What is the Role of Mobile Operators in the Mobile Payments Ecosystem? - Work Project

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1. Brief context of the Business Project

1.1. Company overview

Vodafone Portugal started its operations in 1992 and has established an important position in the mobile communications market. Nowadays, its user base is composed of more than 5.5 million clients for mobile communication services, amounting to more than 1/3 of the Portuguese market for mobile services. Currently, Vodafone Portugal's comprises mobile communications services, business mobile communications solutions, **triple play** and **quadruple play** services.[1] For a more detailed company overview please refer to Appendix 1.

1.2. Market overview

The mobile communications industry is often characterized for being very competitive, where players are often forced to have small margins, while offering very complete service packages to the consumer. The Portuguese market is no exception. In fact, with big players such as MEO and NOS (a recent merger between ZON and Optimus), that provide triple and quadruple play services, Vodafone may face a though environment to maintain its position.

1.3. Current client situation

Vodafone's value proposition is mainly focused on providing the customer with the best and most innovative service. In fact, Vodafone's main strategy to retain customers in such a highly competitive market, is to constantly innovate. Since MEO is already entering the **mobile payments** market, Vodafone has felt the need to evaluate the possibility of launching the Vodafone Wallet in Portugal. It is now considering investing in the mobile payments market in Portugal (see Appendix 2 for an overview of the market), as it has already done in other markets (e.g. Spain and Germany) with the launch of the Vodafone Wallet (see Appendix 3 for a description of this product).

1.4. The Business Project challenge

The purpose of the business project was to evaluate the current role of mobile operators in the Portuguese mobile payments ecosystem. Because the evolution of the market trends will impact Vodafone Portugal's approach to this market, the ultimate scope of the business project was to advise Vodafone Portugal on "how to best implement the Vodafone Wallet in Portugal, taking into account all relevant factors that were identified in the mobile payments ecosystem" (Business Project for Vodafone, 2014). A summary of its main conclusions is presented in the next section.

[1] All the expressions in bold are explained in the Glossary on page 20.

1.5. Summary of conclusions

After conducting a thorough analysis (see Appendix 4 for an executive summary), it was concluded that Vodafone should indeed launch its Vodafone Wallet in the Portuguese market for mobile payments. Despite the fact that it may not give an immediate return on investment, there are three main reasons to pursue this strategic move.

The first reason is related to Vodafone being innovation-driven and customer-centric. In fact, innovation can serve to increase customer retention and loyalty, by creating value with innovative service offerings, such as the Vodafone Wallet. This allows the company to differentiate from its competitors, thus increasing switching costs for its existing customers and attracting new ones. In a competitive mobile communications market, such as the Portuguese one, Vodafone's best way to differentiate and retain customers is to compete on value, rather than on margins, which are already very small.

The second reason is related to the initial growth of the Portuguese mobile payments ecosystem, characterized by the increase of smartphones' penetration and players' investment in developing mobile payments. This allows Vodafone to enter in a dynamic market and use established platforms while lowering implementation costs – it can take advantage of the current expansion of the **NFC**-enabled **automatic payment terminal** (APT) network.

The third reason regards the fact that the implementation of the Vodafone Wallet in Portugal will be a medium to long-term investment, which will payback as soon as Vodafone complements the service offerings of the wallet to include pre- and postpayment functions, besides the normal payment functions. In fact, the success of a **mobile wallet** relies on the ability to create value, offering more than just mimicking traditional payment methods.

The overall conclusion, taking into account results of a survey that we conducted, the SWOT analysis and the overall evaluation of the mobile payments ecosystem, resulted in a suggestion for the implementation of the Vodafone Wallet. The strategy for its implementation should start with forming partnerships with key players that rely on micropayments. As these are characterized by small transaction values, consumers would be more willing to try this new payment method, thus learning how to use the mobile wallet and trusting its security. In the second stage, Vodafone should work on relationships with bigger players that rely on loyalty programs to retain customers, such as big retail chains. At this moment, Vodafone would be able to present to these players data on previous success cases and show a growing user base. At the third phase, Vodafone can target smaller merchants, which are usually initially reluctant to change due to implementation costs.

2. Development of the merchants' uptake of the Vodafone Wallet

One of the most important aspects of the mobile payments environment is the need to have an extensive user base as well as a strong uptake on the part of the merchants and other **service providers**. The business project focused on the consumer uptake of the Vodafone Wallet, but it dedicated scant attention to the merchants' uptake. Therefore, this work project will explore the importance of merchants, understand and provide solutions to mitigate the merchants' concerns about mobile payments, and describe how Vodafone can endorse its mobile wallet by promoting its advantages to the merchants.

2.1. Original approach to the development of the merchants' uptake

The merchants and other service providers' uptake was explained in the sections of the business project about 'Partnerships' (page 23, Business Project, 2014) and 'B2B Sales Strategy' (page 25, Business Project, 2014). These sections explained the need to establish partnerships to provide to the consumer a network of APTs prepared for mobile payments.

In the business project approach, we divided the possible partnerships to be established with other parties in three major groups. The first group concerns the partnerships with SIBS, Portuguese banks and Visa. These players are crucial for Vodafone, because it will not process any payments and thus needs to have a trusted player processing payments. The second group includes entities that are dependent on micropayments, merchants that leverage loyalty relations with their clients, utilities companies and Government and companies with seasonal businesses. Finally, the third group includes the third party service providers, usually start-ups that innovate and create new applications.

Regarding the B2B sales strategy, Vodafone should start by approaching the players that rely on micropayments, followed by larger merchants that can benefit from other features of the Vodafone Wallet. The characteristics that Vodafone could market to these players when presenting the Vodafone Wallet are: the possibility to collect data about consumer purchasing habits, to offer new loyalty benefits to its clients, higher safety, speed and simplicity in receiving the payment, and better management of employees' working hours. The B2B sales strategy also included a 3-stage approach to implementing the Vodafone Wallet with service providers: the first stage would be characterized by a pilot experiment; the second stage would involve the expansion of the experiment to a higher number of APTs; the third stage would include the complete independence of both the merchant and the consumer in using the Vodafone Wallet to make mobile payments and explore its full capabilities.

2.2. Limitations of the original approach

The original approach of the business project was more related to the fact that merchants should be on the mobile payments ecosystem – and that Vodafone should partner with them – because, ultimately, they are needed for the end-user to be able to use the mobile wallet and to proceed to pay with his or her smartphone. It was, therefore a consumer-centric approach.

However, this approach lacked the perspective that the mobile payments' uptake in other markets has been a chicken-and-egg problem: on one hand, there is the need to have a significant user base to convince merchants to support mobile payments; on the other hand, it is necessary to have an extensive network of merchants that accept mobile payments and service providers with functions present in the Vodafone Wallet to offer value to consumers. As presented in Vodafone's Mobile Money Webinar (2013), the chicken-and-egg problem consists in customers needing to have points of sale to use the wallet, while merchants will only invest in NFC-enabled APTs when there is a large customer base.

Therefore, it is crucial to understand how Vodafone can incentivize merchants to be present in the Vodafone Wallet. Their presence is indeed crucial because a significant part of Vodafone's revenues could come from customized advertising and data analysis for the merchants. These sources of revenues are fundamental since Vodafone will not process payments, hence it will not receive any commission from the transaction process (see Appendix 5 for a detailed model for revenues streams).

The way to incentivize merchants to adhere to mobile payments and, in particular, to Vodafone Wallet, is to understand their core concerns, mitigate them and promote the advantages that mobile payments and the Vodafone Wallet can potentiate, and how they can add more value than traditional payment methods.

2.3. How can Vodafone increase the merchants' uptake for the Vodafone Wallet?

To be able to capture the upcoming opportunity of the development of the Portuguese market for mobile payments, Vodafone should pay deep consideration to how it can establish relationships with merchants in order to scale up the Vodafone Wallet. To do this, it is crucial that Vodafone mitigates service providers' current concerns, which will be explained next.

Major merchants' concerns and how to address them

Since mobile payments are a fast-growing market, merchants show several apprehensions towards them. Nonetheless, most of these concerns result from low levels of education regarding the technology, which, therefore, can be corrected.

The first and most worrying concern for merchants is security. Deloitte (2013) states that merchants often see mobile payments as potentially increasing payments fraud. Moreover, in case of fraud, merchants may feel unprotected as the mobile payments solutions have often many players (such as the mobile network operator, managing the mobile wallet, and the banks, managing the users' account). In fact, as Visa (2013) mentions, control over fraud management can shift, but liability may not. Hence, it is crucial for the merchant to know how he or she can be impacted. Thus, Vodafone must clearly communicate who is held responsible and whom the merchant should contact in fraudulent situations. It should also educate the merchant on how to reduce the risk of fraud (see guidelines in Appendix 6).

Another concern that prevents merchants' initial uptake of mobile payments is the perception of high implementation and operational costs (e.g. costs of changing the APTs to be compatible with new technology and learning costs). As this is a fast-growing market, many merchants delay the implementation of mobile payments solutions, to see which technology standards prevail. Portuguese banks are starting to change the APTs network to allow for **contactless** payments (replacing by NFC-enabled APTs). Both merchants and Vodafone will benefit from this, as the cost of implementing APTs networks will be borne by the banks.

One of the merchants' major objectives is to find ways to know how the consumer interacts with the brand. This can be easily accomplished with **mobile wallets** as the mobile operator—Vodafone in this case – can share real-time aggregated data regarding the merchant's customers. However, as Accenture (2014) states in its recent report, one of the most worrying shortcomings for merchants is the fact that there is an absence of relevant metrics that allow the companies to measure the effectiveness of mobility initiatives. Moreover, sometimes the merchant does not have the necessary skills to interpret data or to coordinate and execute mobile initiatives. Therefore, Vodafone should offer a package of customized metrics, send this information with some degree of analysis to the merchant, and provide training sessions, so that the merchant's staff knows how to work with mobile payments, how to set customized targeted campaigns, or even analyse customer-related information.

Finally, one last concern relates to the fact that smartphones' penetration and usage is higher among young people and so the mobile payments' consumer uptake will be probably higher for this segment as well, thus discriminating older customers that are not willing to use mobile payments or do not own smartphones. To overcome this apprehension, Vodafone should underline the message that young people are usually the early adopters of new technology and often incentivize others to later join the trend, when results such as

convenience, ease of use, speed and security become evident. Moreover, the merchant should be aware that mobile payments are just another tool to increase the loyalty of the relationship with its customers, and should not be perceived as just another type of payment method, in the sense that it can offer much higher value than traditional payment methods do.

Further incentives to increase merchants' uptake

After addressing the merchants' concerns, Vodafone should promote its Vodafone Wallet's capabilities to add value to the merchants' business. Mobile payments and mobile wallets are indeed very interesting tools for companies to extend their relationships with customers, allowing them to start new sales and marketing channels, to drive revenue through higher customer engagement or to improve customer experience and service delivery (Accenture, 2014). To increase merchants' uptake mobile payments should induce more clicks on the company's website and online store (if existent), lower abandonment rates at checkout, lower fraud and induce higher customer retention.

This section will present below several advantages of mobile payments and mobile wallets' functionalities that should be communicated to merchants in order to increase their uptake of mobile payments. A detailed explanation of the advantages can be found in Appendix 7.

(i) Enhance customer experience

The first important advantage of mobile payments and mobile wallets is that they can seriously enhance customer experience with the merchant. Firstly, they connect the online world with the real world, allowing the customer to receive suggestions or promotions before reaching the store's checkout, and to start its journey in any electronic device (PC, tablet or smartphone) and finishing it in another device or even at the store.

Secondly, it provides an unbeatable high speed at checkout (both online and in-store), as often there is no need to insert a PIN. It also allows for the easy redemption of offers inside stores, as customers can show or scan the coupon or promotion at the cashier or at a machine.

Mobile wallets are also very convenient to acquire and engage customers either through customized offerings, targeted information about the brand and its products or even by providing a simple way to check the store's inventory availability for a product. Merchants will be able to perform a push marketing strategy with the customers' allowance; nevertheless, it is crucial that the marketing is done based on quality rather than on quantity, in order to keep the customer interested and motivated. Moreover, it allows merchants to transform the coupons' mass-market business model to a targeted and more efficient channel.

(ii) Increase in sales

This can be achieved by increasing the basket size by making suggestions and cross-selling and up-selling of related products. Another possibility can be to offer "intelligent" suggestions, based on purchases' past history. Moreover, mobile wallets are very important to help the merchant to be present in the zero moment of truth (see Appendix 8).

(iii) Increase in-store safety

As there is no need to travel to deposit the cash in the bank and there will be less cash in the store itself, the probability of being robbed decreases significantly. Furthermore, Smart Card Alliance (2011) mentions that the transaction authentication process, currently being used in contactless transactions through NFC technology, is more secure than the traditional magnetic stripe technology, existent in debit and credit cards. These are positive points for both merchants and consumers since they are tantamount to a decreased risk of robbery and fraud.

(iv) Increase savings

Mobile payments allow merchants to achieve savings in labour costs, in transaction fees, by reallocating valuable space inside the store, or even by decreasing the costly and sometimes labour-intensive marketing campaigns (e.g. when there is the need to apply sales force or distribute coupons), transforming them into targeted and electronic approaches.

(v) Improve accessibility and flexibility of payments

One of the most interesting propositions of mobile payments is the possibility for both small merchants and large businesses to use it. Small merchants greatly benefit because payment methods, such as debit cards and credit cards, may not be feasible for them, since they would not have a level of transactions that would justify the implementation of debit or credit card APTs. In this case, they end up managing only cash, which can involve higher managing costs than other payment methods. Moreover, mobile wallets allow for having multiple card brands accounts and the ability to purchase in-store and in **eCommerce** settings.

(vi) Perform better data analysis and enhance business outcomes

Merchants can gain access to important data regarding their customers' shopping behaviour and preferences. This can increase the effectiveness of marketing campaigns, allow for quick adjustments on promotions timing, targeting and pricing, build intimacy with customers and improve retention rates, and design better loyalty schemes. By receiving information in real-time, merchants can also better predict demand and minimize the bullwhip effect (i.e. large changes in inventory in response to demand shifts, due to an absence of communication between the retailer and supplier), thus improving operational efficiency and reducing costs.

(vii) Improve coordination with suppliers

With the combination of digital channels and data analytics provided by mobile payments, retailers have the opportunity to leverage the zero moment of truth in the buying process, the point of decision. With mobile payments, they can create a cross-channel promotion platform (Bagahaie, M. & Dempski, K., 2013) and interact directly with customers as soon as they enter the store, or when they shop online or via their smartphones. In this manner, merchants receive important information that can be extended to suppliers.

This data-sharing platform would allow suppliers to access frequent-shopper data and give them the possibility to target the customer in real-time, by having a set of predetermined promotional campaigns that could be activated by the presence in the store of a customer belonging to a specific target group. The supplier could in fact set automatic decision protocols to target certain channels and customer segments. This would be a win-win situation for both parties, since the supplier would be able to measure effectiveness and act almost immediately at the point of sale, and the merchant could increase its revenue streams (by providing this information and allowing the supplier to act on its store) and also reduce the bullwhip effect, reducing the number of stock-outs and the time between replenishments.

The aforementioned advantages show that mobile commerce could drive customers back into stores, decrease their abandonment rates online and promote customer loyalty and retention. However, it is of utmost importance that the merchant does not perceive mobile payments as just another payment method that mimics the traditional ones while using a smartphone. Hence, Vodafone should incentivize merchants to engage with the Vodafone Wallet by addressing their concerns and explaining its advantages, showing them that mobile payments and the Vodafone Wallet can offer a much more integrated experience than any other payment method. And, in case that Vodafone establishes partnerships with SIBS and Portuguese banks, all the players must be coordinated in order to promote the best possible experience both to the consumer and the merchant.

The chicken-and-egg problem can only be solved if both sides grow together. Hence, Vodafone must always focus on promoting its Vodafone Wallet to users and, at the same time, incentivize merchants and other entities (such as Government and utilities companies) to be service providers in the Vodafone Wallet or to accept mobile payments in their stores.

3. Reflection on learning

3.1. Previous knowledge learned from the Masters program

Regarding the content of the business project, the most relevant tools that were applied came from strategic-related courses, such as the Strategy mandatory course and the Corporate Strategy elective course, as well as marketing-related courses, like Marketing Planning, Sales Force Management & Retail or Distribution Channels. The strategic courses gave me the tools to understand which strategic move Vodafone should pursue to enter in the mobile payments market. The marketing courses allowed me to define the target market, choose important service offerings, promotion plan and define the B2B sales strategy. Other courses such as Project Management and Global Management Practices gave me tools – such as project scope definition or global ethics for business environment – to be able to work effectively in a team with people from very different personal and academic backgrounds.

3.2. New knowledge applied in the Business Project

These courses gave me knowledge and instruments that I applied for the first time in the business project. The scenario planning analysis (Business Project, page 4, 2014), a tool learned at the Strategy course, allowed us to infer the probable stages that the Portuguese mobile payments market will pass through in the upcoming years. The Sales Force Management & Retailing course allowed me to work with concepts such as the zero moment of truth (see Appendix 8) and to define appropriate partnerships and business relationships for Vodafone to establish with other entities.

Since the business project was developed in approximately four months, there was the need to carefully organize the several stages of the project and to implement some project management techniques. One of most effective tools to control our project development and resource allocation was the Gantt Chart, presented in Appendix 9. Moreover, in order to have all the group members held responsible for organizing the teamwork, we decided to establish a rotation for team leadership each two weeks. This allowed for every member to have the chance to experience leadership responsibilities, which will be needed in our future careers.

3.3. Personal experience

3.3.1. Key strengths and weaknesses

During the development of the business project I developed several skills and became aware of both strengths and weaknesses. One of the strengths that I realized is my ability to easily relate with very different colleagues and the ability to have a global mindset. The CEMS Master in International Management helped me to develop this skill, which I believe to be of

utmost importance in the current days, as there is the constant need to practice global business with very different people and in very different backgrounds. Another strength that I identified during the development of the business project were my project management skills. Even though we rotated the project leadership each two weeks, I noticed that I easily helped my colleagues structuring work, managing time and prioritizing.

As weakness I detected that sometimes I have trouble in remaining calm under stress. Although I do not show my anxiety to others, I feel much more pressured and tired, which can affect my performance at a presentation, for example. Furthermore, with the business project I also detected that I have some difficulty in delegating when there is an obstacle or a more difficult subject to work on. This gives me more workload and probably shows to my colleagues some unwillingness from my side to share problems with them.

3.3.2. Plan to develop areas of improvement

To decrease my anxiety under complex situations, I should consider possible risks and obstacles to the project beforehand, in order to be better prepared to tackle them if they occur. In order to delegate more, the team should structure the work and establish objectives and I should understand that my colleagues are able to do the work properly.

3.4. Benefit of hindsight: What added most value? What should have been done differently?

Having delivered the business project, it is possible to infer some situations that could have been tackled differently. I believe that we should have had more meetings with the business advisor and made an intermediate presentation to Vodafone. This would have allowed us to confirm that our approach was aligned with the objective of the client, and to establish more confidence and build a stronger relationship. Additionally, it would have been important to establish clear objectives for our project from the beginning and to underline the need for the client to cooperate and support the project, by providing the team with necessary information to achieve the proposed outcomes.

Despite some drawbacks, I believe that the business project deeply benefited from having team elements from different backgrounds and cultures. This enabled different approaches towards the same problem, dynamic discussions and even an extensive research, as each one of us was able to research the mobile payments market in its own country. Another important aspect that potentiated the success of the business project was the fact that all the team members worked equally and supported each other, thus creating a very nice working environment, which led all of us to be more productive.

Appendix 1: Vodafone Portugal Overview

Vodafone Portugal

- In Portugal since 1992
- Mobile market client base of 5.5 million
- International presence through the Vodafone Group, which is present in over 40 countries.

Vodafone Group owns 100% of Vodafone Portugal, thus enabling Vodafone Portugal to have access to an extensive international network.	Services provided: • Mobile communications • Triple play services • Quadruple play services • Business solutions • Smartphone Apps
Vodafone is currently investing heavily in Portugal to have one of the best optic fiber networks in Europe (investing €500 million until 2016) and in the 4G mobile connection network.	In the last year, the mobile network operator lost 523.000 clients in mobile services. It is now facing severe competition from two big triple and quadruple play competitors: MEO and NOS (previously ZON and Optimus).

Adapted from Lusa (2014).

Appendix 2: Mobile Payments Portuguese Market Overview

The mobile payments market is in an initial phase in Portugal. The Portuguese population heavily relies on SIBS payment processing system and on its Multibanco network. Despite the fact that smartphone penetration has been growing in the last years (40.9% in February 2014, Marktest) the mobile payments market is still under development, without a standard technology having yet emerged, low cooperation between players, small user base and low acceptance by merchants. Nevertheless, some players are investing in this market since they believe that it will grow in a near future. SIBS and banks are starting to enlarge the networks of contactless automatic payment terminals (APT) and creating mobile apps for processing payments and mobile wallets. Mobile operators are also starting to enter into this race, with MEO recently launching its MEO Wallet.

Appendix 3: Vodafone Wallet Description

The Vodafone Wallet is a mobile wallet with which the user can make payments, store cards – such as ID card, driver's license, debit card, credit card, loyalty scheme card or even a door access card – and actively communicate with the service provider inside the wallet, which can be a bank, a retailer, the Government or any other entity that provides services to consumers.

Vodafone does not process the payment transaction. This is the banks or payment processors (like SIBS in Portugal) responsibility. The mobile network operators' role is to manage the app and to store the data in the secure element, the SIM card. Vodafone Wallet connects with automatic payment terminals via **Near Field Communication** (NFC) technology.

The Vodafone Wallet allows merchants to promote products, offer coupons and promotions and communicate with their customers in a customized and targeted way.

Vodafone was already implemented its Vodafone Wallet in Spain, Germany, the Netherlands and Italy, and is preparing to launch it in the United Kingdom.

Adapted from Vodafone Spain (2014).

Appendix 4: Business Project Executive Summary

The challenge of the business project was to evaluate the mobile network operators' role in the mobile payment ecosystem (particularly in the Portuguese market) and to understand if Vodafone should follow its recent strategy of implementing the Vodafone Wallet – as in Spain, the Netherlands, Italy and Germany – or if it should consider another strategy.

The answer to this challenge involved several steps. Firstly, we researched the mobile payments ecosystem, in which we performed an international benchmark analysis – alongside with scenario planning –, a technology overview, a competitors overview for the Portuguese market and a survey (with a sample of 150 respondents) to evaluate the Portuguese market current situation and needs. The second section entailed an analysis of the implementation of the Vodafone Wallet in Spain and a SWOT analysis of a possible implementation in Portugal. The third section involved the explanation of the implementation of the Vodafone Wallet in Portugal and includes the target market definition, the description of the possible service offerings, the marketing strategy, the possible partnerships, the B2B sales strategy and the revenues streams and costs evaluation. In the final section, the fourth, we presented our final recommendation of implementing the Vodafone Wallet, bearing in mind the overall analysis of the situation of the mobile payments ecosystem in Portugal.

The international benchmark analysis showed that cooperation is fundamental for any player to achieve success. As the mobile payments market involves several players with important functions, they should cooperate in order to offer to the customer and the merchant the best possible outcomes. Otherwise, there will not be any uptake for this payment method. Regarding the technological overview, it was verified that despite the differences in Near Field Communication (NFC) and **Bluetooth low energy** (BLE) technology standards, they are more complementary rather than substitutes, as they allow for different service offerings that complement each other. Nevertheless, the **host card emulation** (HCE) technology may pose a significant threat to mobile operators as it decreases their relevance in the mobile payments ecosystem. The Portuguese competition environment seems to be little cooperative, with each player working on its own solution. The survey conducted for the purpose of the business project showed that Portuguese consumers deeply trust SIBS and Portuguese banks to process payments; it further showed strong consumer concern for security and data privacy.

In the second section of the business project, the SWOT analysis showed Vodafone Wallet's weaknesses as well as strengths, threats and opportunities. After this analysis we designed strategies to mitigate the threats by leveraging on strengths and opportunities.

The results of the survey allowed us to infer that Vodafone should first target people from 15 to 35 years old, because the respondents in this age bracket are more open to experiment and to adopt mobile payments and mobile wallet functionalities through their smartphone.

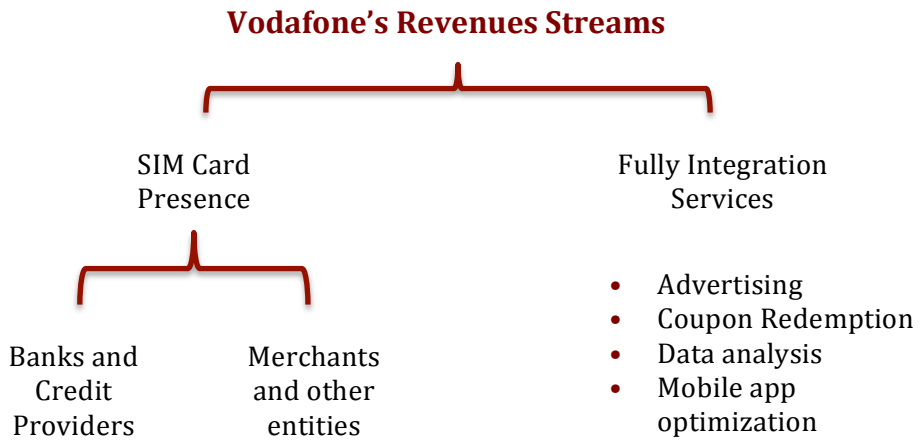
When promoting the Vodafone Wallet service to consumers, Vodafone's strategy should focus on ensuring security and data privacy (as the survey results showed that these topics were the biggest concerns of the survey sample). At the same time, it should leverage the main characteristics that distinguish mobile payments from conventional payment methods: higher convenience, ease of use and speed.

Regarding service offerings, resulting from our analysis of the survey, we concluded that Vodafone Wallet would have higher usage if it would offer a broad range of services that include prepayment, payment and postpayment stages of the consumer shopping experience. This also enables Vodafone to broaden its revenues streams by collecting revenues from advertising, promotion and customer data analysis tools provided to the merchants at a fee.

Hence, even though consumers are fundamental to scale up the Vodafone Wallet, it is necessary for Vodafone to partner with financial providers, merchants, government bodies, utility companies and third-party developers in order to offer the best possible service to the consumer. Therefore, for the B2B sales strategy (i.e. to recruit service providers to be present in the Vodafone Wallet by offering their loyalty cards or special apps) we considered that Vodafone should first target merchants that rely on micropayments, followed by big retailers that invest in loyalty schemes. In this second stage, Vodafone would have already some data to show to these big merchants. Small merchants should be targeted at last because they are often not able to incur in implementation costs of the necessary technology and they are very reluctant to change as proposition may not offer as much value as the costs they incur in.

As a final recommendation we suggested to Vodafone to pursue the strategy of implementing the Vodafone Wallet in the Portuguese market. Firstly, Vodafone wants to be perceived as an innovative organization by consumers, providing unique solutions and extensive service offerings in comparison to its competitors. Secondly, although the Portuguese market has not yet attained any significant momentum, trends demonstrate that mobile wallet usage will likely increase severely in the nearby future. Finally, the increase in usage will encourage more service providers to participate in the wallet, thus driving revenues for Vodafone in the long run.

Appendix 5: Revenues Streams



Vodafone Wallet can provide different revenues streams to Vodafone. The direct revenue source will come from the fee that each service provider (bank, credit providers, merchants and other entities) will pay for being present in the mobile wallet and for storing data on the SIM card secure element.

The interesting and valuable business opportunity comes from the possible revenue streams to be implemented when a full integration of services is enabled. Here, Vodafone can receive a commission on the advertising the merchants do and on coupons redemption. Moreover, it can sell aggregated data on customer shopping experience to the merchants and provide mobile app optimization services for merchants and entities that do not have the necessary in-house human or capital resources to design the app to be present in the wallet.

Appendix 6: Guidelines for merchants on fraud prevention

- Mobile eCommerce merchants should verify the identity of the consumer and the device – to know if the device belongs to the user or not – in order to mitigate fraud through identity theft.
- The mobile wallet should have strong authentication, such as fingerprint authentication (as the one present in iPhone 5S and Samsung Galaxy S5).
- Merchants should maintain communications with financial institutions, mobile network operators and even other mobile merchants in order to understand the development of fraud threats and try to prevent them by creating solutions.

Adapted from Brooks (2014).

Appendix 7: Advantages of Mobile Payments and Mobile Wallets

Enhance Customer Experience	
Build an engaging customer experience both online and in the real world	• Help customers in all the phases before checkout (e.g. meal planning, shopping lists, loyalty program, product and price comparison, coupons and promotions, navigation through the store) Deloitte, 2013. • Get real-time information about the brand and products. • Customer can have a rewards balance on the mobile wallet, showing the loyalty points, special promotions and others.
Fast check-out	• In-store: Customers can have a specific mobile payments checkout line. This will be faster as many times there is no need to introduce any PIN. • Online: Google states that usually mobile shoppers need to "fill out up to 25 fields for checkout", making 97% of them to abandon their shopping carts (Google Wallet, 2014). • This is especially important during seasonal periods, like Christmas, and gives the customer an option to choose a faster and better customer service.
Easy distribution and redemption of offers	• Coupons and promotions can be targeted to specific segments. • Coupons redemption is easier and can be done by showing the smartphone or scanning the offer in a machine inside the store.
Push marketing	• Merchants can get the allowance to use push marketing if the customer accepts receiving messages about promotions, coupons or new products.
Increase in sales	
Increase the basket size	• Cross-selling and up-selling related products. • Present "intelligent offers": based on purchase history the merchant can know the age of the product that the consumer bought some time ago and can recommend buying a new one.
Safety	
Lower probably of being robbed	• The cash amount stored in the store will be lower as more users purchase goods via mobile payments or debit and credit cards, thus reducing cash circulation. • If all the payments are performed via mobile payments there is no need to take cash to the bank.
Lower risk of fraud	• "The card and transaction authentication process used in contactless transactions leverages dynamic cryptogram technology which is significantly more secure than current magnetic stripe technology, reducing fraud". (Smart Card Alliance, 2011)

Savings	
Labour savings	• Reduce the number of cashiers and checkout lines. • Reallocate staff to other activities, such as customer support or inventory replenishment.
Lower transaction fees	• "Transforming the checkout process may create an opportunity to introduce new forms of electronic payment - helping to reduce the big bite that credit cards companies take". (Deloitte, 2013)
Reallocation of valuable store space	• Allow customer to pay at several points in the store (in the case of very large stores, such as hypermarkets). • Introduce new product isles on the removed checkout lines space.
Lower costs of marketing campaigns	• Decreasing the costly and sometimes labour-intensive marketing campaigns (when there is the need to apply sales force or distribute coupons), transforming it to a targeted and electronic approach.
Accessibility	
Mobile payments can be used by both small and large businesses	• Mobile payments acceptance opens up electronic payments to a segment of merchants who do not experience the level of transaction volumes that justify signing up as a traditional acceptance location. (Mobile Payments Today, 2011)
Multiple payment methods and card brand accounts	• Ability to store multiple cards in the mobile wallet and to pay via NFC-enabled terminals, QR-code, or WiFi.
Ability to make purchases in-store and online (eCommerce) and from any device	• Mobile payments can allow for full integration of devices and customer experience.
Data analysis	
Real-time data	• Merchant can analyse the effectiveness of the marketing campaign with greater detail and in real time. • Gain insights about customer preferences and shopping behaviour. • Design more aligned marketing campaigns, specifying target, duration and offers according to previous information.
Possible uses for the analysed data:	• Create a more convenient customer experience. • Match relevant products to the needs of the customer. • Predict demand ahead of time. • Analyse local markets and answer their specific needs. • Improve level of customer service. • Understand who are the customers, what they need, when they need it, and how much are willing to pay.
Coordination with suppliers	
Cross-channel promotion platform	• Receive data in real time about sales and provide it to suppliers, both to lower time between product replenishment and to reduce stock-outs, and also to let the supplier improve marketing campaigns and product characteristics.

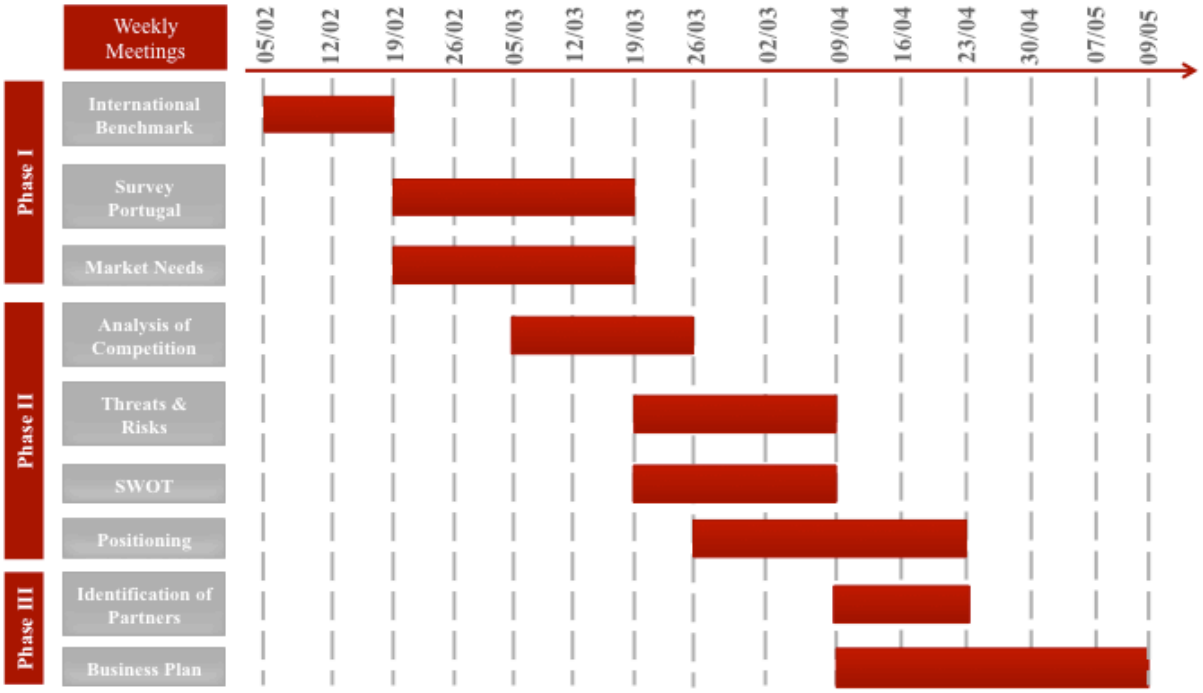
Appendix 8: Zero Moment of Truth and Mobile Wallets

Nowadays a great percentage of the population has access to any electronic device, being a computer, a smartphone or a tablet. And everyone is now searching for products and services to learn more about them before actually buying them. This is the Zero Moment of Truth (ZMOT): the online search about a product for reviews, characteristics and price comparison.

The consumer can now do this research even inside the store through its smartphone. Here is where the mobile wallets' role initiates. Mobile wallets can seriously enhance the merchants' ability to be present at any research the consumer does, both at inside and outside the store. As the consumer gives the merchant the allowance to "occupy" its mobile wallet, the merchant can send all types of information regarding the product, premium offers, promotions, coupons or even regarding events.

Image Retrieved from: http://www.thinkwithgoogle.com/collections/zero-moment-truth.html

Appendix 9: Gantt Chart for the Business Project



Gantt Chart for the Business Project for Vodafone (2014).

Glossary

Automatic Payment Terminal (APT): electronic device that merchants hold to allow for payments with credit or debit cards from different banks and financial institutions.

Bluetooth Low Energy (BLE): is a wireless communication protocol that commands BLE Beacons, which are Bluetooth wireless transmitters. An electronic device with BLE technology can communicate with Beacons in proximity through Bluetooth.

Contactless cards: cards with a NFC-enabled chip which allows to communicate with another device in close proximity. They can be debit or credit cards but also cards to open rooms.

eCommerce: also called electronic commerce, entails all trading conducted through computer networks such as the Internet.

Host Card Emulation (HCE): this is an upgrade of the NFC technology and it allows to perform NFC-based transactions without the need to save information in a secure element like the SIM card. The information is secured in a cloud service.

mCommerce: also called mobile commerce, regards all the trading conducted through a mobile phone.

Mobile payments: payments that are performed through the mobile phone or smartphone. Different technologies can be used for mobile payments, such as QR-codes, NFC, BLE, HCE or even SMS.

Mobile Wallet: an application stored in the smartphone that allows the user to perform payments, hold different cards (ID card, driver's license, debit and credit cards, loyalty client cards) and to receive targeted promotions and coupons.

Near Field Communication (NFC): is a short-range high frequency wireless communication technology that supports one-to-one communication between two NFC-enabled devices. Data needs to be secured on a secure element such as a SIM card or an appropriate chip. It is used in contactless cards, smartphones and passive radio frequency identification devices.

Point of Sale (POS): the place where a retail transaction is completed and the customer performs the payment in exchange for the product.

Quadruple Play Service: combination of broadband Internet connection, fixed phone line, TV and mobile communications.

Service providers: the entities that have cards or functions inside the mobile wallet.

Triple Play Service: combination of broadband Internet connection, fixed phone line and TV.

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