BLISS AND THE MOBILE DEVELOPMENT BUSINESS

Filling the gap and taking advantage of the new challenges

between consumers and companies

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I. Abstract

Title: Bliss and the mobile development business: Filling the gap and taking advantage of the challenges between consumers and companies

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Summary: Numerous mobile applications are available to consumers but just few survive within the competitive environment that is created by the innovative mobile industry. This study has the objective to identify the current and future needs of both companies and consumers in regards to mobile applications. This dissertation covers insights of interviews and consumer surveys held within the Portuguese market. The study intends to expose the gaps and similarities between the perspectives of companies and consumers. The purpose of this study will help Bliss, a Portuguese mobile application developer, to improve its product by taking advantage of the challenges.

The main findings of the market research imply that both consumers and businesses share the idea that the importance of mobile applications will increase in the future and shape the society as we know it. Both primary and secondary data show us that the concern for data protection is substantial and poses an obstacle that needs to be overcome. More companies from other, traditional sectors start to move into the mobile development industry and relevant content and simple interface navigation remain key elements when it comes to building a successful application. Bliss Application has a substantial untapped potential for growth on the Portuguese market as the mobile development and adoption of mobile applications are still in its infancy.

Keywords: Mobile development, mobile applications, innovation, digital marketing, marketing research, consumer perspectives, trends and developments

II. Abstract (Português)

Título: Bliss e o desenvolvimento do mercado mobile: colmatar a falha e tirar vantagem dos desafios entre empresas e consumidores.

Autor: Rick Jan van Duursen

Sumário: São inúmeras as aplicações disponíveis para os consumidores, porém somente algumas sobrevivem ao ambiente competitivo originado por um mercado em constante evolução. Este estudo tem como objetivo identificar as atuais e futuras necessidades, tanto das companhias, como dos consumidores, no que respeita às aplicações móveis. Nesta dissertação é possível encontrar, não só resultados de entrevistas individuais, mas também inquéritos ao consumidor, no contexto do mercado Português. O estudo tem como intuito expor as divergências, bem como as semelhanças entre as perspetivas das empresas e dos consumidores. A finalidade deste trabalho é contribuir para que a Bliss, empresa de aplicações móveis portuguesa, aperfeiçoe o seu produto, tirando vantagem dos diversos desafios que se impõem.

As principais conclusões do estudo de mercado sugere que consumidores e negócios partilham a ideia de que a relevância das aplicações móveis irá aumentar, no futuro, e moldar a nossa sociedade. Tanto os dados primários, como os secundários, revelam que a proteção destes é substancial e apresenta-se como um obstáculo que precisa de ser ultrapassado. Cada vez mais empresas de distintos sectores de atividade de cariz tradicional começam a entrar neste mercado, no qual a facilidade de processos e a simplicidade do interface são fatores essenciais para o sucesso da indústria. Bliss Application tem um potencial inexplorado para crescer no mercado Português, uma vez que o desenvolvimento de dispositivos móveis e as suas aplicações ainda estão numa fase introdutória.

Palavras-chaves: Desenvolvimento de dispositivos móveis, aplicações móveis, inovação, marketing digital, perspetivas dos consumidores, tendências e desenvolvimentos

III. Acknowledgements

This thesis serves as my final work as student of the Católica-Lisbon School of Business & Economics. A different word for student is a learner. However, I will never stop learning even though I finished my studies. I want to thank the university and its professors for equipping me with a set of professional tools that will indisputably help me in any future employment.

I would particularly like express my gratitude to my supervisor Pedro Celeste for continuously supporting and guiding me throughout the intensive process of writing the thesis. Besides my academic supervisor, I would like to thank Pedro Janela of the WY Group for offering my the possibility for writing my thesis in regards to his organization. He opened his doors to me and was always available to help me out with the slightest doubt.

Finally, I would like to thank my girlfriend, my family and friends for helping me through the ups and downs and giving me the motivation to finish this last assignment of my student years. This dissertation is the result of all my academic endeavors and I sincerely hope it makes my loved ones proud.

''If you always do what you've always done, you'll always get what you've always got.''

- Henry Ford

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1. Introduction

1.1 Problem statement

Due to the technology and its pace of evolution, new mobile applications are being released every day. Bliss, a Portuguese developer of mobile application for businesses, is part of the WY Group's digital marketing agency. Many applications do not survive within the competitive and innovative business that is created by consumers. This dissertation aims to draw a perspective of both companies and consumer regarding mobile applications. This study will give insights and allow us to identify similarities or gaps between the two perspectives. With this insights of current and future needs for mobile applications, Bliss is able to improve and offer a better service to its clients.

1.2 Key research questions

KRQ1   What are the current trends and developments in the mobile development business?

KRQ2   What is the perspective of companies towards the current and future needs of mobile applications?

KRQ3   What is the perspective of consumers towards the current and future needs of mobile applications?

KRQ4.   What are the similarities and gaps between the perspectives of the companies and of the consumers?

KRQ5   How can Bliss take advantage of the future challenges of mobile applications?

1.3 Methodology

This dissertation consists of two types of research techniques as primary research. The first one is a semi-structured in-depth interview. Interviews will be conducted with 5 companies of different sectors mostly taken from the client portfolio of the WY Group. The interviews will be held with either the marketing manager or sales manager with sound knowledge of mobile applications. The interview (see Appendix A) has 7 open questions aiming to obtain insights into specific needs for each sector when it comes to mobile applications. The selected companies for the interviews are:

- ExcentricGrey   Marketing services
- Católica-SBE   Education
- ROCHE   Pharmaceuticals
- Vodafone   Telecommunications
- Luz Saúde   Health care

The second research technique is a quantitative online consumer survey. The survey (see Appendix B) intends to identify the habits and needs of consumers regarding mobile applications. Questions similar to those in the interviews will be asked to the consumers to pinpoint either the similarities or the differences between the perspectives of companies and those of the consumers. Finally, a set of demographic questions is used create a general consumer profile.

The survey is created with Qualtrics and is distributed through the social media platform Facebook and through direct marketing with personalized emails to invite consumers to participate in the survey. The sample size of the survey will be set around 200 respondents and has a set of 12 questions.

Secondary research consists of company data of Bliss and the WY Group that help in building a more accurate case study. In addition, secondary research contains academic articles and journals that have previously studied the key elements of this dissertation.

Scope and boundaries

The scope of this study is limited to the Portuguese market and both its companies and consumers. The companies that are interviewed are taken from the current client portfolio of WY Group. Insights of the interview are related to their respective sector.

The literature review helps to understand different elements in relation to the topic to be studied. It intends to cover only content that is related with marketing elements and mobile applications that complement in building the case study.

It is intended to conduct the survey for no longer than 2 weeks expecting the desired response quote of 200 respondents. However, if results are lower than expected, the survey will remain active until the threshold of 200 responses is reached.

References

The references in this dissertation are done according to the guidelines of the Harvard Reference System.

2. Literature review

The literature review intends to give information on the subject of mobile application in relation to marketing elements such as digital marketing and consumer perspectives. As the subject of mobile application is relatively young and less explored, not all topics covered can be directly related to subject studied in this dissertation. This literature review is constructed on an inverted pyramid scheme, providing more general information whilst zooming into the topic of this dissertation. Key words in this literature review are: mobile applications, marketing research, digital marketing, consumer perspectives, innovation and trends and developments.

2.1 Marketing research

Marketing research counts a numerous amount of research techniques to obtain the results set by the investigator. This literature review focuses on the techniques of in-depth interviews and online surveys.

Blankenship and Paradise (1951) state that in depth questioning may be defined as a method of questioning of which the purpose is to avoid superficial answers and try to probe below the surface to determine the thoughts or reasoning of a person. There are two types of depth interview; structured and unstructured. The interview is a method of questioning where the investigator is allowed considerable freedom in respect how he or she decides to phrase and arrange his questions to obtain the desired results. The depth interview uses many individually probing questions in a series to cover a particular issue. However, all questions are ''spelled'' out for the investigator, who is not allowed to deviate from the formalized questions. The structured interview uses questions on a specific topic merely as a beginning point to retrieve answers and follow up questions to discover thoughts and reasoning. As for the replies, the investigator must carefully weigh each response given and it is the purpose to ensure the respondent has fully understood the question. On the contrary, the unstructured interview covers a broad topic with usually no line of questioning.
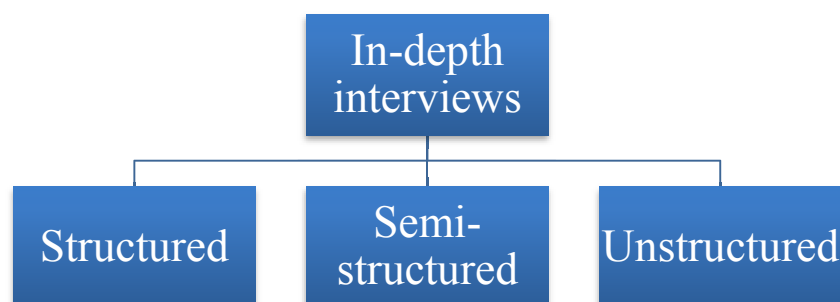

Figure 1. Types of in-depth interviews

According to Blankship and Paradise (1951) it is possible for the designers of the interview to intentionally or unintentionally introduce bias. This may be in the form of subject coverage, or in the phrasing or sequence of questioning. In a long interview, the possibilities of recording error are multiplied. As for the general dependability, Blankship and Paradise (1951) state that, based on the available evidence, unstructured interviews are the least dependable. In addition, the nature of the problem must be considered. If after exploratory work, the reactions of the populations can be obtained through a specific method of in-depth questioning, the nature of the population will determine which method to apply for the sample.

Sampling in general is a complex subject. More important in this literature review, is a specific element called the non-response bias. Completion of interviews with the assigned elements in a probability design will seldom reach 90 per cent (Cohen et al., 1959). The definition of your target group is crucial and the purpose of the research must be kept in mind. Marketing research is often criticized for its lack in research methods and failure to employ additional data that is more appropriate for the investigation of complex phenomena (Deshpande, 1983; Hudson and Ozanne: 1988). Boerstler et al. (2009) propose the use of multiple marketing research methods to produce results that are more robust and compelling than studied that were conducted by single methods. Using multiple methods provides a better perspective on the subject of study. It provides better research because you answer questions that cannot be posed in the framework of a different method. The triangulation of research methods demonstrates the robustness of a finding and provides (more) evidence of external validity and tells us more convincing story. Challenges arise in the costs and time of conducting multiple research methods. An additional downside is that reviewers tend to focus on the method of their preference and it requires more understanding and training on the methods.

Data collection through marketing research has evolved many time throughout the history and according to MacDonald et al. (2012) three factors have played a major role in these transitions: quality, collection cost and timeliness. Online surveys have the potential to collect data faster, with similar data quality and lower costs. However, surveys that intent to represent entire country populations, can introduce bias and the respondents tend to be younger, more educated and have higher incomes (Pew Research Center's Internet & American Life Project, 2011). Regardless of the challenges, the trade-off between obtaining the most representative sample and obtaining a sample quickly with low costs, leads many businesses and academic institutions to favor the online surveys.

Surveys play a crucial role in marketing research. However, a common concern with self-reports collected through surveys is that respondents may not respond truthfully but simply provide answers that make them look good (Paulhus 2002; Tourangeau and Yan 2007). According to Steenkamp et al. (2010), this is phenomenon is called socially desirable responding (SDR). The phenomenon introduces variations in the scale scores comprising the validity of the survey data. Usually researchers conclude

that SDR is not a problem (if the correlation is non-significant) or state that SDR is not a serious issue (if the correlation is relatively small).

2.2 Digital marketing

Koiso-Kantilla (2004) introduces the concept of digital content marketing or the marketing of product in which both the entity and delivery of product are digital; such digital content is becoming more important in the commercial environment. Regardless, the customer value remains the central point of the digital environment. According to Rowley (2008), digital content is defined as: ''bit-based objects distributed through electronic channels''.

The issues that arise are to what extent the producers of digital content are simply producers of the content or intermediaries who must identify the target consumer and meet their needs (Bartussek, 2001). In addition, Stahl et al. (2004) suggest that market share cannibalization takes place when the same content of a company is offered online and offline. Rowley (2008) suggest that the optimum balance for companies of digital content lies within a balance of their services/content delivered through different channels.

''Marketing is an organisational function and a set of processes for creating, communicating

and delivering value to customers and for managing customer relationships in ways

that benefit the organisation and its stakeholders''. (Gronroos, 2006)

The creation of superior customer value is key for the success of a brand (Gravens et al. 1997; Higgins, 1998). The value chain is indispensable for both online and offline content. Rowley (2008) states that customers are having difficulties in ''fixing notions of value in relation to digital content''. The difference in the digital channel is that the product or service information becomes the dominant element in the marketing communication (Janal, 1998). For digital content, both the marketing communication and product are considered information for consumers. One of the key issues in digital marketing content is getting the consumer to pay. ''The internet consumer is accustomed to free information'' (Swatman et al. 2006, p.64). This development leads to volatility in price levels when it comes to pricing strategies for digital content as consumers see a weak link between quality and price for digital content.

Smartphones and mobile apps have shifted the power from brands and retailers to consumers (Hendrix, 2013a, 2013b). The main challenge according to Rowley (2008) the consumers' perception of the value of digital content. The customers experience of the digital content is influenced by all stakeholders in the value chain, including the consumers' contribution. The contribution of the consumer depends on the learning, skills and receptiveness to digital content adoption.

2.3 Mobile applications

In 2007, Apple launched the first mobile phone integrating personal data and touch panel functions. The penetration rate of smartphone grew tremendously. Smartphone global shipments and sales amount to more than 900 million dollars with the smartphone representing 50% of all mobile phones (IDC, 2013). With that rapidly growing market, the application service market brings significant business opportunities. The mobile app market is becoming increasingly competitive and contributing to information overload because users have access to an high amount of product information when making a (purchase) decision (Shen, 2015). According to Chen et al (2009) it is crucial business practice and creating mobile applications to resolve the information overload that may inhibit the ability of users to process the information.

Downloading mobile applications (apps) have become indispensable in the smartphone users' life. Therefore, the users' evaluation is crucial to success of an app. In the online app market, signals such as rating scores help consumers to choose the proper application for a service or product (Shen et al. 2011). The utilitarian and hedonic values the consumer associates with the product may be key factors that influence the consumers decision making process. Applications for hedonic products with enjoyable benefits may evoke consumers' pleasure-oriented consumption to pursue the entertainment value (Liu, 2006; Strahilevitz, 1999). On the other hands, applications for utilitarian products with practical benefits might evoke the need of the consumer for diagnostic signals e.g. rating scores or reviews of an app's function (Filieri, 2015). In an experiment conducted by (Shen, 2015), it is confirmed that the popularity of an application is effective for an increased consumer evaluation for hedonic products/services. As for utilitarian services and goods and high-risk perceived condition, a rating score showing experiences of other users creates an increased evaluation. In addition, online app downloading exists in a digital marketplace where parties do not meet. The monetary costs of an application and dysfunctional loss greatly affects the perceived risk of a consumer when purchasing an application (Walter, Gupta and Su, 2006).

According to Delone and Mclean (1992, 2003), the success of an information system, here mobile applications, has three main phases (see figure 2). The first phase is development that includes the quality of the system on which its operating, the information provided and the service. The second phase involves the use and deployment and elaborates on the intention to use and the actual use of the system. It also includes the overall consumer satisfaction of the system. The last phase elaborates in the impact of the system mainly translated into the net benefits.

A study conducted by Scornavacca and McKenzie (2007) shows that although time and costs remain important factors for mobile marketing, elements such as content, permission and acceptance are more significant. Users opt-in, permission and acceptance are vital to the success of mobile marketing according to Fachetti et al. (2005) in the stage of development. As for the second stage, it is vital to establish a deep and long-term consumer-brand relationship that can only be achieved by increasing the trust between the company and its consumers (Ryals, 2011). Mobile marketing channels allow interactions between the company and consumers (Barnes, 2006).

From a consumers' point of view, privacy protection remains a great concern in mobile marketing service deployment (Barnes & Scornavacca, 2004). Barnes et al. (2004) states that it is key to inform consumers how their private information is stored and used. In addition, consumers should have control over the permission to grant information hence making the acceptance and permission key factors to the success. The overall study by Huang (2012), based on the model of Delone and McLean, indicated permission, acceptance and value/profit for the consumers as the most critical elements to the success of a mobile marketing information system.

Looking at mobile applications as a topic, the phenomenon of technological adoption is inherent. The adoption of technology, mobile applications in this case, has several phases representing the lifecycle of a technological product or service introduced to the consumer market. The technological adoption lifecycle of Rogers (see figure 3) explains the theory how, why and at what pace new technologies are spread and adopted by cultures. Rogers approaches innovation in the following steps for consumers' adoption: innovators, early adopters, early majority, late majority and laggards.
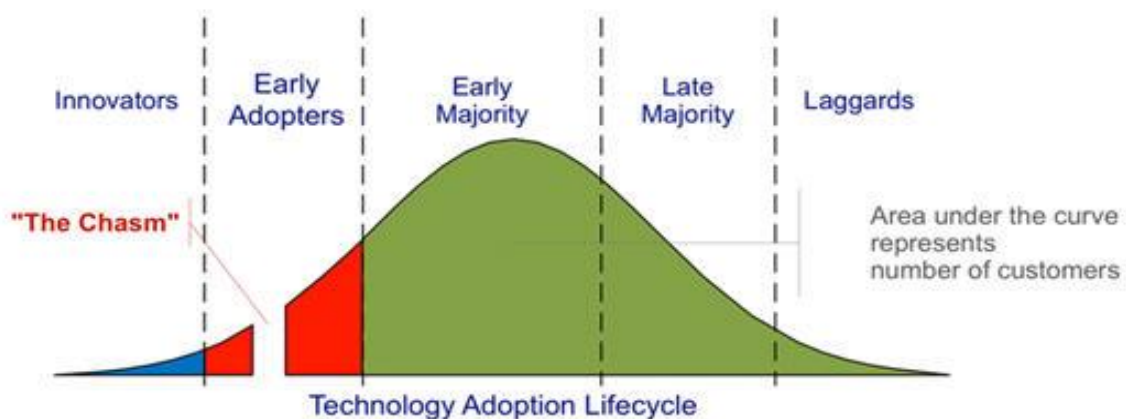

Figure 3. Technological adoption lifecycle (Rogers, 2003)

The first and smallest group of the lifecycle are represented by the ''innovators'' and account for 2.5% in absolute numbers. Innovators are considered as the first individuals that adopt an innovation. They are curious and willing to take risks, have a relative high social class, have great financial income. Innovators are social persons with close contact and knowledge of scientific source and interaction with other innovators. The high tolerance for risk allows innovators to adopt technologies that eventually might fail.

Early adoption (34% of the total lifecycle) is the second stage of the adoption lifecycle. These individuals form a general degree of opinion leadership on the introduced innovation. They share similar traits with innovators but usually tend to wait and are more discrete in adopting new technologies. Making a judicious choice for adoption helps the early adopters to establish and maintain the central communication position. The third phase is represented by the late majority, accounting for 34% of the size of the lifecycle. They hold little leadership, are considered skeptic and only adopt technology after it is fully adopted by the early adopters.

Finally, the laggards are the last in the phase of innovation adoption. These individuals tend to have an aversion to changing innovations and are usually older aged. The laggards have the tendency to be focused on traditions. Once the lifecycle reach this point, the innovation has been completely adopted.

As seen in figure 1, critical mass is reached between the stage of early adopters and early mass and is the determining moment for a new technological to be considered a success or a failure in adoption. Reaching and maintain critical mass is often the most challenging task for most companies (Rogers, 2003)

Adhami (2012) states that many marketers, agencies and companies are missing the common sense and understanding of what an excellent mobile experience is. Before creating a mobile solution, you need to understand your audience, the consumers who will actually be using your mobile application, your employees and the overall technological maturity/adoption of your industry. Three main factors translate into success for mobile applications; user experience, user interface and design. Increasing consumer experience, meaning increased interactivity between the brand and the consumer, through simple to use interfaces and innovative designs are key elements.

3. Case study

This case study concerns the mobile development business in Portugal specifically designed around the company Bliss Applications. The case study consists of out an overview of the market, an overview of Bliss Applications, a competitive analysis and finally the challenge Bliss Application has in this market.

3.1 Overview of the mobile development business

First of all, it is important to state that only several elements of the mobile development business are included in this case study such as overall numbers of existing applications, the numbers of users, penetration rates and valuation. This overview aims to create a simple image of the size, impact and relevance of mobile applications in the current society.

The birth of mobile applications came with the introduction of mobile phones and quickly grew after the smartphones reached the masses. Even though smartphones exists over more than 20 years already, only in 2007 with the launch of the iPhone by Apple (IDC, 2013), they became appealing to and used by the critical masses. Nowadays the so called ''fourth industrial revolution'' is often mentioned to define the speed, scale and impact of new technologies in the society we know today[1]. Klaus Schwab, founder of the World Economic Forum, defines the first three industrial revolutions as: ''the transport and mechanical production revolution of the late 18th century; the mass production revolution of the late 19th century and the computer revolution in 1960s''. Some see these developments as a mere extension of the third industrial revolution but it is indisputable that the new technologies have a great impact in how we, the consumers and businesses, shape the society in which we live. Regarding the dimension of mobile applications, the main trends are the increasing popularity of wearable devices and increasing the user experience of the mobile application. In the end, it is the consumer that shapes the society and the business models of companies. It is the consumer that forces companies to align with the reality that defines the experience of the consumer.

Technology is so fast paced in changing that the technological adoption of the consumers, the company and its individual employees might not meet the pace of technology. This time needed for adaption can be rephrased as the mobile development business being in its infancy and much is left until technological maturity is reached. Just as important is the penetration rate of smartphone usage per capita per country. Nielsen, a global marketing agency providing consumer insights, pointed out that the US reached its critical mass in 2013 implying that half of the US population owned a

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[1] https://next.ft.com/content/9930245c-b924-11e5-bf7e-8a339b6f2164

smartphone. On the contrary, countries such as India, Brazil and Russia are still using the traditional type of mobile devices without touch screens or operating on an advanced system[2]. As of July 2015, the Google Play store accounted for 1.6 million applications available to consumers while the Apple App Store provides a solid range 1.5 million applications. Even though it is difficult to pinpoint the exact net worth and size of the application development, a study conducted by the UAB Collat School of Business indicated that by 2017, more than 268 billion applications will be downloaded worldwide and the global app market represents a valuation exceeding 77 billion dollar[3]. The digital era arrived and mobile applications are everywhere to be found. Not only B2C mobile applications are booming but traditional sectors are making a move into the new dimension as well. The main sectors such as health care and financial services are adopting the use of mobile applications as means for B2B and B2C.

As for Portugal, there are more than 5 million smartphone users in Portugal (May 2015) being equivalent to a rough 60% of all mobile phone users in Portugal[4]. Smartphone ownership rates among those aged between 15 and 24 are higher than the 55% average rate according to Marktest, a Portuguese entity providing market studies. The entity also pointed out that Portuguese males, resident in Greater Lisbon or Porto and those of a higher socio-economic class represent a penetration rate above 60%. These penetration rates are expected to increase further for the next years as smartphones become cheaper and therefore affordable for the masses. Portugal, as a mobile market, has a high mobile phone penetration rate (115%) and therefore the opportunity for electronic commerce could be large. Alexandre Nilo, president of the ACEPI, suggest that mobile phones could be the ideal platform to counter one of the biggest challenges in the development of M-commerce in Portugal: digital illiteracy. An approximate of 70% of the Portuguese has not completed their secondary education. Nevertheless, e-commerce is growing because low prices are offered online but a second challenge remains; the consumer confidence in the data protection when providing personal and or financial data online[5].

Looking from the business point of view in Portugal, the mobile landscape is changing as well. Many marketing services agencies are offering a broad range of services of which one is the mobile development for own use and for businesses. However, many of these agencies are seeing employees transforming into freelancers or its entire business being acquired by larger multinationals. These multinationals in Portugal, such as Deloitte and Accenture, have started to enter the mobile development business and are able to compete on a larger scale with smaller agencies. The challenge that is raised is how smaller agencies survive in the competitive market of mobile applications.

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[2] http://www.nielsen.com/content/dam/corporate/uk/en/documents/Mobile-Consumer-Report-2013.pdf
[3] http://www.entrepreneur.com/article/236832
[4] http://www.smart-cities.pt/en/noticia/smartphone-chega-a-60-dos-portugueses-0807/
[5] Consumer Lifestyles Portugal (2013), Euromonitor

3.2 Bliss: a mobile player in the new era

Bliss Applications, established in 2009 in Portugal, is part of the WYgroup, an organization that specializes in marketing services both digitally and technology which helps their clients to grow. The group counts 209 employees and is led by 17 partners. With creativity and innovation, employees offer services such as mobile applications, digital and integrated marketing, search and performance marketing as the main revenue streams. Its portfolio of clients holds large companies in the Portuguese market such as supermarket chain Minipreço or media holding company NOS. Bliss and the overall group have a relatively flat organizational structure and the majority of companies work together in one building in Oeiras located in the Lisbon area.
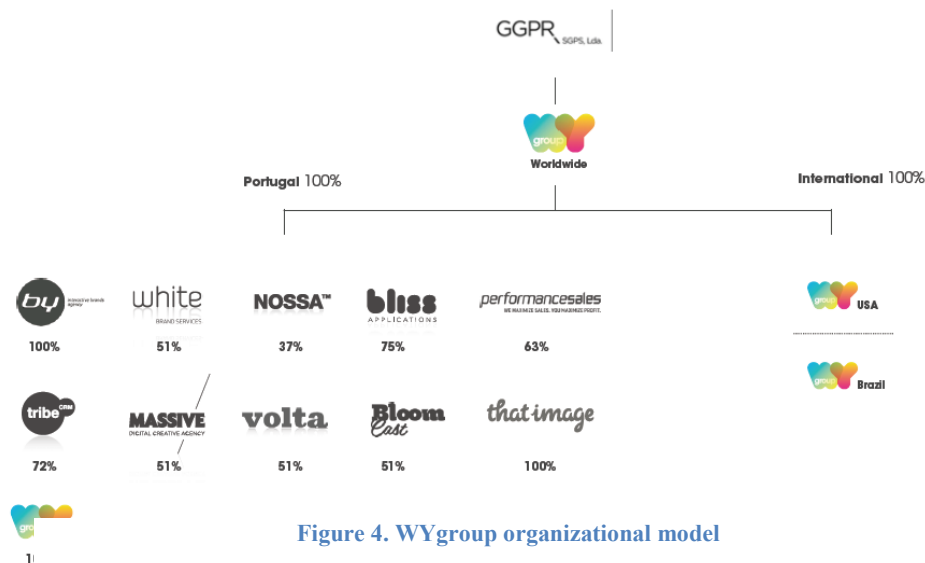

Figure 4. WYgroup organizational model

The group managed to maintain a stable growth even though the Portuguese economy faced tough challenges during the last decade. The positive results were mainly due to a resilient business model which entails the policy to finance the companies with own capital and maintaining a low level of debt. Revenues exceeded 5.5 million Euros in 2014 with a respective EBITDA to revenues ratio of 21.17%[6]. The group defines several factors for its success such as its partners and the fact all companies work in the same place. Across international borders, Bliss operates in Boston, Lisbon and Sao Paulo. Bliss works together with both private and public companies, multinationals or start-ups, helping them to grow in their business. Based on extensive experiences from different industries, Bliss offers B2C mobile solutions as well as B2B mobility solutions for business processes. The way Bliss works in projects is by answering the needs of the clients but also by proposing own suggestions for the mobile application to improve. The team is composed of people with sound knowledge and results on design, utility and web and mobile based software. The latest projects Bliss has been working on were for clients Staples, the number one office supplier, and BPI, a Portuguese bank. Examples of one their recent project with the worldwide officer supplier Staples:

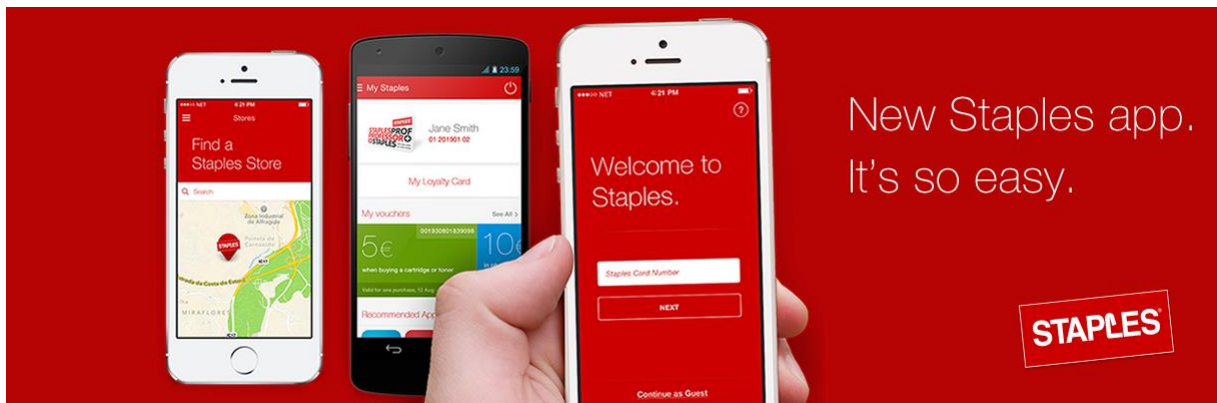[6] Company presentation (2014), WYgroup

Figure 5. Example of the Staples application

Bliss improved the application mainly on utilitarian aspects such as the navigation flow through the application and the overall simplification of using the application to increase consumer experience. The key business segments of the group for future growth are the search and performance services and the mobile development business. While search and performance services is the largest segment in terms of absolute growth and revenues, the mobile development business is the primary growth unit. Bliss Applications has international opportunities where a huge demand exists for mobile engineering services in markets as the Brazil and USA. Developing its product base locally and implement it internationally, Bliss represents the international opportunity for growth of the WY group.

3.3 Competitive analysis

There are numerous companies offering digital marketing services and only few specialize in the development of mobile applications. This analysis concentrates on the main competitors for Bliss Applications. In this analysis, the competition consists of digital agencies that offer mobile solutions, multinationals entering the digital market and local companies mainly focusing on mobile development.

Isobar Portugal

Isobar is one of the many competitors in the business of mobile development. The digital agency offers a full range of service on a worldwide basis through 70 offices across 44 markets. Its portfolio of clients in the Portuguese markets mainly work with consumer products e.g. food and sportswear.

Havas

This large agency works on a worldwide base and has several branches in which it operates. Havas Digital Portugal is the unit representing the marketing services. With a team of 30 employees, Havas operates the Portuguese market and is zooming into the mobile solutions. Their work is to be found through many local companies such as the media holding company NOS and supermarket chain Continente. Having multiple branches for operations means a larger portfolio of clients and able to offer them additional services including the development of mobile applications.

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Accenture

In this case, a much larger firm zooming into the digital operations as well. Traditionally, a management consulting firm is now offering a broad variety of service including Accenture Digital. The digital worldwide operations' revenue hit a 5 billion dollar mark in the fiscal year of 2014 and accounts for 17% of the entire business. Accenture explains that the digital business is one of the big engines that drive growth. Accenture Digital not only focuses on the B2B markets but as well as the B2C markets and states that enhancing the customer experience and engagement are vital.

Deloitte

Similar to Accenture, Deloitte started its own digital operations as well. As described in the trends and developments, this traditional auditing firm recently acquired a Polish digital agency for its operations to establish and expand in the digital services industry. This is a perfect example of how larger companies are acquiring smaller local agencies and their long years of experiences. In this way, Accenture is complementing its assets of being both a consultancy and digital agency and makes its way into the digital market.

Thing pink

Unlike the competitors mentioned previously, Think Pink is a rather small agency that mainly focuses on the development of mobile solutions. Its operations are based in Porto and Lisbon and do not have any international offices. The projects in their portfolio are entirely done for local companies such as MEO, one of the largest telecommunication companies in Portugal.

3.4 The challenge

The mobile development business is booming and everyone wants a piece of the pie. Many factors determine the success of an application in the competitive market. It is important to understand both the business' point of view and that of the consumer in order to create a successful application. Bliss Application has been steadily growing over the last years and is striving to maintain that growth on both the Portuguese and international markets. The question in this case study is how can Bliss take advantage of the differences and similarities of the point of views of the companies and consumers. By tackling this strategic marketing challenge, Bliss can improve its services, products and capitalize on the local and international growth opportunities. The main focus in this case study is on how to capitalize on growth opportunities for the Portuguese mobile application development industry.

4. Market research

4.1 Methodology

In order to answer the key research questions in this dissertation, two types of market research were conducted; in-depth interviews and an online consumer survey. The interviews were conducted in person within the month of February 2016. Interviewees all hold positions directly related with insights or managing the mobile application of the firm. The interviewees/companies selected were in agreement with Bliss Applications for the most useful insights regarding mobile applications. Each interviewed company belongs to a different industry resulting into overall clear point of view from a business perspective. For detailed interview methodology, please see appendix A. In-depth interview guidelines.

Secondly, the online survey was commissioned between February and March 2016. The survey polled an approximate of 200 respondents. In addition, 25 surveys were conducted manually and later added to the data set to meet the quote. The additional surveys compensated for the errors in responses recorded online. The survey was designed to create a general consumer profile of the Portuguese population regarding mobile applications. Three different subsets of questions were asked; general behavior and usage of mobile applications; associations and perspectives towards mobile applications and demographics. For detailed survey methodology, please see appendix B. Survey Guidelines.

4.2 Analysis

In-depth interviews

The interview consisted of 7 open questions regarding mobile applications. The analysis fully intends to describe the consensus among the interviewees regarding each question. If needed, quotations will be used to directly describe the common view on a certain topic. For full transcript, see Appendix C.

All interviews explained that the mobile application is created to enhance the consumer experience with the brand or company. The mobile application main purpose is to solidify the consumer-brand relationship. The application can be used to simplify the relationship between a consumer and a brand and differentiate itself from its competition. 4 out of 5 interviewees stated that the application was created driven by the demands by the consumer. In other words, the company answers the needs of the consumer for a better relationship with the company.

''We developed the app for our consumers and to facilitate internal processes for own employees''.
David of Luz Saude

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It helps us to understand that the mobile application is a digital tool that simplifies the relationship between the brand and company by creating a platform used by both parties. The strengths of the mobile application mainly translate into the continuous presence of the brand by the touch of a button. In addition, the consumer experience with the brand is strongly enhanced through the use of mobile application if properly executed.

On the other hand, a mobile application has weaknesses as well. The most mentioned topic was the cost of initial development and maintenance.

''The maintenance costs remain to be a weakness as the application itself evolves alongside the system on which it operates''. David of Luz Saude

The costs of a mobile application are relatively high in comparison to other digital tools e.g. a website and are often underestimated by companies. If not executed and managed properly, it is not worth to create a mobile application merely for the sake of having one. In addition, the competition is fierce for the attention of the consumers when it comes to actually downloading, installing and using the application on the consumers' device:

'' The adoption process for a native mobile app has too many steps, each step brutally decreasing the conversion rates''. Francisco of Vodafone''

Finally, data protection of consumer remains a weakness of mobile applications. Depending on the industry, the consumer data is highly sensitive and often poses an obstacle in the relationship between the consumer and the brand.

When asked about the critical factors that determine the success of a mobile application, all interviewees agreed on the fact that the mobile application needs to be relevant and distinctive to its consumer target group.

''Many applications now focus on ''entergagement'' or ''edutainment'' combining the main aspects of engagement and entertainment through interactive teaching methods''. Joana from Católica-SBE

Regardless of the sector, the underlying idea is to create a positive interaction with the consumer by teaching them something related to your brand or industry. A critical factor is pinpointing the tipping point between the early adopters and the masses when talking about a ''benevolent'' app that is made for monetization. Managing the critical mass is determining for the success as well.

''Aggregating multiple dimensions of different apps into a single app will allow apps to become more effective''. Nuno of ROCHE pharmaceuticals''

Mobile applications can be more effective to consumers and for business if it aggregates multiple dimensions into one. Many consumers are overwhelmed by the amount of available applications offering a single dimension. Consumers are carefully selecting applications and eventually use a handful. The integration of mobile applications with wearable technology/devices was mentioned by 2 of the 5 interviewees. Wearable technology, according the 2 interviewees, is a trending topic and mobile applications should be able to operate on all systems and devices.

Metrics used to analyse the performance of the mobile applications were similar among all interviewees. The number of downloads, activations, registrations, uninstalls and the time elapsed between installing and uninstalling are the most used metrics. In addition, behavioural data such as the navigation flow of consumers through the application, time spent using the application per day, week or month give insights how consumers are using your application.

''Mobile applications will be increasingly important in the future because the internet of things is becoming reality''. Miguel of ExcentricGrey

All interviewees agreed on the point of view that mobile applications will become more important in the future even though it is in its infancy. The consumer decides how to shape things and the (traditional) sectors act accordingly. There was a disagreement in the point of view that digital maturity is being reached already or not.
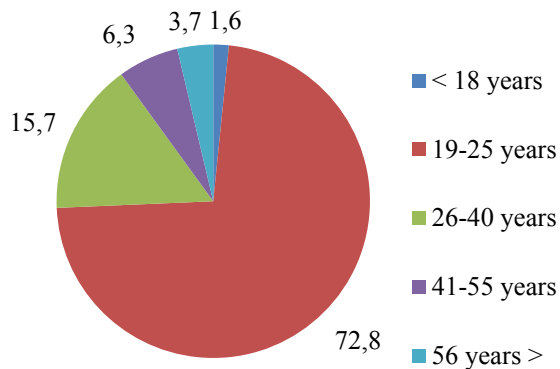
Online survey

The online survey was commissioned between the months of February and March 2016. The survey polled 204 responses in total of which 191 responses were complete. The 13 units that were not fully completed are not considered in the analysis. Upon request, the entire SPSS dataset can be made available.
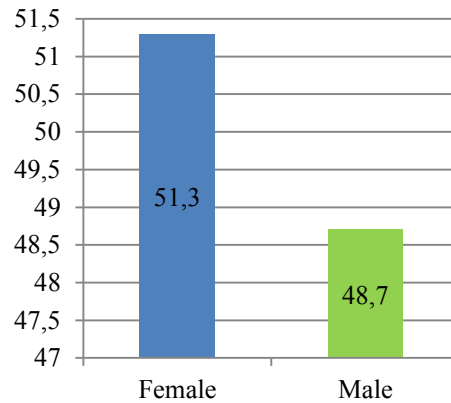
Demographics

140 respondents (73%) belonged to the age group of 19 to 25 years. Within age group, 111 were students, 28 employed and 1 unemployed. The groups with ages 26 to 55 years old represent 24.5% of the surveys sample. The second age group mainly consisted out of employed persons (39 out of 42) while the remaining were either a student or unemployed. The overall age representation can be considered quite young as the main group age corresponds to those aged between 19 to 25 years and being students. Nonetheless, the literature review proved young consumers to be more receptive in adopting new technologies, in this case the use of smartphone and mobile applications.

Graph 1. Age distribution (%)

Legend:
- < 18 years
- 19-25 years
- 26-40 years
- 41-55 years
- 56 years >

Values: 6,3   3,7   1,6   15,7   72,8

Graph 2. Gender distribution (%)


Female: 51,3   Male: 48,7

Behavioral data

The first question asked the consumers whether the actual make use of mobile applications or not. 98,4% of the respondents stated that they use mobile applications hence having a smartphone. Only 3 responses were recorded to not use mobile applications.

The main purpose of using mobile application was by far entertainment (83,2%) as number one type of application, followed by using mobile applications as a mean of socializing or source of information. Seeing this result, mobile applications are still mainly dominated by gaming and social media apps as number one in terms of usage.

Using mobile applications as methods to make payments or purchase products was relatively low. However, the main age group stating the use of mobile applications as a mean to make payments or purchase products is between 19-25 years old. There were no substantial differences in gender regarding the use of mobile applications as a method of payment.

In the past month, the consumer downloaded an average of two to five applications and average time spent once the application is opened is only between 2 to 5 minutes. This behavioral data does not show any differences between males and females. An interesting insight is that only youngster with the age of 19 to 25 years old state to download more than 5 to 10 applications in the past month.
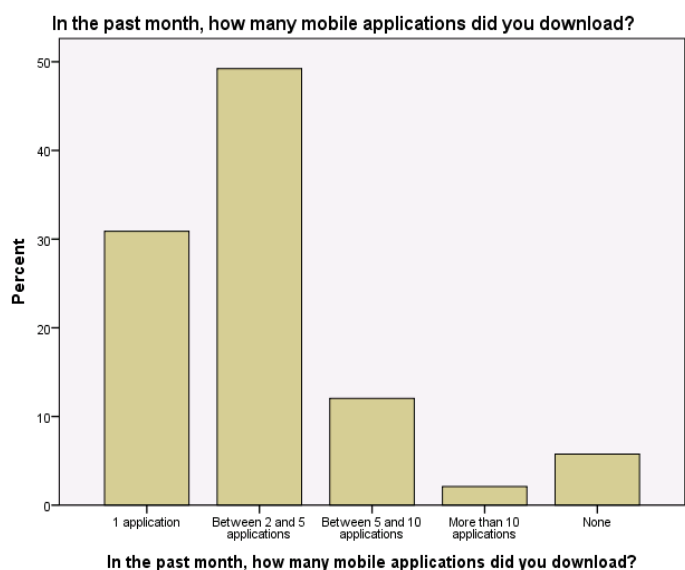
Graph 3. Number of applications downloaded

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The most important elements when building a successful application according to consumers were; content, easy navigation/interface, free of charge, privacy protection, integration with other platforms, works offline, possibility to change to own preferences and finally the size of the app. Salary income was not asked in the survey but an implicit assumption is that the mobile application is free of charge is relatively important due to the fact the biggest response group consisted of students between 19 to 25 years old

Once you opened an app, how much time do you spend on it on average?

Once you opened an app, how much time do you spend on it on average?
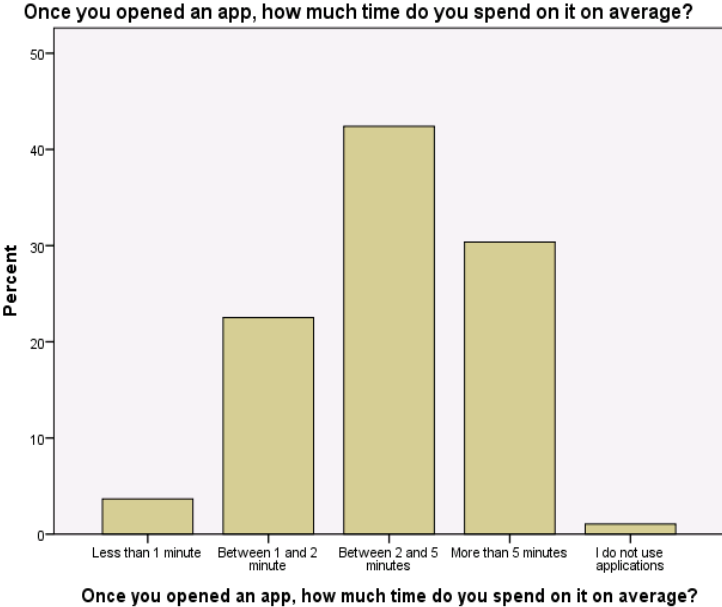
Graph 4. Average time spent using an application

with a lower income level. Nonetheless, content and easy flow through the interface were by far the most important elements that determine the success of an application.

When asked how secure the consumer feels or would feel when making a payment through a mobile application, the answer can be considered neutral. An average of 58,00 on a scale from 1 to 100 on how secure you would feel indicates a neutral to slightly positive attitude towards making payments via an app. A general conclusion and interpretation of the survey, in combination with literature review and the interviews, that the privacy protection of consumers in regards to mobile applications remains a hurdle that needs to be overcome in order for the mobile development business to grow.

Associations and perspectives

When asked if consumers think mobile applications will be more important in the future, the general consensus was between likely to very likely (4,40 mean on a scale from 1 to 5). As for the consumers using more applications in the future, the answers resulted into a mean of 3,92 implying that consumers will likely be using more apps in the future. Consumers tended to be neutral on the statement whether all companies should have apps or not. In the surveys conducted personally, it was stated that some smaller companies are not capable of managing an application and should not create on merely for the sake of having one. On the contrary, larger enterprises are often expected to have mobile applications.

5. Conclusions

This chapter provides conclusions and answers to the key research question developed in this dissertation. Conclusions will be drawn based on the literature review, case study and market research conducted in this report.

The main findings of the literature review showed that conducting multiple research methods provides the benefit of having more robust insights that would not be able to obtain within a single framework of marketing research. Digital content marketing has become an indispensable part of the consumers' lives and hence the challenge for brands is born to meet and create superior value for the consumers. Literature review also showed that the success of the development of a mobile application not only lies in the adoption of the consumers in your industry but also in the company, its individual employees and their capability to properly manage and analyze it.

The current trends and developments in the mobile industry are seen in the upcoming of wearable technology and with that the integration of mobile applications. Increasing interactivity between the consumer and brand, enhancing customer experience through new designs and simple interface remain to be the key factors that determine the success of a mobile application. Mobile applications in itself can be considered in its infancy and Portugal has untapped potential for growth due to the huge penetration rate of mobile phone users and increasing rate of smartphone users. However, the potential for growth and business does not go unnoticed as many agencies offer mobile solutions as well as larger firms, such as Deloitte and Accenture, make a move on the growing market. Also companies from traditional sectors such as banking and health care are looking for mobile solutions that fit the reality of their customers.

Taking a closer look at the perspective of Portuguese companies, five interviews were held with different sectors. The main findings of the interviews implied that mobile applications are indisputably growing as demands are shaped by consumers and companies act accordingly. Therefore, being relevant, distinctive and interactive prove to be critical success factors when building an application. The general consensus was that mobile applications are mainly build for simplifying and enhancing the consumer-brand relationship rather than using it to create brand awareness. A recurring topic was the aggregation effect of mobile application implying that mobile applications could be more effective by aggregating multiple dimensions of different applications into a single app for increased convenience of the consumer.

As for a consumers' perspective, the online survey provided a general consumer profile. The general conclusions from the survey indicate that even a neutral standpoint was taken by the sample on making payments via a mobile application. However, the majority did not state to use the mobile application as means to make payments or purchase products. Significant differences in gender in behavioral data were not found. After relevant content and a simple use of the interface, privacy protection was considered a critical factor when building a mobile application. The general conclusion drawn is that the concern of privacy protection is increasing, which is aligned with the findings of the literature review, whilst the survey sample also indicated the overall importance of mobile applications and use by consumers will increase in the future.

Even though the perspectives are from two different points of view, some similarities were found between those of the consumers and companies. The two parties share the general idea of the increasing importance of mobile applications and its indispensable role in our lives. With the increase of use, the protection of privacy and personal data is a growing concern from both perspectives. The overall conclusion is that both perspectives are quite equal. The demand shapes by the consumer are being met well in Portugal but the pace of technology is so fast that companies have difficulties in trying to keep up.

As a final conclusion, Bliss Applications can benefit from the insights generated by the literature review and market research. The insights of the interview can be used directly to improve the existing applications on the following elements: consumer experience through increased interactivity, new appealing designs and improved privacy protection. The demand for digital literacy also proves to be an opportunity for Bliss. Bliss can educate their clients and their customers through simplified digital procedures by the means of a mobile application.

6. Limitations and future research

Limitations

Content of the literature review can be considered lagging as the topic of mobile application is a relatively young subject to studies. In addition, mobile applications are strongly dependent on the pace with which technology is evolving. Therefore, results and conclusions based on both primary and secondary research might be obsolete on short notice.

Some questions of the online survey did not provide any useful insights. Once the online survey was closed and analyzed briefly, some errors occurred. To compensate for those responses that were incomplete, the survey was conducted in person and responses were later added to the data set. When the survey was conducted personally, it became clear the incomplete questions of the data set were prone to error and misunderstanding by the respondents.

The scope of this dissertation is limited to the Portuguese market, its consumers and businesses. Data and conclusions cannot be extrapolated to other markets without doing research beforehand. That is because other markets have other rates of adoption of technology and penetration rates of smartphones. Also, primary data was obtained through in depth interviews with several companies of different sectors of the economy. However, not all sectors were interviewed and different results might be obtained depending on the specific type of business sector in which the company is operating.

Suggestions for future research

First of all, data protection and overall privacy of the consumer were much mentioned topics from the interviews and surveys. I recommend studying in what degree and how the consumer is concerned with their privacy when using mobile applications specifically in Portugal.

In addition, Bliss Applications can research a selection of companies of its portfolio and its consumers about their perspectives and associations directly with the mobile application of that company. Also, Bliss or the WY group can propose to study the technological maturity of the overall organization and of individual employee. By doing so, Bliss will know how to improve the application in order to better align with the organization and its workforce.

Finally, as Bliss strives to implement developed software across international borders, a suggestion for future arises. I would strongly suggest Bliss to investigate in which degree they can implement the same application used in national markets as for using it in international markets e.g. the USA.

7. Teaching notes

7.1 Synopsis

Numerous mobile applications are available to consumers but just few survive within the competitive environment that is created by the innovative mobile marketing. This study has the objective to identify the current and future needs of both companies and consumers in regards to mobile applications. This dissertation covers insights of interviews and consumer surveys held within the Portuguese market. The study intends to expose the gaps and similarities between the perspectives of companies and consumers. The purpose of this study will help Bliss, a Portuguese mobile application developer, to improve its product by taking advantage of the challenges.

7.2 Target audience

Bliss Applications' case study is related to several academic topics just as strategic marketing, innovation, mobile marketing, marketing research, trends and developments. This case can be applied during marketing related classes for both undergraduate and master degrees. The presence of mobile application is so dominant in our society today that every student can relate to the concept. In addition, the case study covers trending topics such as digital and strategic marketing, mobile marketing and consumer behavior. The relevance of the study is directly applicable to the mobile app industry.

7.3 Teaching objectives

This case study is applicable to real business scenarios and has some key teaching objectives:

I. To establish common knowledge on marketing research techniques; qualitative methods such as in-depth interviews and quantitative methods for online surveys.

II. To understand the concept of mobile applications and the pace of technology; what is the current impact and how will it impact the future?

III. To gain an understanding of a consumer and business point of view on the mobile applications; what are similarities and what are the differences?

IV. To draw conclusions based on the provided data from both the interviews, the survey and the case study; how can Bliss best improve its services and products to capitalize on the growth opportunities for the Portuguese market?

7.4 Teaching plan

In order to use this case study successfully among the target audience, it is advised the students read the case study prior to the class in which the case study will be discussed. The approximate time to read, analyze and discuss the case study is 1.5 hours. For the students interesting or unfamiliar with the topic, it is recommended to read the following articles:

A.   Arriola, J., Chiem, R., et al. (2010) ''The critical success factors for marketing with downloadable applications: Lessons learned from selected European Countries'', Mobile Marketing Association, pp. 43-54;

B.   Hubbel, K.R. and Luterbach, K.J. (2015) ''Capitalizing on App development tools and technologies'', TechTrends: Linking research & practice to improve learning, pp. 62-70;

Some questions will directly relate to information given by the case study and market research. The final question will allow class discussion to create interaction between the students and professor.

I. According to the case study; what is the current state of technological maturity in Portugal?

Students should be able to identify facts from the case study and provide arguments on the topics. Possible answer to this question is:

A. The current state of technological maturity in Portugal can be considered in its infancy. However, Portuguese consumers do represent a huge opportunity for growth possibilities in the mobile app market as the mobile phone penetration rate is significantly high (115% per capita).

II. According to the market research; what is the perspective of consumers towards mobile applications?

Students should be able to identify highlights and generate a general perspective on the topic. Possible answer to this question is:

A. Consumers are setting the demand and have the power to shape the mobile application industry as companies need to fit the reality created by consumers. Consumers are increasingly using mobile applications as it becomes an indispensable part of their lives. For Portugal in specific, the concern for privacy protection and mobile banking remains an issue that needs to be tackled through education and overall adoption of technology over time by the consumers.

III. According to the market research; what is the perspective of companies towards mobile applications?

Students should be able to identify highlights and generate a general perspective on the topic. Possible answers to this question are:

A. All companies are adapting strategies to fit the need of the consumer to create superior value. The app market is promising, growing but extremely competitive. The critical factors for a successful application are increased interactivity, simple to use interface, new design. Even more important is to identify your target consumer and adapt your mobile application accordingly. In addition, reaching and maintain the critical mass prove to be the main challenge among mobile applications.

IV. Imagine you are the marketing director of Bliss Applications; what is the current impact of mobile application in our society and how will it impact the future?

Students should be able to state the current and future impact based on the information from the case study. In addition, the question should motivate students to think and come up with arguments for a class discussion. Possible answers are:

A. Mobile applications are an indispensable part of consumers lives and all sectors have to adapt to fit the needs of the consumer. However, companies should only create an application if they are able to design, execute and manage it properly.

B. Mobile applications will become even more important in the future as technology progresses. The key lies in innovation and integration with wearable technology e.g. smartwatches.

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9. Appendices

Appendix 1. In-Depth Interview guidelines

Name interviewer: …………………………………………….

Date: ……./……../…….

Name respondent: …………………………………………….

Respondent title: …………………………………………….

Introduction (3 min)

Hello, my name is Rick van Duursen. I am a student of the Católica University of Lisbon School of Business & Economics. Today, we will conduct a short interview on the topic of mobile applications and its current and future impact. Would you please answer some questions I would like to ask you? The interview will last about 30 minutes. Before we start, I would like you to know that there are no right or wrong answers. May I have your permission to record our interview?

Questions (15-25 min)

1. Why did your company create a mobile application?

2. In general, what are the strengths of a mobile application?

3. In general, what are the weaknesses of a mobile application?

4. What are the critical success factors for a mobile application? In order words, what does a mobile application must have to be successful?

5. How can mobile applications be more effective?

6. What are (your) metrics regarding the mobile application?

7. In your opinion, how will the mobile applications impact the future? Is it going to be increasingly or decreasingly important? Why?

Conclusion (2 min)

Thank you very much for your time and participation. Your input will be of great help in my research. In case of doubt, I would like contact you for further explication or other questions regarding my research.

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Appendix 2. Survey guidelines

[Page 1] [Introduction]

Welcome to this survey. Your input will be of great contribution to my MSc thesis and I am thanking you for your participation in my survey. The questions will address habits and needs of mobile applications. The survey will take approximately 5 minutes of your time and your answers are strictly anonymous and kept confidential.

I strongly encourage you to finish the entire survey.

[Page 2] [Habits]

This first page of questions is related to your habits in relationship to mobile applications.

1. Do you use mobile applications?

- o   Yes
- o   No

2. For what purpose do you use mobile applications? (Multiple answers are possible)

- o   Entertainment
- o   Help in daily tasks
- o   Source of information
- o   Mean of socializing
- o   Purchasing products
- o   Making payments
- o   Other, ……

3. In the past month, how many mobile applications did you download?

- o   1 application
- o   Between 2 and 5 applications
- o   Between 5 and 10 applications
- o   More than 10 applications
- o   None

4. Once you opened an app, how much time do you spend on it on average?

- o Less than 1 minute
- o Between 1 and 2 minutes
- o Between 2 and 5 minutes
- o More than 5 minutes

[Page 3] [Perspective]

The following set of questions addresses the perspectives and needs of mobile applications

5. Please rank the following elements which are according to you important to a successful app? (1= most important, 8= least important)

1. Content
2. Easy to use
3. Integration with other systems (Facebook, Email, etc)
4. Free of charge
5. Size of the app (amount of Megabytes)
6. Possibility to change to own preferences
7. Privacy protection
8. Works properly offline

6. On a scale from 1 to 100, how secure do or would you feel when making a payment via a mobile application?

7. Please indicate your agreement with the following statements below.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Mobile apps will be increasingly important in the future					
I will be using more apps in the future					
I think that all companies should have mobile apps					
Mobile applications are accessories and I can live without them					

[Page 4] [Associations]

For the next two questions, I would like you to imagine a company website and its mobile application. Then, I would like to ask you to indicate which characteristics are more associated with the website or with the mobile application.

8. Please indicate which characteristics you associate with <u>mobile applications</u>

Mobile applications						
Maintenance expensive	○	○	○	○	○	**Maintenance inexpensive**
Frequent consumer usage	○	○	○	○	○	**Infrequent consumer usage**
High amount of information	○	○	○	○	○	**Low amount of information**
Easy to use	○	○	○	○	○	**Difficult to use**
Works online	○	○	○	○	○	**Works offline**

9. Please indicate which characteristics you associate with <u>websites</u>

Websites						
Maintenance expensive	○	○	○	○	○	**Maintenance inexpensive**
Frequent consumer usage	○	○	○	○	○	**Infrequent consumer usage**
High amount of information	○	○	○	○	○	**Low amount of information**
Easy to use	○	○	○	○	○	**Difficult to use**
Works online	○	○	○	○	○	**Works offline**

[Page 5] [Demographics]

Please tell about yourself.

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10. What is your gender?

- o Male
- o Female

11. What is your age?

- o Less than 18 years
- o [19-25 years]
- o [26-40 years]
- o [41-55 years]
- o Over 56 years

12. Please describe your occupation

- o Student
- o Employed
- o Retired
- o None of the above

[Page 6] [Final]

Thank you very much for your participation in this survey! If you have any questions or comments regarding this survey, please feel free to send an email to rick_duursen@hotmail.com

Appendix 3. Interview transcripts

List of interviewees					
Date	25-02-2016	26-02-2016	29-02-2016	29-02-2016	01-03-2016
Name	Miguel Figueiredo	Joana Santos Silva	David Vieira	Nuno Rodrigues	Francisco Alves Viana
Position	Co-owner	Program coordinator – Digital marketing	Manager information systems & technologies	Digital & multichannel manager	Product marketing manager – Local apps
Company	ExcentricGrey	Católica-Lisbon SBE	Luz Saúde	ROCHE pharmaceuticals	Vodafone Portugal
Sector	Marketing services	Education	Healthcare	Pharmaceutics	Telecommunications

1. Why did your company create a mobile application?

Miguel: we create mobile applications on requests from or proposals to businesses to improve consumer experience and services and simplify the relation between the consumer and company. Development of own applications was purely driven by monetization. The mobile application helps the build the consumer-brand relationship rather than creating brand awareness. However, the enthusiasm for mobile applications from a business perspective is declining. It was a certain trend/hype that everyone had one.

Joana: it was designed as an educational application as part of the Digital Marketing program at Católica-Lisbon SBE. As the programs' positioning entails innovation, the idea was to work on a paper-free base and therefore the app was created. The app was created in such a way it was able to function for any given executive program at the university. It also aids the efficiency of internal services.

David: the mobile applications are a trend regardless of the industry. The presence on the mobile market is an opportunity to reach out to new clients. The impact of the internet of things is huge and requires business to the address the needs of consumers. Consumers are asking for a better relationship with the company/brand. We developed the app for our consumers and facilitate internal processes for own employees.

Nuno: in the case of ROCHE pharmaceuticals, we created the app as a tool for our sales reps to build a better relationship with the customers by informing them in a short and visual manner of the drugs. The app is used as a story telling tool to host promotions, an encyclopaedia. In addition, the app was created to save costs and a hub for internal interaction by employees.

Francisco: Vodafone is always trying to differentiate itself from its competitors. In order to do this, we make a significant investment on mobile applications that bring innovation and lead to an increased customer satisfaction, so that it can be recognized as the brand that provides better service level and higher consumer experience.

2. In general, what are the strengths of a mobile application?

Miguel: the strengths of a mobile application in general are continuous presence by the touch of a button, it simplifies procedures both for consumers and internally for companies. It gives access to information on an offline basis as well.

Joana: a mobile application helps with brand engagement through different platforms as it is not used to create brand awareness. A mobile gaming application as form of entertainment is one type and ''benevolent'' apps for direct conversion into monetization. As for utilitarian purposes, the app facilities more dynamic internal services. The mobile application is more aligned with the younger generation and more specific, in alignment with the executive program.

David: the mobility and permanent access are the strengths of an app. It allows an immediate effect by the touch of a button. It enhances consumer engagement and builds the consumer-brand relationship.

Nuno: the app allows the sales force to effectively show the products and promotions in a timely manner. It eliminates the usage of paper and conveys your brand message easier through attractive visuals.

Francisco: One of the greatest strengths of mobile app technology is the flexibility and user experience. Vodafone has a well-diversified portfolio of apps, which can be split into seven categories: customer support; communication; leisure; payments; security; TV; and utilities, this fact show us that this type of interface are able to deliver a very wide range of technology solutions and functionalities. Also native mobile applications are the most effective way to provide a faster user interaction and more functionalities, because usually is more easy for native apps to use all the available mobile phone features and API´s than e.g. a mobile web interface.

3. In general, what are the weaknesses of a mobile application?

Miguel: a mobile application is always in development because of either the system evolves on which it is operating (IOS, Android) or the mobile application needs to be updated. The initial costs of creating an application plus those of maintenance are relatively expense of those for e.g. a website. In addition, the competition for attention is a weakness as well and regularity is key. Entertainment is growing and in contrast service based mobile application will picked more selectively by consumers.

Joana: a mobile application is not suited for brand conversion or creating brand awareness. A difficult challenge is also to manage mass adoption among consumers or in other words finding the tipping point that determines the success of a mobile app. The maintenance costs remain to be a weakness as the application itself evolves alongside the system on which it operates.

David: the privacy protection of the application is one of the main weaknesses in the health care industry. The data of consumers is highly sensitive and remains an issue to be tackled when it comes to using a mobile application.

Nuno: the weaknesses of the mobile application lie in the development process. The process is relatively expensive as it needs to operate on all systems and devices. An weakness is that the mobile applications seldom work offline.

Francisco: One of the main concerns about native mobile apps is about the all process related to the adoption and customer acquisition. Nowadays, it is a very challenging task to make sure that a significant number of users download, install and use a specific app. Thousands of new apps are launched monthly in multiple marketplaces. And for a company like Vodafone it is very important to highlight our app from the other apps. The adoption process for a native mobile app has too many steps, each step brutally decreasing the conversion rates.

4. What are the critical success factors for a mobile application? In order words, what does a mobile application must have to be successful?

Miguel: It needs to be relevant and distinctive to its consumer target group. The perceived value must be equal to its regular use. Regarding priced applications, it is essential that the price asked is equal to the perceived value of the app. The moment of asking/charging your customers for money is the moment of realization.

Joana: a mobile application needs to be interesting and relevant to its target group. Many applications now focus on ''entergagement'' or ''edutainment'' combining the main aspects of engagement and entertainment through interactive teaching methods. You need critical mass as well as the early mass

adaption when it comes to making a successful app. Equally important, you need to maintain the critical mass.

David: the first time an app is used is out of curiosity. Raising curiosity is an important element when it comes to being successful. Thereafter, a good design will serve as an image of your company. In addition, the functionality and relevant content are critical when building an app.

Nuno: critical to building an app is answering the customer needs. The app needs to fit reality and needs to work both offline and online on all platforms and devices. Testing is vital since your customers might end up using the app in a complete different manner than you intended.

Francisco: In order to develop successful apps, Vodafone searches for solutions to solve relevant customer concerns. For that reason, we are always looking for usage cases where the customer can use their mobile phone to help him in some daily basis situation. For instance, during the Vodafone Mexefest festival, we knew that people could take advantage of their phone, by having the poster, schedules, and other content in their phone, using our mobile app, instead of carrying paper.

5. How can mobile applications be more effective?

Miguel: by analysing the usage data of your application, you can adapt it to better fit the needs of your target group.

Joana: by developing mobile application in such a way that allows aggregation of channels. The mobile apps should work on all platforms and will need to work on an Omni channel base. Mobile applications should also function as well offline as they function online.

David: the application will serve as vehicle for consumers to the offline or online store of a company. The mobile applications can be more effective by being properly integrated with wearable technology device.

Nuno: apps can more effective by creating more interactivity with the consumers. Virtual reality will become an important factor in the mobile applications industry. Also, aggregating multiple dimensions of different apps into a single app will allow apps to become more effective.

Francisco: First of all, it is important make sure that before we start thinking develop an new app, we need to have well identified the scope and purpose for this development. Application that want to deliver too many different features usually have less success. People look at their mobile apps like a different phone functionalities. On the other hand, to increase the effectiveness of mobile apps it is crucial to invest and use the best analytics tools and apply all the learnings of these tools in direct actions that can improve the user experience, or improve the promotion strategy. For Vodafone, we

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use different tools to manage our applications portfolio. Most of them are developed exclusively for Vodafone but sometimes we complement this tools with other ones available on the market, like Mixpanel, Facebook Analytics, Google Analytics.

6. What are (your) metrics regarding the mobile application?

Miguel: The most common metrics regarding mobile applications are number of downloads, number of activations, number of registrations, how many uninstalls and the time elapsed between installing and uninstalling implying the retention or churn rate. To analyse the usage data, you look at usage per section, the overall navigation/usage flow through the app and times you use the app plus average time used e.g. per day/week/month.

Joana: in my case, we measured the performance by participant satisfaction as it was not public nor commercial application. As for the masses, common metrics are the number of downloads, average time spent per user per day/week.

David: we are still in the process of developing the app but the metrics would concern data such as the download, install and adaption usage.

Nuno: the number of times downloaded, installed and uninstalled the app are the most common KPI's of an app. In addition, behavioural data such as the flow of use and interaction with app is key to evaluate the performance and spot mistakes of use.

Francisco: We have multiple different metrics to analyse and manage the lifecycle of our apps, but at the end of day the most important ones, are the active users (people that use the app at least once per month)

7. In your opinion, how will the mobile applications impact the future? Is it going to be increasingly or decreasingly important? Why?

Miguel: Mobile applications will be increasingly important in the future because the internet of things is becoming reality. For instance, more and more development is being made in wearable technology and mobile applications in itself are growing and will continue to grow indisputably. The question is simply on which platform or device we will be using mobile applications.

Joana: the mobile application is part of the ''digital puzzle'' that derives from the current business model created by the fourth industrial revolution. It will become increasingly important as it is still growing even though it is currently in a infancy stage. The phenomena of smartphones and mobile applications is still quite young and with us for only more than a decade now. The penetration of internet and smartphone adaption is still quite low worldwide and there is a lot left to gain access to.

Therefore, businesses should take into account the digital maturity of both their target consumers, individual employees and of the organization as a whole when it comes to creating an app that fits the strategy.

David: the mobile application are somewhat the central piece of everything. The consumer decides how to shape things and traditional sectors are transforming accordingly e.g. Uber and the traditional taxi drivers. It is indisputable that the importance of mobile apps is growing and will continue to grow in the future.

Nuno: the importance of mobile apps will continue to grow and increase in importance in the future. It will become a multichannel to customers. The number of apps is increasing as well and this creates the event where consumers have to be selective in which app is downloaded and actually used.

Francisco: in terms of mobile applications penetration, the market is achieving the point of maturity. Moreover, the point where most of smartphone users are currently using this interface. This metric (number of unique users) will not increase significantly. On the contrary, the same users may use more apps and more often in the next few years.