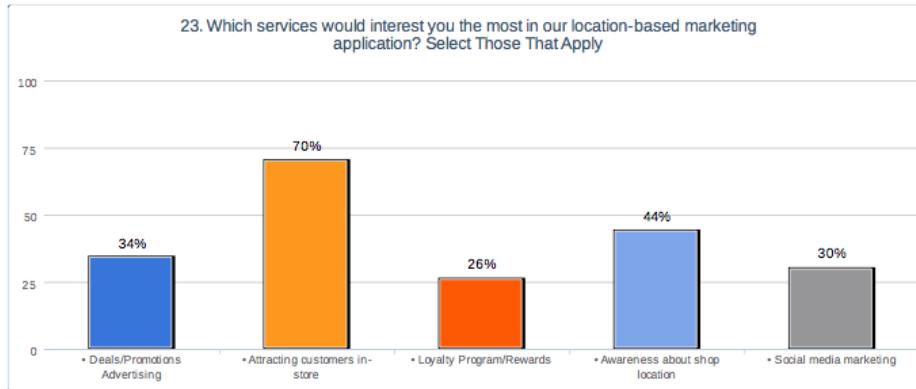
Value	Count	Percent %	Statistics
Agree	25	48.1%	Total Responses
Somewhat Agree	18	34.6%	52
Neutral	7	13.5%	
Somewhat Disagree	2	3.9%	
Disagree	0	0.0%	

22. I have privacy concerns about using the NearU technology.



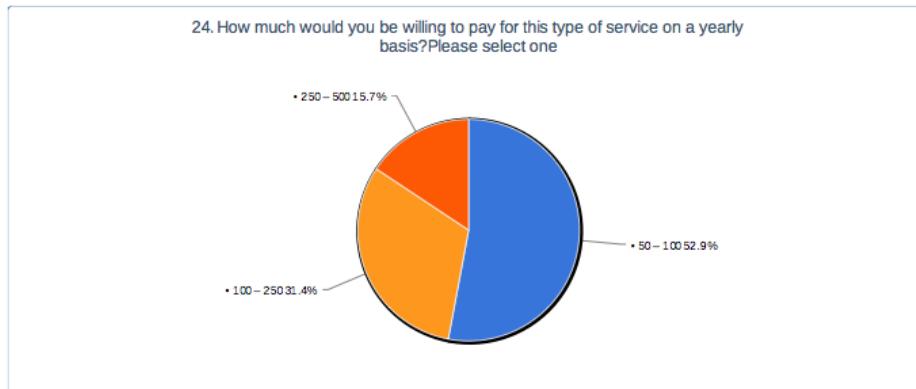
22. I have privacy concerns about using the NearU technology.

Value	Count	Percent %	Statistics
Agree	15	28.9%	Total Responses
Somewhat Agree	15	28.9%	52
Neutral	14	26.9%	
Somewhat Disagree	3	5.8%	
Disagree	5	9.6%	



23. Which services would interest you the most in our location-based marketing application? Select Those That Apply

Value	Count	Percent %	Statistics
• Deals/Promotions Advertising	17	34.0%	Total Responses
• Attracting customers in-store	35	70.0%	50
• Loyalty Program/Rewards	13	26.0%	
• Awareness about shop location	22	44.0%	
• Social media marketing	15	30.0%	



24. How much would you be willing to pay for this type of service on a yearly basis?Please select one

Value	Count	Percent %	Statistics
• 250 – 500	15.7%		
• 100 – 250	31.4%		
• 50 – 100	52.9%		

• 50 – 100	27	52.9%	Total Responses	51
• 100 – 250	16	31.4%		
• 250 – 500	8	15.7%		
• 500+	0	0.0%		

Appendix.24: Concept Study Correlated



Online Surveys, Data Collection and Integration
www.SurveyGizmo.com

Comparison Report - Aug 2, 2013

Survey: NearU Concept Study

What is your company name?

Mobile advertising is a great idea?	Count	Comment
Agree	1	Oldtower Off-sales, Swords
	1	chinese digital shop
	1	Coral Bay
	1	n/a
	1	The Brow Boutique
	1	SoHo Market, st.stephans green SC
	1	direct sports
	1	Duff Bicycles, Omni Santry
	1	Pulse accessories, Omni Santry
	1	Meat Outlet
	1	Estech Office Supplies, Swords
	1	Kling
	1	Forty6 by wecodrobe
	1	Diffney
	1	Irish Design Shop
	1	best mensware, st.stephans green
	1	Penthouse Menswea
	1	Butcher
	1	Lou Lou's Cupcakes
	1	Mark Josef Jewellers
Somewhat Agree	1	treat yer feet foot spa, st.stephans green SC
	1	Dr China
	1	Outdoor Trek, Swords
	1	The Comet pub and off sales
	1	R.A.G.E
	1	Fabio Dericci
	1	appassionata
	1	Reknown, st.stephans green SC
	1	cinderella shoes, st.stephans
	1	name it, Santry omni shopping centre
	1	Paul Galvin hardware, Swords
	1	The Watch Store
	1	Foley's Pharmacy
	1	Direct Sportswear
Neutral	1	Counter Propaganda
	1	Mcnamara's Pharmacy
	1	Quick Cash, Swords.
	1	Beaux Bows Boutique

Results

	1	Alan Hanna's Bookshop
	1	Cycle SuperStore
	1	Timpson shoe repair, st.stephans green
	1	the hat shop, st.stephans green
	1	essence bistro, swords
	1	musicmaker ltd.
	1	oh look
	1	The Gutter Bookshop Limited
	1	mcquillan
Disagree	1	New Vibe, Omni Santry
TOTAL	48	

What category of business are you? (Retailer, Clothing, etc) Please tick one

Mobile advertising is a great idea?	* Antiques	* Art	* Accessories	* Bags & Luggage	* Books & Newsagents	* Café/Restaurant/Food	* Clothing	* Collectibles	* Computer & Accessor
Agree	0	1	3	0	0	3	9	0	3
Somewhat Agree	0	0	1	2	0	1	4	0	1
Neutral	0	1	3	1	2	1	3	0	0
Somewhat Disagree	0	0	0	0	0	0	0	0	0
Disagree	0	0	0	0	0	0	1	0	0
TOTAL	0	2	7	3	2	5	17	0	4

How old is your business?. Please tick one.

Mobile advertising is a great idea?	* 1 year	* 2 year	* 3 year	* 4 year	* 5+
Agree	6	2	2	2	10
Somewhat Agree	0	1	2	3	10
Neutral	1	1	1	1	9
Somewhat Disagree	0	0	0	0	0
Disagree	1	0	0	0	0
TOTAL	8	4	5	6	29

What marketing do you currently use? Select Those That Apply.

Mobile advertising is a great idea?	* Social Media (Facebook, Twitter)	* Radio	* Print (Paper, Magazine, Flyers)	* Print (Billboard, Poster Campaign)	* Television	* Text Messaging	* Google (Search Engine Advertising)	* Website
Agree	19	4	8	4	2	6	4	10
Somewhat Agree	13	1	6	1	1	2	3	11
Neutral	8	1	6	5	0	1	3	6

Somewhat Disagree	0	0	0	0	0	0	0	0
Disagree	1	0	0	0	0	0	0	0
TOTAL	41	6	20	10	3	9	10	27

Do you currently use any software, tools or applications yourself for marketing?

Mobile advertising is a great idea?	• Yes (If yes please specify)	• No
Agree	2	20
Somewhat Agree	1	15
Neutral	4	9
Somewhat Disagree	0	0
Disagree	0	1
TOTAL	7	45

What are your most effective marketing tools/strategies? Select Those That Apply

Mobile advertising is a great idea?	• Social Media (Facebook, Twitter)	• Radio	• Print (Paper, Magazine, Flyers)	• Print (Billboard, Poster Campaign)	• Television	• Text Messaging	• Google (Search Engine Advertising)	• Website	• Promotions	• Sales
Agree	11	4	3	3	1	3	1	4	4	2
Somewhat Agree	10	0	1	0	0	1	0	4	8	2
Neutral	5	1	3	2	0	0	0	3	3	5
Somewhat Disagree	0	0	0	0	0	0	0	0	0	0
Disagree	1	0	0	0	0	0	0	0	1	1
TOTAL	27	5	7	5	1	4	1	11	16	10

On average how much do you spend on marketing a year? Please tick one

Mobile advertising is a great idea?	• 0 – 500	• 500 – 1000	• 1000 – 2000	• 3000 – 5000	• 5000 – 10000	• 10000 – 20000	• 20000+
Agree	9	4	2	2	3	1	1
Somewhat Agree	8	2	3	3	0	0	0
Neutral	6	3	1	1	0	0	1
Somewhat Disagree	0	0	0	0	0	0	0
Disagree	1	0	0	0	0	0	0
TOTAL	24	9	6	6	3	1	2

Do regularly create/participate in promotions and sales for your store?

Mobile advertising is a great idea?	• Yes	• No
Agree	17	5
Somewhat Agree	13	3

Neutral	8	5
Somewhat Disagree	0	0
Disagree	1	0
TOTAL	39	13

Are you aware of the use of mobile applications to increase customer interaction?

Mobile advertising is a great idea?	Yes	No	Other	Social Media App	local social or yelp	FourSquare
Agree	10	9	2	1	1	0
Somewhat Agree	5	11	0	0	0	0
Neutral	4	7	1	0	0	1
Somewhat Disagree	0	0	0	0	0	0
Disagree	0	1	0	0	0	0
TOTAL	19	28	3	1	1	1

Are you aware of location based software to push marketing notifications to consumers?

Mobile advertising is a great idea?	Yes	No
Agree	9	13
Somewhat Agree	7	8
Neutral	5	8
Somewhat Disagree	0	0
Disagree	0	1
TOTAL	21	30

Are there any retail/shopping smart-phone applications in the current market that you use or would recommend?

Mobile advertising is a great idea?	Count	Comment
Agree	4	no
	2	No
	1	groupon, donedeal.ie
	1	phlock.me
	1	Voucher Cloud
	1	asos.ie
	1	ASOS Clothing
Somewhat Agree	4	.
	2	no
	2	phlock.me
	1	Temptser
	1	Google maps
Neutral	2	phlock.me
	2	No
	2	.
	1	.

Disagree	1	.
TOTAL	29	

For the next set of questions please indicate your level of agreement to the following statements by selecting the most appropriate answer - Q. I have time for technology and would be willing to use the latest technologies for my business?

Mobile advertising is a great idea?	• Agree	• Somewhat Agree	• Neutral	• Somewhat Disagree	• Disagree
Agree	15	4	2	1	0
Somewhat Agree	8	5	2	1	0
Neutral	4	5	3	0	1
Somewhat Disagree	0	0	0	0	0
Disagree	0	0	1	0	0
TOTAL	27	14	8	2	1

At some stage I will use mobile advertising.

Mobile advertising is a great idea?	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
Agree	13	6	3	0	0
Somewhat Agree	5	8	3	0	0
Neutral	1	3	6	2	1
Somewhat Disagree	0	0	0	0	0
Disagree	0	0	0	0	1
TOTAL	19	17	12	2	2

I would be willing to learn to use the NearU technology?

Mobile advertising is a great idea?	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
Agree	11	9	2	0	0
Somewhat Agree	3	6	7	0	0
Neutral	3	4	4	2	0
Somewhat Disagree	0	0	0	0	0
Disagree	0	1	0	0	0
TOTAL	17	20	13	2	0

I would like the opportunity to use the NearU application.

Mobile advertising is a great idea?	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
Agree	12	4	5	0	0
Somewhat Agree	3	3	9	0	1
Neutral	3	2	7	0	1
Somewhat Disagree	0	0	0	0	0
Disagree	0	0	1	0	0
TOTAL	18	9	22	0	2

I am aware of NFC capabilities on smart-phones.

Mobile advertising is a great idea?	Agree	Disagree
Agree	10	11
Somewhat Agree	4	12
Neutral	4	8
Somewhat Disagree	0	0
Disagree	0	1
TOTAL	18	32

I would be happy to run my own promotions through the NearU application.

Mobile advertising is a great idea?	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
Agree	9	6	7	0	0
Somewhat Agree	4	7	3	2	0
Neutral	2	3	5	1	1
Somewhat Disagree	0	0	0	0	0
Disagree	0	1	0	0	0
TOTAL	15	17	15	3	1

Using the NearU application has the potential to increase footfall in-store.

Mobile advertising is a great idea?	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
Agree	10	9	2	0	0
Somewhat Agree	1	8	7	0	0
Neutral	1	3	8	0	1
Somewhat Disagree	0	0	0	0	0
Disagree	1	0	0	0	0
TOTAL	13	20	17	0	1

I feel that mobile marketing is a waste of time.

Mobile advertising is a great idea?	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
Agree	0	0	3	6	13
Somewhat Agree	0	1	4	6	4
Neutral	0	3	7	2	1
Somewhat Disagree	0	0	0	0	0
Disagree	0	0	1	0	0
TOTAL	0	4	15	14	18

Notifying consumers about products/services within the stores vicinity would be worthwhile.

Mobile advertising is a great idea?	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
Agree	16	5	1	0	0
Somewhat Agree	5	9	2	0	0

Neutral	3	4	4	2	0
Somewhat Disagree	0	0	0	0	0
Disagree	1	0	0	0	0
TOTAL	25	18	7	2	0

I have privacy concerns about using the NearU technology.

Mobile advertising is a great idea?	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
Agree	6	7	5	2	2
Somewhat Agree	7	3	4	0	2
Neutral	2	5	5	1	0
Somewhat Disagree	0	0	0	0	0
Disagree	0	0	0	0	1
TOTAL	15	15	14	3	5

Which services would interest you the most in our location-based marketing application? Select Those That Apply

Mobile advertising is a great idea?	* Deals/Promotions Advertising	* Attracting customers in-store	* Loyalty Program/Rewards	* Awareness about shop location	* Social media marketing
Agree	9	14	9	9	9
Somewhat Agree	5	10	2	8	4
Neutral	2	10	2	5	2
Somewhat Disagree	0	0	0	0	0
Disagree	1	1	0	0	0
TOTAL	17	35	13	22	15

How much would you be willing to pay for this type of service on a yearly basis? Please select one

Mobile advertising is a great idea?	* 50 – 100	* 100 – 250	* 250 – 500	* 500+
Agree	13	5	4	0
Somewhat Agree	5	7	3	0
Neutral	8	4	1	0
Somewhat Disagree	0	0	0	0
Disagree	1	0	0	0
TOTAL	27	16	8	0

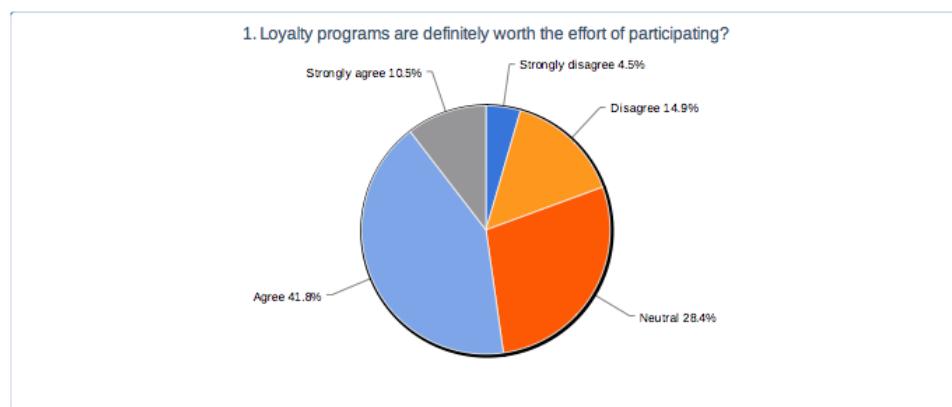
Appendix.25: Consumer survey



Online Surveys, Data Collection and Integration
www.SurveyGizmo.com

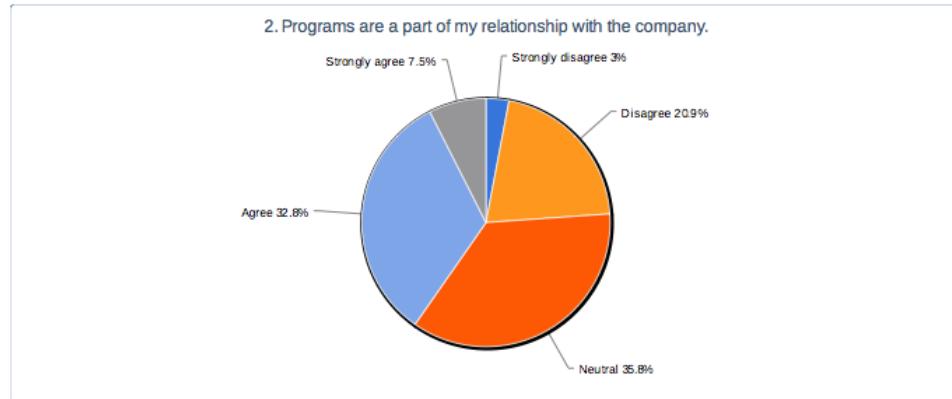
Summary Report - Aug 5, 2013

Survey: NearU Application Customer Survey



1. Loyalty programs are definitely worth the effort of participating?

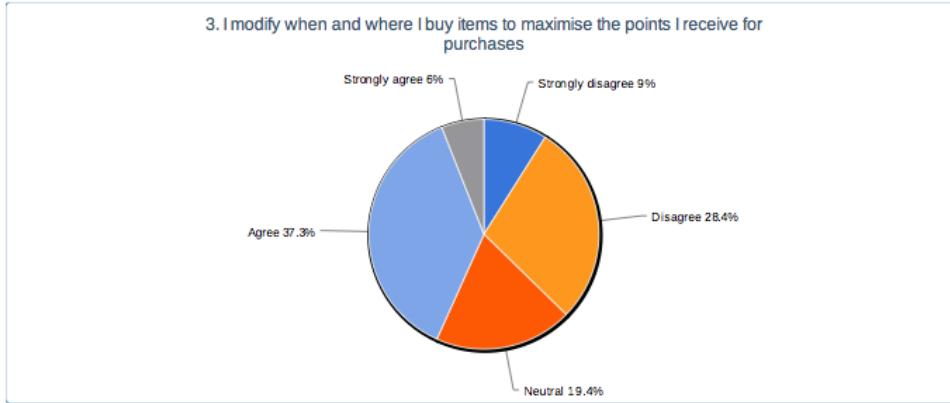
Value	Count	Percent %	Statistics
Strongly disagree	3	4.5%	Total Responses 67
Disagree	10	14.9%	Sum 227.0
Neutral	19	28.4%	Avg. 3.4
Agree	28	41.8%	StdDev 1.0
Strongly agree	7	10.5%	Max 5.0



2. Programs are a part of my relationship with the company.

results

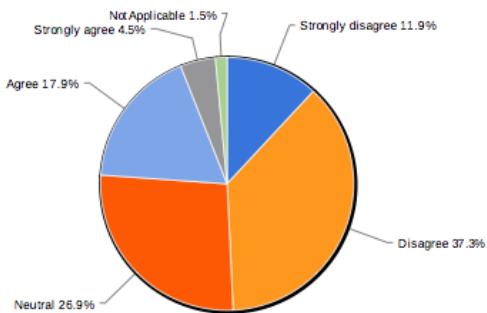
Value	Count	Percent %	Statistics
Strongly disagree	2	3.0%	Total Responses 67
Disagree	14	20.9%	Sum 215.0
Neutral	24	35.8%	Avg. 3.2
Agree	22	32.8%	StdDev 1.0
Strongly agree	5	7.5%	Max 5.0



3. I modify when and where I buy items to maximise the points I receive for purchases

Value	Count	Percent %	Statistics
Strongly disagree	6	9.0%	Total Responses 67
Disagree	19	28.4%	Sum 203.0
Neutral	13	19.4%	Avg. 3.0
Agree	25	37.3%	StdDev 1.1
Strongly agree	4	6.0%	Max 5.0

4. I modify what brands I buy to maximise the points I receive for purchases.

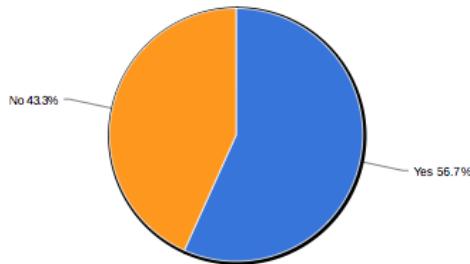


4. I modify what brands I buy to maximise the points I receive for purchases.

Value	Count	Percent %
Strongly disagree	8	11.9%
Disagree	25	37.3%
Neutral	18	26.9%
Agree	12	17.9%
Strongly agree	3	4.5%
Not Applicable	1	1.5%

Statistics	
Total Responses	67
Sum	175.0
Avg.	2.7
StdDev	1.1
Max	5.0

5. Grocery

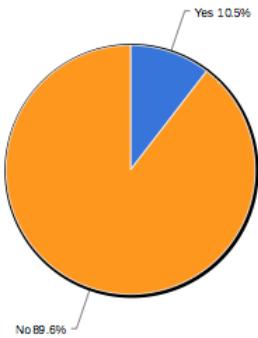


5. Grocery

Value	Count	Percent %
Yes	38	56.7%
No	29	43.3%

Statistics	
Total Responses	67

6. Financial



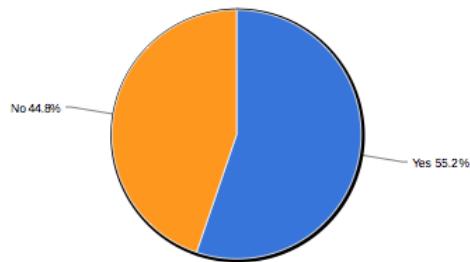
6. Financial

Value	Count	Percent %
Yes	7	10.5%
No	60	89.6%

Statistics

Total Responses 67

7. Fashion/Retail programs



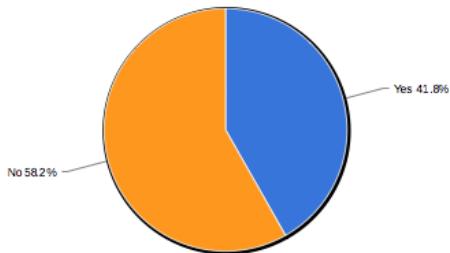
7. Fashion/Retail programs

Value	Count	Percent %
Yes	37	55.2%
No	30	44.8%

Statistics

Total Responses 67

8. Entertainment

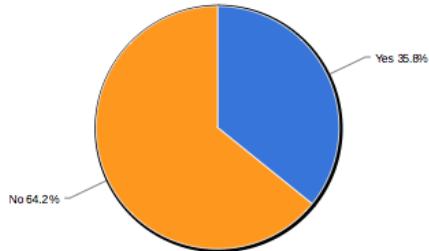


8. Entertainment

Value	Count	Percent %
Yes	28	41.8%
No	39	58.2%

Statistics
Total Responses 67

9. Travel/Hotel.

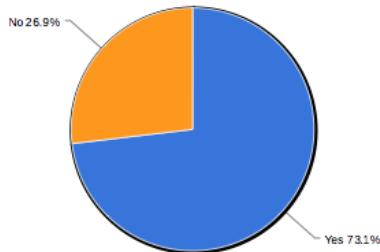


9. Travel/Hotel.

Value	Count	Percent %
Yes	24	35.8%
No	43	64.2%

Statistics
Total Responses 67

10. Over the last 12 months I have collected loyalty points.

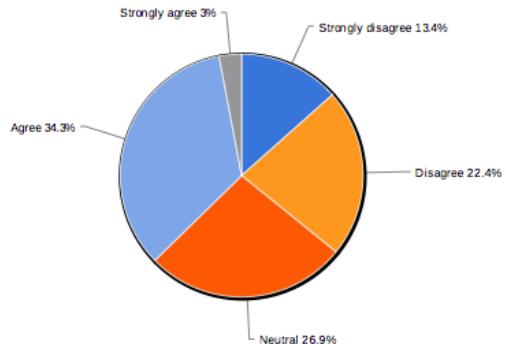


10. Over the last 12 months I have collected loyalty points.

Value	Count	Percent %
Yes	49	73.1%
No	18	26.9%

Statistics
Total Responses 67

11. I modify when and where I buy items to maximise loyalty point

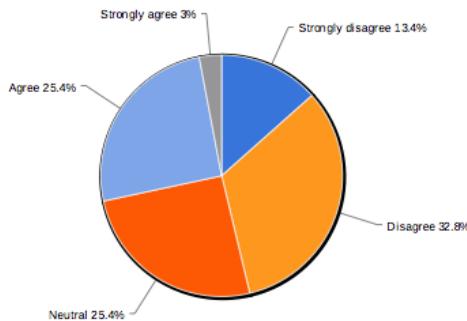


11. I modify when and where I buy items to maximise loyalty point

Value	Count	Percent %
Strongly disagree	9	13.4%
Disagree	15	22.4%
Neutral	18	26.9%
Agree	23	34.3%
Strongly agree	2	3.0%

Statistics
Total Responses 67
Sum 195.0
Avg. 2.9
StdDev 1.1
Max 5.0

12. I modify the brands I buy to maximise loyalty points.

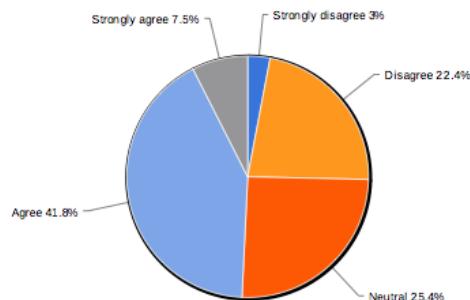


12. I modify the brands I buy to maximise loyalty points.

Value	Count	Percent %
Strongly disagree	9	13.4%
Disagree	22	32.8%
Neutral	17	25.4%
Agree	17	25.4%
Strongly agree	2	3.0%

Statistics	
Total Responses	67
Sum	182.0
Avg.	2.7
StdDev	1.1
Max	5.0

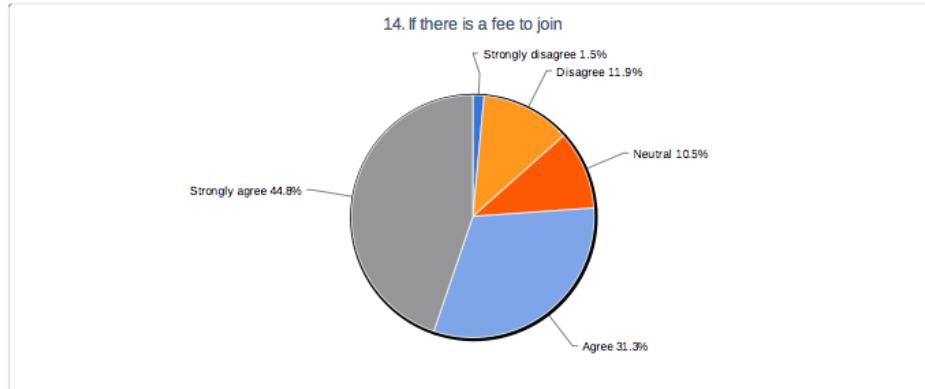
13. Programs make me more likely to continue to do business with a company



13. Programs make me more likely to continue to do business with a company

Value	Count	Percent %
Strongly disagree	2	3.0%
Disagree	15	22.4%
Neutral	17	25.4%
Agree	28	41.8%
Strongly agree	5	7.5%

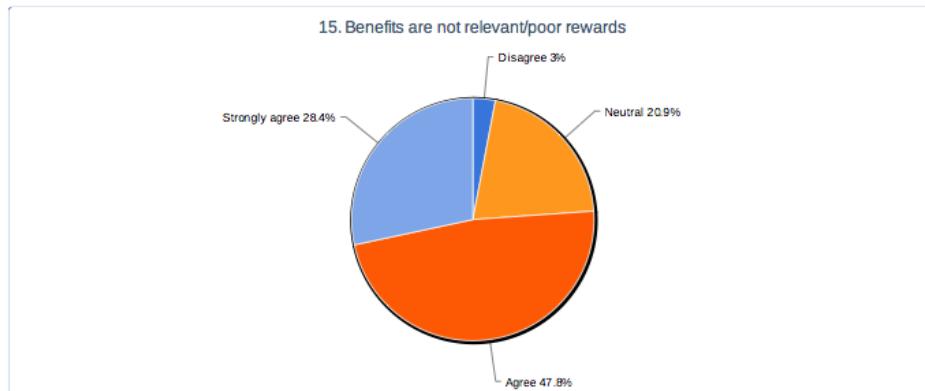
Statistics	
Total Responses	67
Sum	220.0
Avg.	3.3
StdDev	1.0
Max	5.0



14. If there is a fee to join

Value	Count	Percent %
Strongly disagree	1	1.5%
Disagree	8	11.9%
Neutral	7	10.5%
Agree	21	31.3%
Strongly agree	30	44.8%

Statistics	
Total Responses	67
Sum	272.0
Avg.	4.1
StdDev	1.1
Max	5.0

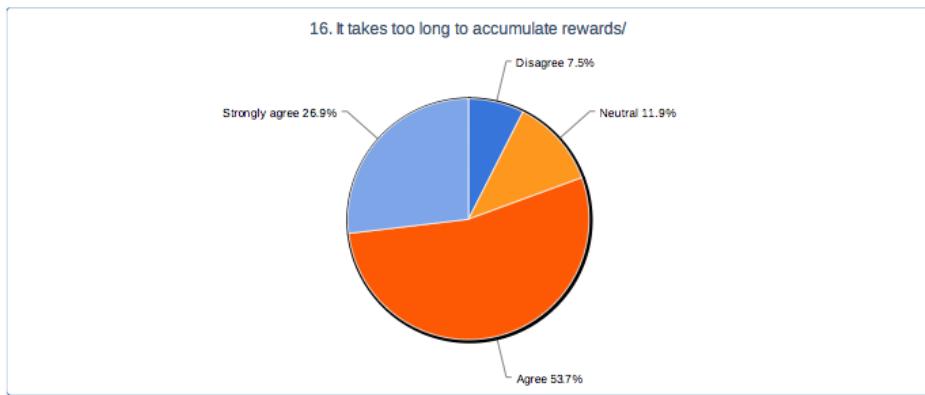


15. Benefits are not relevant/poor rewards

Value	Count	Percent %
Strongly disagree	0	0.0%
Disagree	2	3.0%
Neutral	14	20.9%
Agree	32	47.8%
Strongly agree	10	28.4%

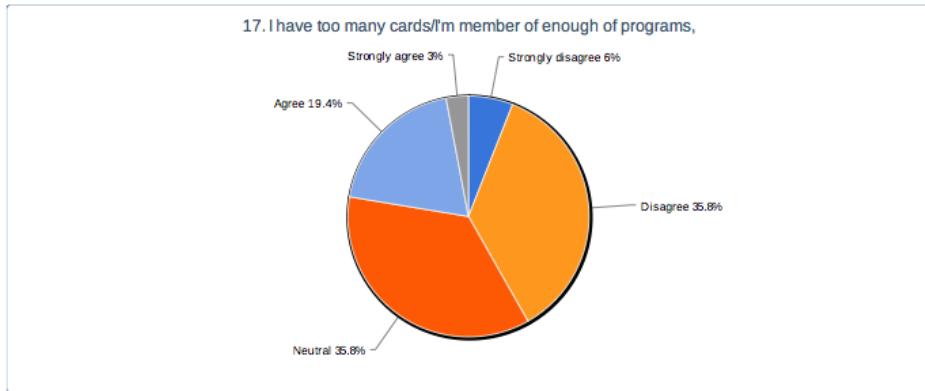
Statistics	
Total Responses	67
Sum	269.0

Neutral	14	20.9%	Avg.	4.0
Agree	32	47.8%	StdDev	0.8
Strongly agree	19	28.4%	Max	5.0



16. It takes too long to accumulate rewards/

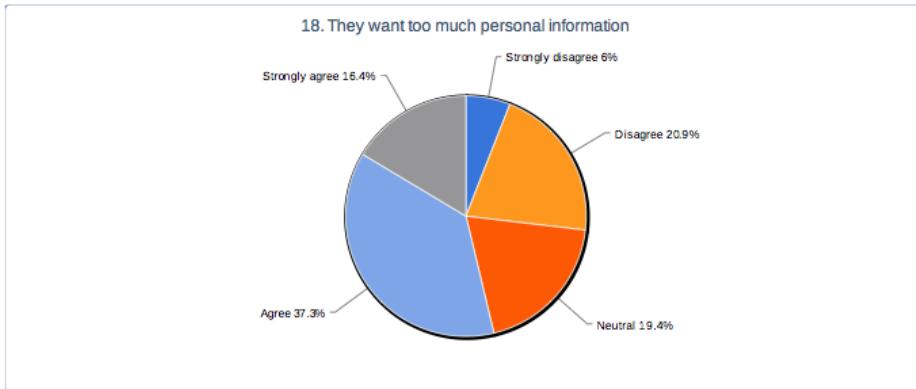
Value	Count	Percent %	Statistics
Strongly disagree	0	0.0%	Total Responses 67
Disagree	5	7.5%	Sum 268.0
Neutral	8	11.9%	Avg. 4.0
Agree	36	53.7%	StdDev 0.8
Strongly agree	18	26.9%	Max 5.0



17. I have too many cards/I'm member of enough of programs,

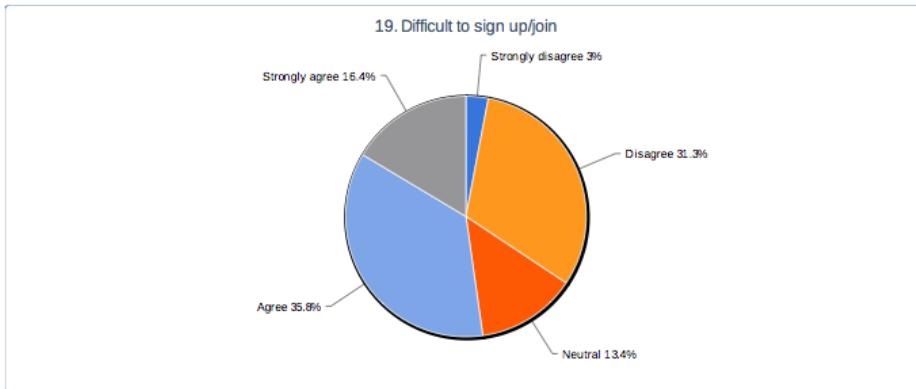
Value	Count	Percent %	Statistics
Strongly disagree	4	6.0%	Total Responses 67
Disagree	23	35.8%	Sum 268.0
Neutral	24	35.8%	Avg. 4.0
Agree	13	19.4%	StdDev 0.8
Strongly agree	2	3.0%	Max 5.0

Strongly disagree	4	6.0%	Total Responses	67
Disagree	24	35.8%	Sum	186.0
Neutral	24	35.8%	Avg.	2.8
Agree	13	19.4%	StdDev	0.9
Strongly agree	2	3.0%	Max	5.0



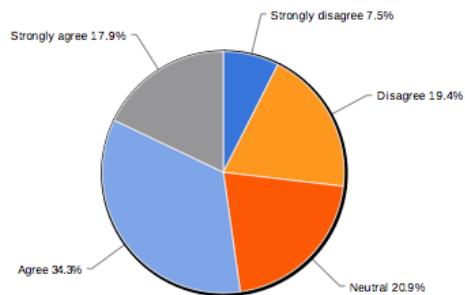
18. They want too much personal information

Value	Count	Percent %	Statistics	
Strongly disagree	4	6.0%	Total Responses	67
Disagree	14	20.9%	Sum	226.0
Neutral	13	19.4%	Avg.	3.4
Agree	25	37.3%	StdDev	1.2
Strongly agree	11	16.4%	Max	5.0



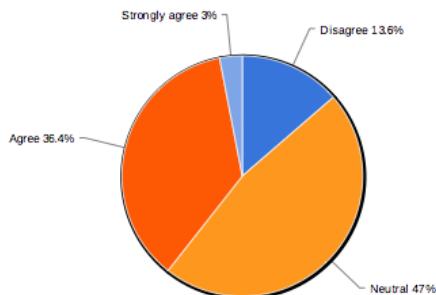
19. Difficult to sign up/join

Value	Count	Percent %	Statistics
Strongly disagree	2	3.0%	Total Responses 67
Disagree	21	31.3%	Sum 222.0
Neutral	9	13.4%	Avg. 3.3
Agree	24	35.8%	StdDev 1.2
Strongly agree	11	16.4%	Max 5.0

20. Privacy concerns.**20. Privacy concerns.**

Value	Count	Percent %	Statistics
Strongly disagree	5	7.5%	Total Responses 67
Disagree	13	19.4%	Sum 225.0
Neutral	14	20.9%	Avg. 3.4
Agree	23	34.3%	StdDev 1.2
Strongly agree	12	17.9%	Max 5.0

21. I just don't shop at those retailers anymore

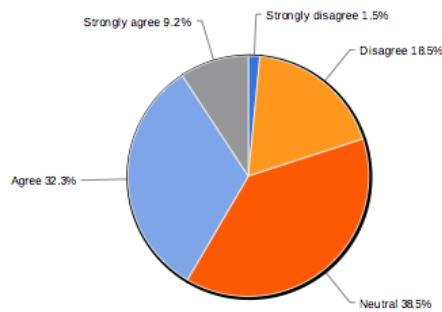


21. I just don't shop at those retailers anymore

Value	Count	Percent %
Strongly disagree	0	0.0%
Disagree	9	13.6%
Neutral	31	47.0%
Agree	24	36.4%
Strongly agree	2	3.0%

Statistics	
Total Responses	66
Sum	217.0
Avg.	3.3
StdDev	0.7
Max	5.0

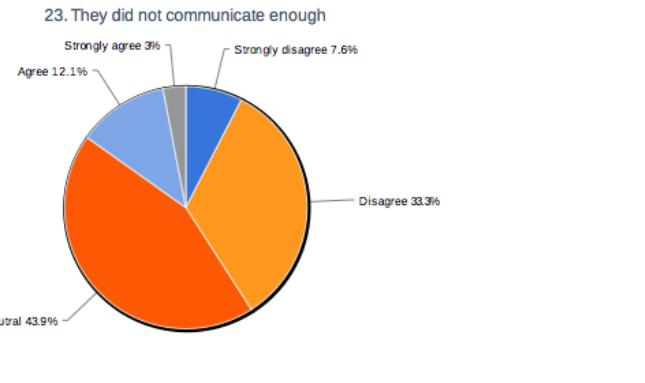
22. I was just not earning enough points/rewards fast enough.



22. I was just not earning enough points/rewards fast enough.

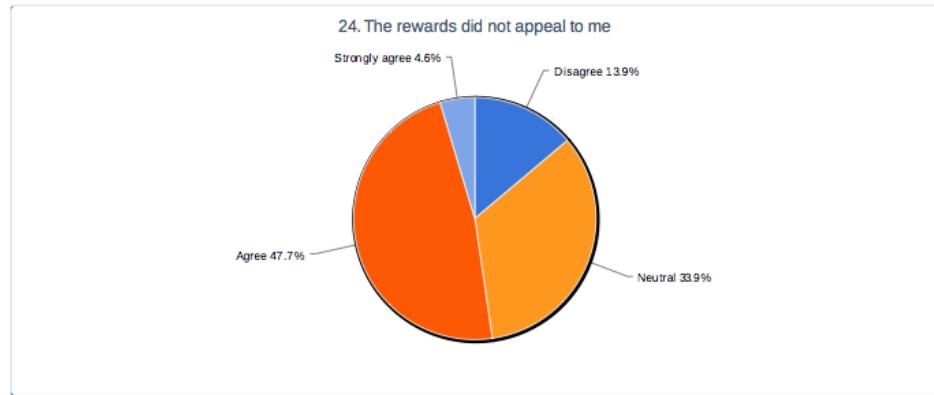
Value	Count	Percent %
Strongly disagree	1	1.5%
Disagree	12	18.5%
Neutral	25	38.5%
Agree	21	32.3%
Strongly agree	6	9.2%

Statistics	
Total Responses	65
Sum	214.0
Avg.	3.3
StdDev	0.9
Max	5.0



23. They did not communicate enough

Value	Count	Percent %	Statistics
Strongly disagree	5	7.6%	Total Responses 66
Disagree	22	33.3%	Sum 178.0
Neutral	29	43.9%	Avg. 2.7
Agree	8	12.1%	StdDev 0.9
Strongly agree	2	3.0%	Max 5.0

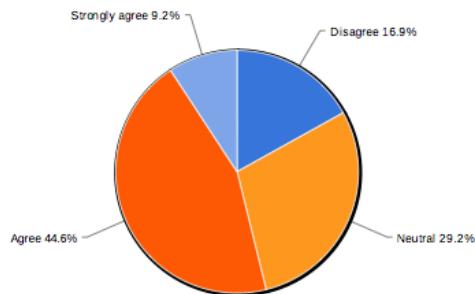


24. The rewards did not appeal to me

Value	Count	Percent %	Statistics
Strongly disagree	0	0.0%	Total Responses 65
Disagree	9	13.9%	Sum 223.0

Neutral	22	33.9%	Avg.	3.4
Agree	31	47.7%	StdDev	0.8
Strongly agree	3	4.6%	Max	5.0

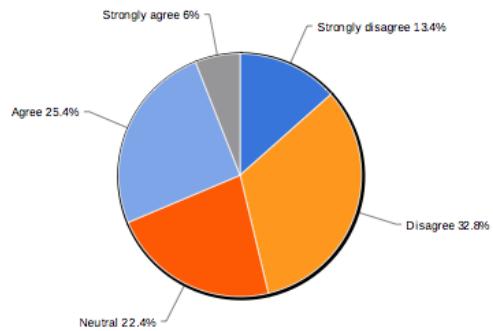
25. Too much hassle to participate.



25. Too much hassle to participate.

Value	Count	Percent %	Statistics
Strongly disagree	0	0.0%	Total Responses 65
Disagree	11	16.9%	Sum 225.0
Neutral	19	29.2%	Avg. 3.5
Agree	29	44.6%	StdDev 0.9
Strongly agree	6	9.2%	Max 5.0

26. Receiving points for referring friends

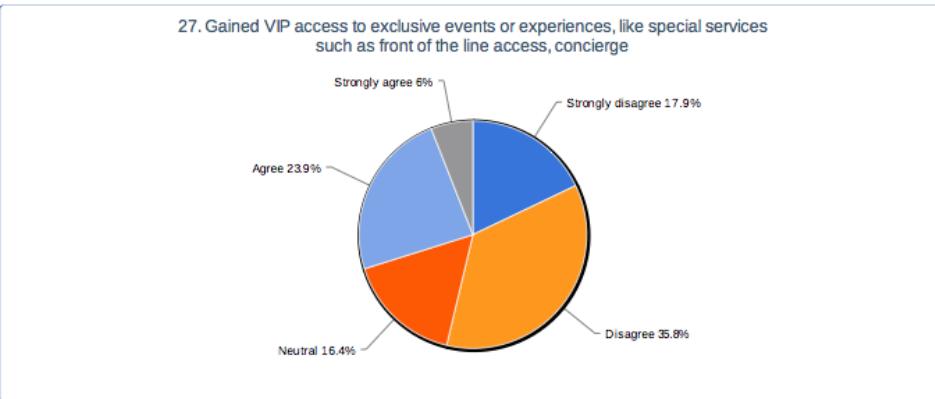


26. Receiving points for referring friends

Value	Count	Percent %	Statistics
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Strongly disagree	9	13.4%
Disagree	22	32.8%
Neutral	15	22.4%
Agree	17	25.4%
Strongly agree	4	6.0%

Total Responses	67
Sum	186.0
Avg.	2.8
StdDev	1.1
Max	5.0

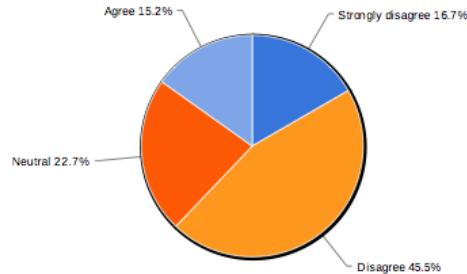


27. Gained VIP access to exclusive events or experiences, like special services such as front of the line access, concierge

Value	Count	Percent %
Strongly disagree	12	17.9%
Disagree	24	35.8%
Neutral	11	16.4%
Agree	16	23.9%
Strongly agree	4	6.0%

Statistics	
Total Responses	67
Sum	177.0
Avg.	2.6
StdDev	1.2
Max	5.0

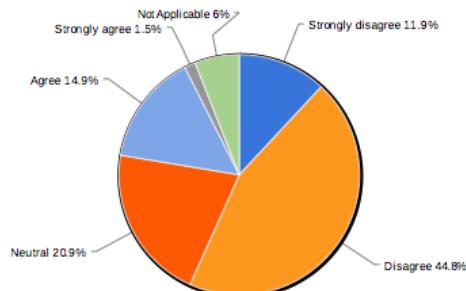
28. I find ways to engage with this program beyond just collecting rewards e.g online discussion/forums/reviews.



28. I find ways to engage with this program beyond just collecting rewards e.g online discussion/forums/reviews.

Value	Count	Percent %	Statistics
Strongly disagree	11	16.7%	Total Responses 66
Disagree	30	45.5%	Sum 156.0
Neutral	15	22.7%	Avg. 2.4
Agree	10	15.2%	StdDev 0.9
Strongly agree	0	0.0%	Max 4.0

29. I seek out ways to share this program with others.

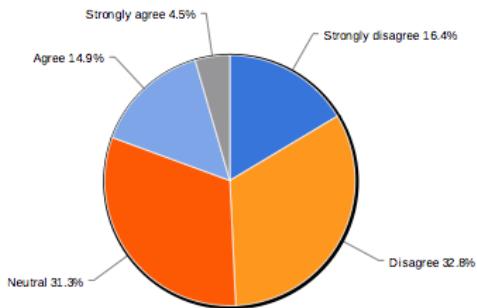


29. I seek out ways to share this program with others.

Value	Count	Percent %	Statistics
Strongly disagree	8	11.9%	Total Responses 67
Disagree	30	44.8%	Sum 155.0
Neutral	14	20.9%	Avg. 2.5
Agree	10	14.9%	StdDev 1.0

Strongly agree	1	1.5%		Max	5.0
Not Applicable	4	6.0%			

30. Earning benefits for interacting with the program via social media.

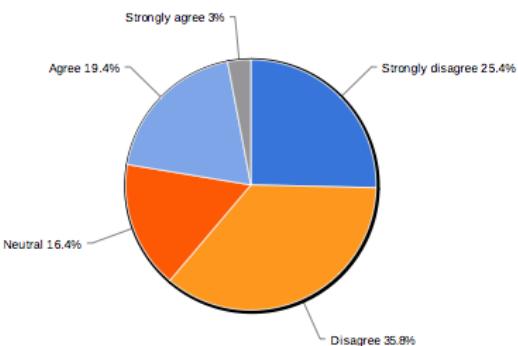


30. Earning benefits for interacting with the program via social media.

Value	Count	Percent %
Strongly disagree	11	16.4%
Disagree	22	32.8%
Neutral	21	31.3%
Agree	10	14.9%
Strongly agree	3	4.5%

Statistics	
Total Responses	67
Sum	173.0
Avg.	2.6
StdDev	1.1
Max	5.0

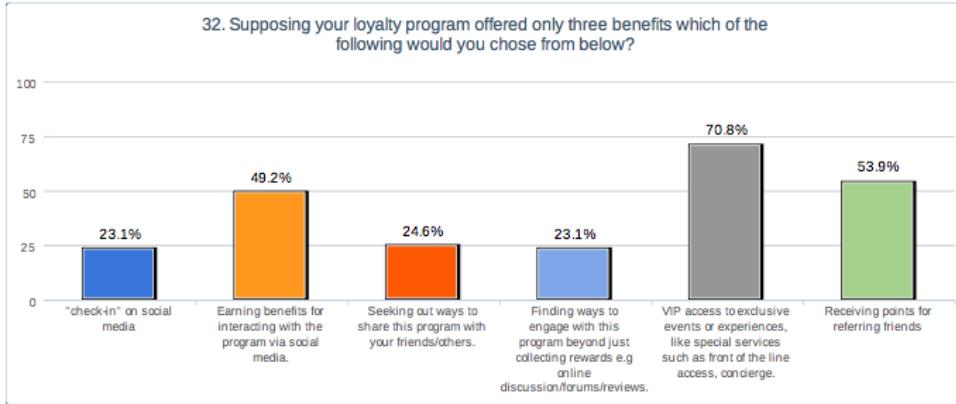
31. Shopped at a certain location so you could "check-in" on social media.



31. Shopped at a certain location so you could "check-in" on social media.

Value	Count	Percent %	Statistics

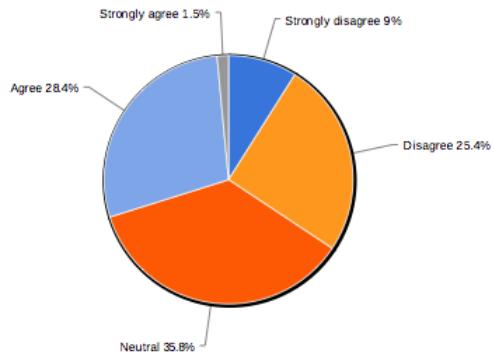
Strongly disagree	17	25.4%	Total Responses	67
Disagree	24	35.8%	Sum	160.0
Neutral	11	16.4%	Avg.	2.4
Agree	13	19.4%	StdDev	1.1
Strongly agree	2	3.0%	Max	5.0



32. Supposing your loyalty program offered only three benefits which of the following would you chose from below?

Value	Count	Percent %	Statistics
"check-in" on social media	15	23.1%	Total Responses 65
Earning benefits for interacting with the program via social media.	32	49.2%	
Seeking out ways to share this program with your friends/others.	16	24.6%	
Finding ways to engage with this program beyond just collecting rewards e.g online discussion/forums/reviews.	15	23.1%	
VIP access to exclusive events or experiences, like special services such as front of the line access, concierge.	46	70.8%	
Receiving points for referring friends	35	53.9%	

33. The communications I receive from loyalty program are relevant to me.

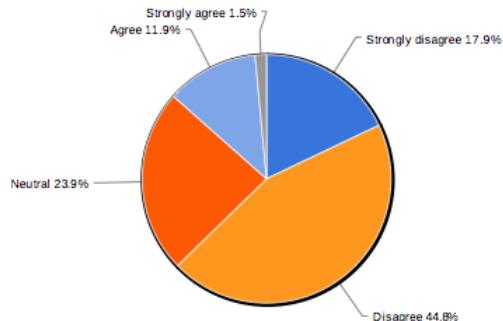


33. The communications I receive from loyalty program are relevant to me.

Value	Count	Percent %
Strongly disagree	6	9.0%
Disagree	17	25.4%
Neutral	24	35.8%
Agree	19	28.4%
Strongly agree	1	1.5%

Statistics	
Total Responses	67
Sum	193.0
Avg.	2.9
StdDev	1.0
Max	5.0

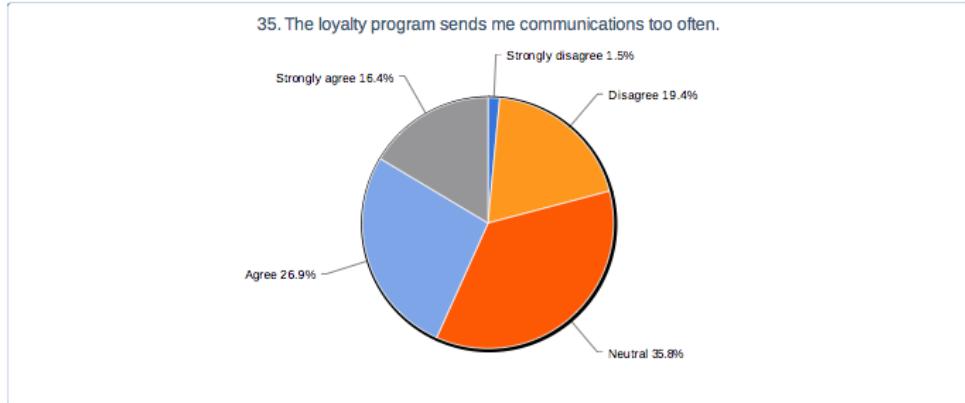
34. I always read the communications that are sent to me from this program.



34. I always read the communications that are sent to me from this program.

Value	Count	Percent %
Strongly disagree	12	17.9%
Disagree	30	44.8%
Neutral	16	23.9%
Agree	8	11.9%
Strongly agree	1	1.5%

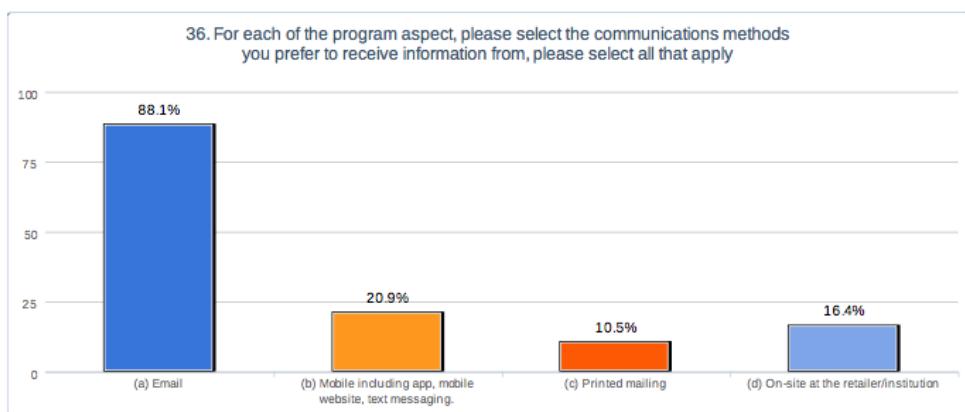
Statistics	
Total Responses	67
Sum	157.0
Avg.	2.3
StdDev	1.0
Max	5.0



35. The loyalty program sends me communications too often.

Value	Count	Percent %
Strongly disagree	1	1.5%
Disagree	13	19.4%
Neutral	24	35.8%
Agree	18	26.9%
Strongly agree	11	16.4%

Statistics	
Total Responses	67
Sum	226.0
Avg.	3.4
StdDev	1.0
Max	5.0



36. For each of the program aspect, please select the communications methods you prefer to receive information from, please select all that apply

Value	Count	Percent %
(a) Email	59	88.1%

Statistics	
Total Responses	67

(b) Mobile including app, mobile website, text messaging.	14	20.9%
(c) Printed mailing	7	10.5%
(d) On-site at the retailer/institution	11	16.4%

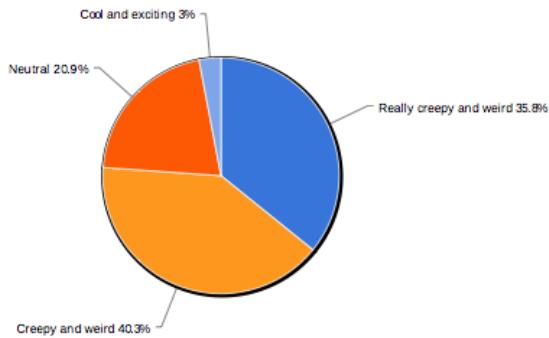
37. what are some of the things that would prevent you from joining another reward program in the future, please select all that apply

Item	Total Score ¹	Overall Rank
(a) Privacy concerns	139	1
(b) Programs require too much personal information.	117	2
(c) The GPS locator kills the battery on my smartphone.	98	3

Total Respondents: 67

¹ Score is a weighted calculation. Items ranked first are valued higher than the following ranks, the score is the sum of all weighted rank counts.

38. Allowing programs to review your friend's status updates/photos to determine your eligibility for benefits.

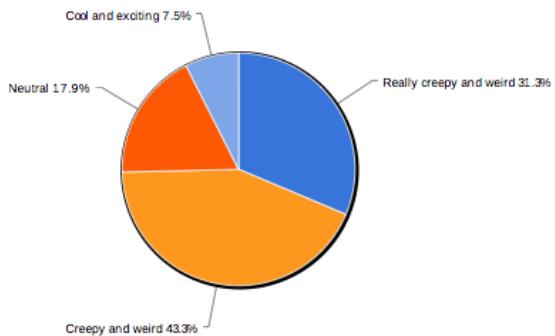


38. Allowing programs to review your friend's status updates/photos to determine your eligibility for benefits.

Value	Count	Percent %
Really creepy and weird	24	35.8%
Creepy and weird	27	40.3%
Neutral	14	20.9%
Cool and exciting	2	3.0%
Really cool and exciting	0	0.0%

Statistics	
Total Responses	67
Sum	128.0
Avg.	1.9
StdDev	0.8
Max	4.0

39. Offer benefits to those who provide the program with access to personal information about you (such as personal income, household composition, etc.)

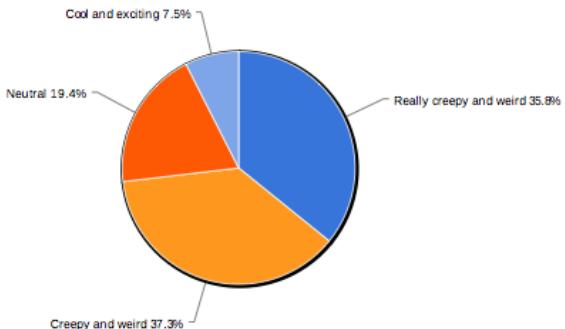


39. Offer benefits to those who provide the program with access to personal information about you (such as personal income, household composition, etc.)

Value	Count	Percent %
Really creepy and weird	21	31.3%
Creepy and weird	29	43.3%
Neutral	12	17.9%
Cool and exciting	5	7.5%
Really cool and exciting	0	0.0%

Statistics
Total Responses 67

40. Provide your personal credit card number to a retailer via their website for credit on statement if you spend a certain amount.



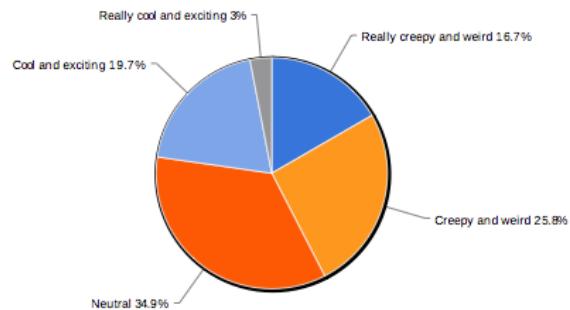
40. Provide your personal credit card number to a retailer via their website for credit on statement if you spend a certain amount.

Value	Count	Percent %
Really creepy and weird	24	35.8%
Creepy and weird	25	37.3%
Neutral	13	19.4%

Statistics
Total Responses 67

Cool and exciting	5	7.5%
Really cool and exciting	0	0.0%

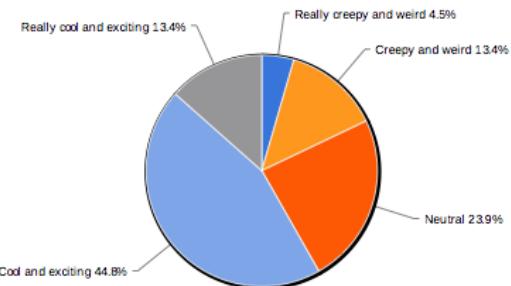
41. Ask you for personal info when enrolling to target promotions to your specific demographic.



41. Ask you for personal info when enrolling to target promotions to your specific demographic.

Value	Count	Percent %	Statistics
Really creepy and weird	11	16.7%	Total Responses 66
Creepy and weird	17	25.8%	
Neutral	23	34.9%	
Cool and exciting	13	19.7%	
Really cool and exciting	2	3.0%	

42. Personalised discounts on your favourite items, based on your purchasing habits



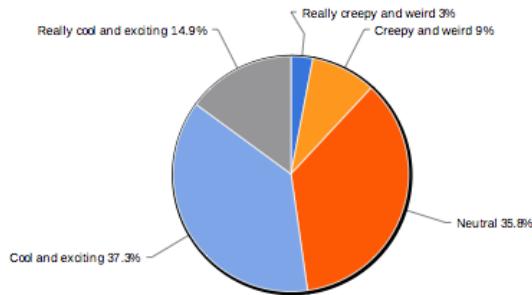
42. Personalised discounts on your favourite items, based on your purchasing habits

Value	Count	Percent %	Statistics
Really cool and exciting	11	16.7%	Total Responses 66

Really creepy and weird	3	4.5%
Creepy and weird	9	13.4%
Neutral	16	23.9%
Cool and exciting	30	44.8%
Really cool and exciting	9	13.4%

Total Responses 67

43. Personalised offers you want based on your preferences that you manage and update.

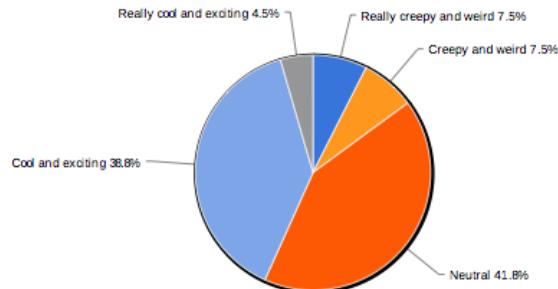


43. Personalised offers you want based on your preferences that you manage and update.

Value	Count	Percent %
Really creepy and weird	2	3.0%
Creepy and weird	6	9.0%
Neutral	24	35.8%
Cool and exciting	25	37.3%
Really cool and exciting	10	14.9%

Statistics
Total Responses 67

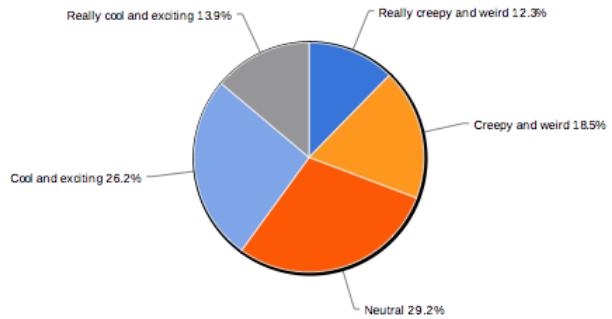
44. Special benefits to those who "like" or "follow" a program on Facebook/Twitter/Pinterest



44. Special benefits to those who "like" or "follow" a program on Facebook/Twitter/Pinterest

Value	Count	Percent %	Statistics
Really creepy and weird	5	7.5%	Total Responses
Creepy and weird	5	7.5%	67
Neutral	28	41.8%	
Cool and exciting	26	38.8%	
Really cool and exciting	3	4.5%	

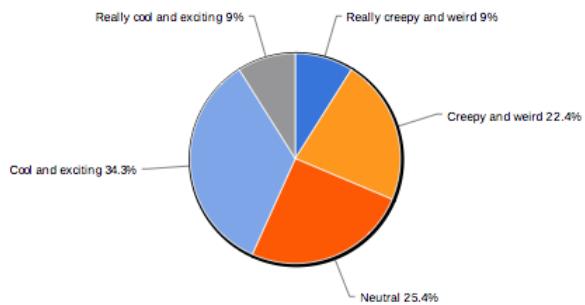
45. Determine your location using your smartphone and offers you deals if you near a partner retail store.



45. Determine your location using your smartphone and offers you deals if you near a partner retail store.

Value	Count	Percent %	Statistics
Really creepy and weird	8	12.3%	Total Responses
Creepy and weird	12	18.5%	65
Neutral	19	29.2%	
Cool and exciting	17	26.2%	
Really cool and exciting	9	13.9%	

46. Set preferences for purchases on your smartphone such as upon arriving at partner retail store, your order is processed and paid for instantly (e.g., your morning beverage order)

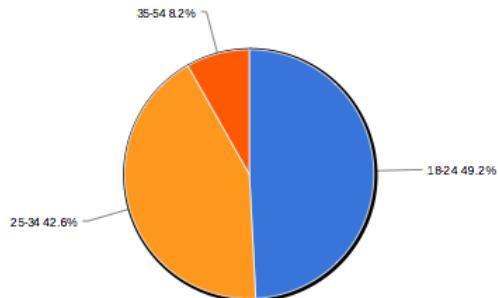


46. Set preferences for purchases on your smartphone such as upon arriving at partner retail store, your order is processed and paid for instantly (e.g., your morning beverage order)

Value	Count	Percent %
Really creepy and weird	6	9.0%
Creepy and weird	15	22.4%
Neutral	17	25.4%
Cool and exciting	23	34.3%
Really cool and exciting	6	9.0%

Statistics
Total Responses 67

47. What age are you?

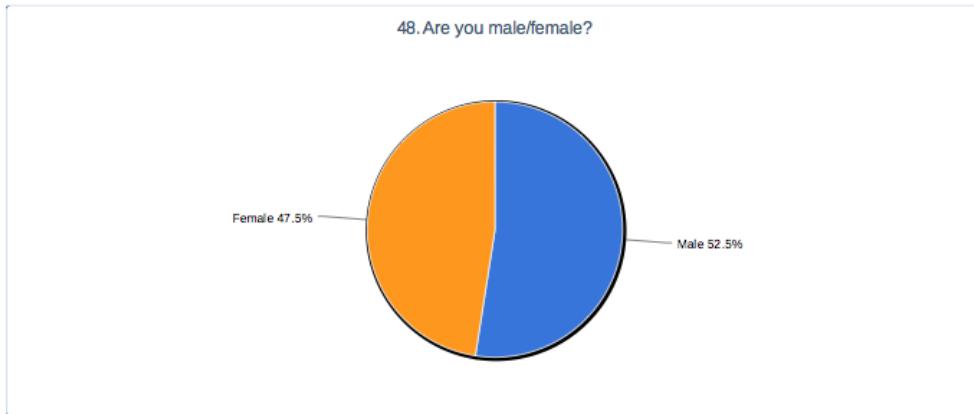


47. What age are you?

Value	Count	Percent %
under 18	0	0.0%
18-24	30	49.2%
25-34	26	42.6%
35-54	5	8.2%

Statistics
Total Responses 61
Sum 1,365.0
Avg. 22.4

55+	0	0.0%	StdDev	5.0
			Max	35.0



48. Are you male/female?

Value	Count	Percent %
Male	32	52.5%
Female	29	47.5%

Statistics	
Total Responses	61