



Department of General Management

Subject: International Trade and Commercial Policies

The new online payment landscape
An Analysis of the Italian e-wallet market

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Introduction

The following paper has the intent of analyzing the e-commerce landscape under a specific perspective, that of the online payment methods. The attention has been centered on the most innovative forms of online payments, those who have most captured the attention of international prints and industry's experts. Among these, the paper focus on one particular form of online payment: the "e-wallet".

The decision to concentrate the analysis on this specific instrument, as explained before, partially derive from the high interest that papers, prints and experts have demonstrated in the last years. In my opinion this is a consequence of a combination of factors. First of all "e-wallet" is still at a development phase, carrying whit it all the uncertainties and curiosity of an innovative product. Moreover, many e-commerce giants have already moved steps in this direction, developing their own "e-wallet", investing money, time and effort in this industry. We can now understand how the argument has captured the attention of many academics and experts.

The other motivation behind the decision of the topic, derive from a six months working experience matured in MasterCard's Rome office. Here, i personally had the chance to participate to the commercial launch of MasterCard's e-wallet: MasterPass. The latter has been launched in the Italian market in the first quarter of 2014. This experience gave me the inspiration to analyze more in depth the motivation underneath a such important decision: the launch of an "e-wallet" on a critical market as the Italian one. The focus of the paper is then intentionally shifted in the last two chapters of the paper, where the MasterPass case study is addressed both on the issuing side (analyzing the wallet owner point of view) and on the acquiring side, looking more closely at the online merchants dynamics and strategies.

In order to perform such analysis and being able to comprehend the investment strategies of an "e-wallet issuer" as MasterCard, a preparatory analysis was necessary. First of all, it has been fundamental to understand the trends, state of development and future perspectives of the e-commerce industry. The first part of the first chapter analyzes in depth the different forms of e-commerce, the history of its

development and the impact that this industry has on the economy under a macroeconomic perspective. The second part of the chapter is mainly focused on the trend and development of e-commerce in the different part of the world. From this comparative analysis it has emerged how e-commerce is among the highest growing industry all over the world, showing double digits growth rates in almost every geographic area studied in the chapter. From the analysis it emerges how great the potential of ecommerce is and how its worth in the world GDP is increasing year after year. Notwithstanding the positive global trend just reported, who can be considered the common denominator among the different region of the world, the study has revealed how still a great disparity exists among the latter. The chapter ends with a focus on the European continent and in particular on the Italian market, who will be considered in the central chapters of the paper. Europe mirrors the global heterogeneities just reported since it is divided in two speed of velocity. In fact a net gap exists among the most mature markets represented by the North, West and Central Europe and the least mature represented by the South and East Europe. To the Southern European group belongs also Italy, who in line with the positive European e-commerce trend has registered a double digit growth rate in the last years with the only exception of 2013. The paper reflects on the causes of the slow down registered in the last year while on the other side analyzes the phenomena of m-commerce who is having an extraordinary success in Italy.

The second chapter of the paper introduces the electronic payment world, well described by Sumanjeet definition as “ an integral part of e-commerce”¹. The chapter analyzes all the different types of payments methods, starting with the “offline payment methods”, those who have been applied to the e-commerce world despite they have always belonged to the traditional commerce. The latter category includes any instrument that has been used and it is still used in traditional commerce as it is the case of Cash-on-Delivery. The second part of the chapter deals with EPS - electronic payment system, a whole world of electronic transactions conceived and born to serve the electronic world. In this section the major forms of e-payments are

¹ S.Sumanjeet, 2009, *Emergence of Payment systems in the age of electronic commerce: the state of art*, Asia Pacific Journal of Finance and Banking Research Vol. 3 No. 3, University of Delhi, India, p.18, available at: <http://globip.com/articles/asiapacific-vol3-article2.pdf>

introduced, analyzing for any of them their specific characteristics, pros and cons. The first on the list is surely one of the oldest and most common payment system worldwide: Credit/Debit cards. The second category analyzed is another common payment method: the EFT or Electronic Fund Transfer. The paragraph introduces the technology employed underneath and reports the case of “MyBank”, the Pan European wire transfer project, who has been launched in 2011.

The following category analyzed is that of promising new payment techniques, specifically conceived for the online commerce. These are respectively known as e-money, smart cards, virtual pre-founded cards and platform payment systems². Even though such forms of payments were conceived specifically for the online world, they still play a limited role in the European e-commerce framework. The paper has focused the analysis on the main obstacles to the success of these payment instruments. It ends with a comparison between these online payment instruments (all recognized by the governing authority) and the last phenomena of Bitcoin, who for many aspects closely reassembles to the latter.

The chapter then faces the brand new phenomena of internet start-ups who start designing their own online currency to purchase on their sites, under the form of Gift Cards. Finally it ends the comparison with the mobile payment service industry. The latter is rapidly evolving, developing different mobile payment method technologies, but it is still very fragmented and at an infancy stage, since local and global technology standards have not been yet defined³. The paper then follows with a closer analysis of each payment instrument included in the category, respectively: the SMS based payment, particularly used in Africa as explained before; the NFC based payment, who is having a huge success worldwide in terms of number of projects launched; the QR code payment, who permits to pay just by scanning a barcode; and

² European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at: http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

³Innopay, 2012, *Mobile Payment 2013 - changing checkout*, p.9, available at: <http://www.innopay.com/>

finally the WAP technology, who consists in paying from an online webpage accessed via mobile.

The last part of the chapter is dedicated to an important topic in the online payment industry: the security concern. In the specific, the study has discovered one of the hardest dilemma in the e-payment field, linked to the security issue. The dilemma consists in finding the right balance in an online payment method between easiness of use and security. The dilemma has been at the heart of many academic debates in the last years, at the point that the new online payment method, “the e-wallet” has been conceived having as reference this dilemma.

In the third chapter of the paper, a focus analysis on the “e-wallet” payment instrument is performed. It starts providing a definition of what is intended with “e-wallet”, clarifying the difference that exists among m-wallet and digital wallet. Then it considers the industry’s experts opinion, divided between those who believe that “e-wallet” represents the future of online payments and those who see in this online instrument just another case of alternative payment method who will never reach the critical mass of success. The chapter analyzes in detail the characteristics, pros, cons and innovative elements of this new form of e-payment. Considering the cases of success, represented by those “e-wallet” who are distributed by the giants of global e-commerce, the paper makes some consideration on the critical factors of success, trying to investigate the principal obstacles to the development of “e-wallets”.

The second part of the chapter deals with the MasterPass case study, the “e-wallet” developed by MasterCard. First of all, this section of the paper presents the Italian market, the possibilities, trend and opportunities who made MasterCard take the decision to launch its digital wallet in the market. At the light of the market analysis and opportunity assessment, it then presents MasterPass value proposition, its future characteristics and the way this product has been adapted to the following market. Finally, the paper compares the MasterCard wallet with the other offers in the market, its competitors and all the actors of the just started “Wallet War”.

In conclusion, the last chapter deals with the acceptance side. The paper analyzes the importance that the acceptance network plays in the success of an online payment

method. The analysis is always performed in line with the case study proposed in chapter three, considering the acceptance strategy developed by MasterCard for the Italian market. A quick overview of the main players in the Italian acceptance landscape is then followed by an analysis of the Italian acceptance industry's trends and level of concentration.

Finally the last paragraph is dedicated to the study of MasterPass' acceptance network, who has been built by MasterCard to sustain its commercial launch. The paper tries to spot and comprehend what are the logic underneath the "construction" of an acceptance network, and what are the main difficulties to overcome.

Chapter 1: Introducing e-commerce. A comparative analysis of the development of e-commerce in Italy against the rest of the World

1.1. Introducing e-commerce. How the world has changed

1.1.1. An e-commerce definition

Electronic commerce commonly known as e-commerce is a type of Industry that consists in the process of trading across the Internet. A buyer visiting a seller's website and concluding its visit with a purchase finalized through a transaction, can be considered the simplest form of e-commerce. The broadest definition of e-commerce includes any type of deal where Internet plays some role. According to this definition, even the comparison of different products with the finalization of the purchase in a store, can be considered e-commerce⁴.

There are several ways to consider the e-commerce phenomena, according to the prospective of analysis used. The risk in such cases is to have a so broad perspective to lose the real meaning of the concept. According to a communication perspective, the e-commerce consists in the diffusion and exchange of information on industries and organizations' activities using telephone lines or networks of computers or any other electronic device. But e-commerce can also be the ensemble of instruments that the companies employ to enhance their relations with their customers or more, under a company perspective, it can be the simplification of the company internal processes due to the application of new technologies to the company's operative cycles. Concluding, e-commerce can be anything nowadays⁵.

However to serve the purpose of this analysis, a much clearer definition of e-commerce should be reported. According to the European Commission, who was among the first to face the concept, " The electronic commerce, based on the electronic processing and transmission of data, encompasses many different activities

⁴ Twin Isles Research, 2007, *E-Commerce: Origins, Evolution and Implications*, Retrieved November 14, available at: <http://www.twinisles.com/dev/research/report/c2.htm>

⁵ P. Cellini, 2012, *Internet Economics – L'industria e i mercati della rete*, Rome, Luiss University Press, p. 231

including electronic trading of goods and services, on-line delivery of digital content, electronic funds transfers, electronic share trading, public procurement, and so on”⁶. Kotler simplify even more the concept, referring to e-commerce as any process of buy & sell through electronic devices⁷.

1.1.2. The different forms of e-commerce

After having decided the perspective of analysis that this research will approach, we define better the different types of e-commerce, going through the different typologies of trade concluded via electronic devices. Depending on the actors of the transaction, many different types of forms of e-commerce take place. The last part of this section will address the most common types of e-commerce, which are respectively:

- E-commerce business to business (B2B)
- E-commerce business to consumer (B2C)
- E-commerce business to employee (B2E)
- E-commerce business to administration (B2A)
- E-commerce consumer to business (C2B)
- E-commerce consumer to consumer (C2C)
- E-commerce peer-to-peer (P2P)

In the business to business e-commerce the transaction does not involve the end customer but it's fully conducted between a limited number of companies or business actors. This type of trade is usually characterized by high amounts and the offline management of the transfer of funds⁸.

⁶ Commission communication, COM(97)157 of 18 April 1997, *A European Initiative in the sector of Electronic Commerce*, available at:

http://europa.eu/legislation_summaries/information_society/other_policies/l32101_en.htm

⁷ P. Cellini, 2012, *Internet Economics – L'industria e i mercati della rete*, Rome, Luiss University Press, p. 232

⁸ P. Cellini, 2012, *Internet Economics – L'industria e i mercati della rete*, Rome, Luiss University Press, p. 233

The B2B world has been completely transformed by the e-commerce revolution. In fact business to business e-commerce represents a huge shift in the way firms are interacting with their buyers and suppliers⁹. The way of doing business has completely changed thanks to e-commerce: both for multinational companies and for small enterprises. Two principal forms of business to business commerce can be identified: the inter-organizational systems and the e-markets¹⁰.

The first refers both to the e-procurement and to the e-distribution. The e-procurement consists in the ensemble of technologies, procedures and organizational operations that permits the exchange of goods and services between companies while e-distribution refers to all the applications that facilitate every aspect of the distribution chain, from the management of the inventory, to the orders and the after sales services¹¹. The implications of e-commerce in both cases can be seen in the changed relation between supplier and client: companies now have access to a huge number of information, they can compare prices and any other aspect and quality of the product or services they need. Most of the times the results are higher quality for lower prices. Moreover, e-commerce has incentivized many companies to skip intermediaries and negotiate directly with the producer. In terms of inter-organizational system, thanks to e-commerce the company collapses cycle time in the fulfillment of business transactions, thanks to reduced distances and eliminate every inefficiency correlated with paper processing, since everything is online and paperless¹².

The other important transformation in the B2B sector is the emergence of e-markets. The e-marketplace is a real or metaphysical place where many information, products, services and payments from different sellers and web sites are conveyed and exchanged. Such e-markets are extremely important since they permit companies to extend the firm's reach (contacting potential buyers that otherwise would have been

⁹ J.A. Senn, *Business to Business E-commerce*, Information Systems Management Spring 2000, Vol. 17, available at Luiss Library 360Link, [Accessed 18 May 2014]

¹⁰ J.A. Senn, *Business to Business E-commerce*, Information Systems Management Spring 2000, Vol. 17, available at Luiss Library 360Link, [Accessed 18 May 2014]

¹¹ P. Cellini, 2012, *Internet Economics – L'industria e i mercati della rete*, Rome, Luiss University Press, p. 234

¹² J.A. Senn, *Business to Business E-commerce*, Information Systems Management Spring 2000, Vol. 17, available at Luiss Library 360Link, [Accessed 18 May 2014]

out of reach for that specific company), to boost services, for example eliminating time windows constraints (online services can be delivered 24h a day) and again permits to bypass traditional channels and intermediaries, reducing so many costs.

The second typology of e-commerce we consider is the B2C one, business to consumer. Without any doubt, this is the most common type of e-commerce since it consists in the direct purchase of goods and services from the end customer. Since the widespread of Internet and personal computer or any other connected device, e-commerce has become the new channel of distribution, convenient easy and fast. It permits companies to skip many intermediaries such as wholesalers and retailers¹³. The implications of this direct selling are many on both sides, the company and the consumer. On one side, the producer can gain higher margins, it has a greater control of the market and finally it can expand its market, enlarging its consumer base. In fact thanks to this efficient direct distribution channel called e-commerce, industries can reach consumers widespread all over the world. Many benefits are also on the consumer side as lower prices and greater choice and variety.

The most known e-shop dealing with B2C commerce is Amazon.com. It was born in 1995 as an on-line book retailer and now with 48.1 million¹⁴ of revenues it has become the giant of the industry spacing on many different fields. The B2C commerce has expanded covering nowadays any type of service such as online banking, travel, health services and many others sectors.

In conclusion, two different type of B2C e-commerce exist, depending on the type of good or service sold: direct and indirect e-commerce. The first one consists in the exchange of immaterial goods or services which do not need a physical delivery, such as software, information, documents, hosting services and many others. The

¹³ P. Cellini, 2012, *Internet Economics – L'industria e i mercati della rete*, Rome, Luiss University Press, p.236

¹⁴ P. Cellini, 2012, *Internet Economics – L'industria e i mercati della rete*, Rome, Luiss University Press, p.246

indirect one instead trades goods or services that need a delivery or a physical consumption¹⁵.

The third type of e-commerce we should deal with, has completely revolutionized the relationship business to employee. Unlike the other two typologies, the B2E e-commerce is wrongly considered an unusual and uncommon type of transaction. This form of e-trade is daily used by the majority of multinational and big companies nowadays. B2E comprehends any type of system and application in charge of managing the operational relations between a company, its employees and its associates. It is the ensemble of tools and methodologies that influence the way any single employee interacts with the company he/she is part of. Its simplest way of expression is the company “portal”, who helps multinational firms to deal with the difficulties of managing a widespread and cultural heterogeneous workforce. Many applications and sectors are involved in such tools, like content management, knowledge management, administrative management software and many others. Through these tools, the employee can increase his capabilities and strengthen his knowledge, plan his career perspective or again plan its holidays and modify its benefits and reward program. If correctly used, such tools have many implication for the company. The main benefit consists in the retention and empowerment at the same time of the most qualified employees and a great saving in terms of time and costs of workforce management¹⁶.

Many companies are now specialists in the supply of such tools and applications offering solutions for an efficient human capital and talent management or rewards and payroll services. A successful example is ADP, the most famous worldwide supplier of such services, leader in the sector¹⁷.

¹⁵ P. Cellini, 2012, *Internet Economics – L’industria e i mercati della rete*, Rome, Luiss University Press, p.246

¹⁶ P. Cellini, 2012, *Internet Economics – L’industria e i mercati della rete*, Rome, Luiss University Press, p 235

¹⁷ ADP website, available at: <http://www.adp.com/solutions/services/human-capital-management.aspx>, [Accessed 24 May 2014]

We should then consider another type of interaction, the one between Public Administration and Industries. This is formalized in the typology e-commerce business to administration (B2A) which involves any type of electronic interaction among these two actors such as payment fees, request of information, participation to public procurements and public contests¹⁸.

In conclusion we should consider the most innovative forms of e-commerce. Unlike the other forms of transaction, already existing before the advent of Internet, these forms of e-commerce, specifically C2B, C2C and P2P, can be considered “internet-specific”. It means that before the arrival of e-commerce, these types of transactions were very rare, in some cases impossible since they need the support of a bidirectional media as Internet.

The e-commerce consumer to business (C2B) represents the reverse of the traditional model of trade, in which companies sale goods or services to the end customers. Indeed in this case the opposite is true, since consumers settle the price they are willing to pay and the companies can just refuse or accept the offer¹⁹. Google Adsense and other type of membership and monitoring platform such as Commission Junctions, are just some of the examples of this reverse business model. In the case of Commission Junctions, a website owner (the consumer part of the transaction) can offer some space in its website for advertising, deciding the perfect position in the site or the number of characters of the text²⁰. He can also decide the type of advertising, aligning it to the content of its website. Then, many advertisers (the business actor of the transaction) will launch their offer for the banner or advertising space, participating at a real time auction. The users will be rewarded according to the number of click or visits to the website²¹. This new model of business constitutes the biggest expression of the business principle “consumer

¹⁸ P. Cellini, 2012, *Internet Economics – L’industria e i mercati della rete*, Rome, Luiss University Press, p. 236

¹⁹ C. Deng-Neng, B. Jeng, Wei-Po Lee, Cheng-Hung Chuang, 2008, *An agent-based model for consumer-to-business electronic commerce*, Taiwan, Science Direct, available at: <http://www.sciencedirect.com> [Accessed 25 May 2014]

²⁰ Commission Junctions’ website available at: <https://www.cj.com/what-is-affiliate-marketing>, [Accessed 24 May 2014]

²¹ Commission Junctions’ website available at: <https://www.cj.com/what-is-affiliate-marketing>, [Accessed 24 May 2014]

empowerment” since for the first time it’s the consumer who decide the components and any specifics of the deal²².

E-commerce consumer to consumer (C2C) is certainly one of the most interesting types of e-trade, since it is a brand new model of e-business with a great success worldwide. Even if C2C e-commerce entered the market few years ago, it has become very popular among internet users who rapidly get used to exchange goods and services in different auction sites. In this e-commerce model, the auction website works as a demand-supply aggregator, managing the interactions among any single consumer with another. This type of transactions is usually characterized by small amounts since most of the transactions deal with one asset at time²³. The two counterparts (both of them consumers) decide autonomously the price, as any other component of the deal. Since it’s an innovative form of transaction with a rapid expansion, C2C has still many problems to face. Such online business activity is based on the interaction of single privates, in order to aggregate their needs and demands, which by definition remains a very difficult activity to achieve despite the great help of Internet. Once buyer and seller get in contact a new problem arise linked to security and trust. In fact C2C transactions are difficult to control, risk make this online activity quite uncertain²⁴. A study emerged from the *2012 International Workshop on Information and Electronics Engineering (IWIEE)* determined the main problems of Honesty currently faced by C2C e-commerce sites. The first problem is the reliability of the information, since “anyone with a specific identity can release certain information.” Indeed some people driven by their interests, could exploit such false information, inducing the consumer behavior in fraudulent means²⁵. The second matter is related with the credibility of subjects, as stated by IWIEE “In the electronic transaction process, e-commerce subject's credit

²² P. Cellini, 2012, *Internet Economics – L’industria e i mercati della rete*, Rome, Luiss University Press, p. 236

²³ P. Cellini, 2012, *Internet Economics – L’industria e i mercati della rete*, Rome, Luiss University Press, p. 236

²⁴ Z. Shandana, F. Dana, X. Yunyuna, Z. Yonghai, 2012, *Influencing Factors of Credibility in C2C Ecommerce Web*

Sites, China, Science Direct, available at: <http://www.sciencedirect.com> [Accessed 25 May 2014]

²⁵ Z. Shandana, F. Dana, X. Yunyuna, Z. Yonghai, 2012, *Influencing Factors of Credibility in C2C Ecommerce Web*

Sites, China, Science Direct, available at: <http://www.sciencedirect.com> [Accessed 25 May 2014]

is not guaranteed because there is no corresponding constraint of moral and law.” This happens when the seller charge the fee but do not provide the service or good. This is also true in the opposite situation, when the buyer evades executive contracts using anonymity, change name or any other shortcut²⁶. Since the counterparts are consumers, trust remain a strong issue as the problem of transfer of funds. Unlike companies, individuals can rely on a much more constraint range of tools to receive payments, making this transaction more difficult²⁷. The most famous case of C2C website is with no doubt eBay, leader in the sector. eBay reached today 128 million active users, becoming the world’s largest online marketplace, inspiring reliability to the consumers who now trade everything on this website²⁸.

The last innovative form of e-commerce is e-commerce peer-to-peer (P2P). This form of interaction is the maximum representation of Internet, intended as bidirectional media. Unlike the other form of e-commerce, P2P networks are composed by different computers, who interact each other through multiple connections. P2P service is based on an opposite architecture to that of client-service, where a central entity (a server) receives all the communications and requests sent by the multiple computers connected called clients²⁹. In this standard architecture, the single client cannot connect and communicate directly to another client to exchange documents and multimedia files. Everything goes through the central server who is the intermediary of the connection. In P2P networks, clients are connected one to each other and can freely exchange data and files skipping the central server. This is possible because each connection in the P2P network is able to ask information (as in the standard platform) and at the same time work as a server, answering to the

²⁶ Z. Shandana, F. Dana, X. Yunyuna, Z. Yonghai, 2012, *Influencing Factors of Credibility in C2C Ecommerce Web*

Sites, China, Science Direct, available at: <http://www.sciencedirect.com> [Accessed 25 May 2014]

²⁷ P. Cellini, 2012, *Internet Economics – L’industria e i mercati della rete*, Rome, Luiss University Press, p. 237

²⁸ eBay website, available at : [http://www.ebayinc.com/who we are/one company](http://www.ebayinc.com/who_we_are/one_company) [Accessed 25 May 2014]

²⁹ P. Cellini, 2012, *Internet Economics – L’industria e i mercati della rete*, Rome, Luiss University Press, p. 237

requests received by other clients³⁰. The most common example of application of this type of e-commerce is Napster, a file sharing program that permits to share MP3 music files freely and under anonymity³¹. The main problem related with such type of business is the legal infringement of copyright. For this reason the website was forced to closed but many other similar websites are created every day. From 2000 Napster reopened its website, requiring its clients a subscription fee to cover copyright costs. Moreover it has been forced to install a software that prevent the exchange of files under copyright, loosing in this way all its appeal³².

1.1.3 E-commerce history

After having defined the concept of e-commerce, in order to understand better the huge implications of this phenomena, apparently not so different to the traditional trade (already existing since the origin of man), a brief introduction of its history its necessary.

The origins of e-commerce take place in the development of new information technologies. They first transformed the way information were exchanged in the early 60s, when the first EDI application were born. EDI stands for Electronic Data Interchange, which is an electronic communication system that provides standards for exchanging data via any electronic means. Created by transport companies, it started to play an important role in the Industries dealing with high volumes such as food and car industries³³. Despite the usefulness of this innovative system, in the 60's Internet was not born yet and EDI was supported by just closed and secure telecommunication networks which were very expensive to build. Moreover EDI was not interactive, meaning that buyer and seller could not negotiate the transaction through this system, but could just accept or refuse the terms of the deal. A

³⁰ P. Cellini, 2012, *Internet Economics – L'industria e i mercati della rete*, Rome, Luiss University Press, p. 237

³¹ P. Cellini, 2012, *Internet Economics – L'industria e i mercati della rete*, Rome, Luiss University Press, p. 237

³² Napster website, available at : <http://it.napster.com/start> [Accessed 25 May 2014]

³³ P. Cellini, 2012, *Internet Economics – L'industria e i mercati della rete*, Rome, Luiss University Press, p. 231

combination of these factors explains why EDI could have been used for years just by big companies and did not widespread³⁴.

It's at the end of the 60's, when the U.S. Department of Defense founded a team of hardware and software engineers known as ARPANET (ARPA is the acronym of Advanced Research Projects Agency and NET stands for Network) that Internet was born³⁵. ARPANET composed the first network made of four computers and on the 2nd of September 1969 the team managed to transfer information among them through many Interface Message Processors³⁶. From the end of the 80's the success of Internet increased exponentially, expanding more and more the number of users and applications, up to nowadays. Thanks to EDI and another revolutionary technology, EFT or Electronic Funds Transfer (new systems that permitted the transfer of funds via electronic means), the e-commerce has born.

With the advent of Internet, it's easiness of use and convenience, the first e-shops started to appear at the end of the 90's. In 1996 Olivetti announced the opening of a Cyber-market, the first Italian e-shops and among one of the first in Europe. The users could buy books, computers and other electronic devices. Three years later, many European companies created their e-shop but the majority of them had to shut down very soon, since e-commerce was still a too immature and unprofitable business³⁷. The first generation of e-shops had to move for tentative, challenging problems caused by a non-existent background. The development of e-commerce was strictly related to the increasing use of Internet and the level of diffusion of personal computers. For this reason we had to wait the new millennium to have the supportive technology that made "the e-commerce boom"³⁸ possible.

³⁴ P. Cellini, 2012, *Internet Economics – L'industria e i mercati della rete*, Rome, Luiss University Press, p. 232

³⁵ M. Marson, 2008, *A Selective History of Internet Technology and Social Work*, University of North Carolina at Pembroke, p. 36

³⁶ M. Marson, 2008, *A Selective History of Internet Technology and Social Work*, University of North Carolina at Pembroke, p. 36

³⁷ P. Cellini, 2012, *Internet Economics – L'industria e i mercati della rete*, Rome, Luiss University Press, p. 233

³⁸ C. Ruppel, L. Queen, S. Harrington, 2003, *e-Commerce-The Roles of Trust, Security, any Type of e-Commerce Involvement*, e-Service Journal, Vol 2, Available through:

<http://www.serialssolutions.com/en/services/360-link> [Accessed 18 May 2014]

1.1.4 E-commerce impact on the economy- a Macroeconomic perspective

In the precedent paragraphs, introducing the definition and the different types of e-commerce, it has been cleared how this new form of commerce affects almost every business: millions of people use Internet as many firms are embracing it to manage the majority of their activities, all over the world. E-commerce has completely changed the way businesses are conducted and its impacts on the economy are huge in many aspects. Internet has reduced distances, widening the opportunities in B2C and B2B e-commerce transactions across borders. As quoted in the book of Ham and Atkinson³⁹, “Internet sets up a potential revolution in global commerce: the individualization of trade. It gives consumers the ability to conduct a transaction directly with a foreign seller without travelling to the seller’s country. Technology has expanded the consumer marketplace to an unprecedented degree”. On the firms’ side, Internet has changed the way companies redefine their back-end operations – product, inventory, distribution, etc.. With e-commerce new business models, new services, new supply networks, new roles, new relationships are born. All these transformations produce different effects in the economy, as an increased productivity due to a better asset utilization, or faster time to market, intensified competition and enhanced customer service⁴⁰.

This specific part of the paper has been conceived to analyze the general effects of e-commerce in the economy and the Macroeconomic impact on international trade and employment, both for developed and developing countries.

Analyzing the main benefits of e-commerce on the economy, three main areas of improvements may be identified: firms, productivity and prices⁴¹. A combination of

³⁹ S. Ham and D.R.Hatkinson, 2001, *A third way framework for global e-commerce*, Progressive Policy Institute, Technology & New Economy Project

⁴⁰ ECLAC, 8th April 2002, *Electronic Commerce, International Trade and Employment: Review of the Issues*, United Nations – Economic Commission for Latin America and the Caribbean, Washington Office, p. 7

⁴¹ N. Terzi, 2011, *The impact of e-commerce on international trade and employment*, 7th International Strategic Management Conference, Science Direct, available at: <http://www.sciencedirect.com/> [Accessed 15 June 2014]

technological improvements and market forces have constrained companies to review and reinvent their supply chain strategies⁴². To remain competitive, firms started to integrate more on this levels, eliminating inefficiencies and coordinating with their supply chain partners. E-commerce has stimulated the outsourcing of many activities enhancing efficiency in supply chain management⁴³. Moreover, thanks to ICTs technologies, pushing customization on higher dimensions is no more prohibitive in terms of costs and degree of complexity. In fact customization requires the management of complicated processes and specialized information all very costly to obtain. Now, thanks to new ICTs technologies, companies can produce very specific value proposition for the customers, selling a product that fits better the necessities of the end consumer. Besides e-commerce helps firms identifying the market for the inputs they need in production, lowering the costs of gathering and processing information about the prices and inputs of different products and services⁴⁴. Now it's easier for firms to control and manage remote operations - as ECLAC study states: "Costs of transport of intermediate products and/or the need to maintain cost-effective managerial control over remote operations both within and across national boundaries are more manageable in the world of e-commerce" and stimulates outsourcing: "E-commerce thus facilitates the efforts of companies to separate and spin out every conceivable activity in the production process to entities outside the firm (i.e., encourages outsourcing to happen at a global scale.)".

For what concerns productivity, many studies have identified a positive correlation between the latter, e-commerce development and ICTs technologies. In the analysis of Colecchia and Schreyer (2001) on the contribution of information and communication technology to economic growth (performed over 9 OECD countries),

⁴² ECLAC, 8th April 2002, *Electronic Commerce, International Trade and Employment: Review of the Issues*, United Nations – Economic Commission for Latin America and the Caribbean, Washington Office, p. 8

⁴³ ECLAC, 8th April 2002, *Electronic Commerce, International Trade and Employment: Review of the Issues*, United Nations – Economic Commission for Latin America and the Caribbean, Washington Office, p. 8

⁴⁴ N. Terzi, 2011, *The impact of e-commerce on international trade and employment*, 7th International Strategic Management Conference, Science Direct, available at: <http://www.sciencedirect.com/> [Accessed 15 June 2014]

results reveal how in the last two decades ICTs contributed between 0.2% and 0.5% per year to economic growth⁴⁵. Improvements in productivity have also been registered in labor and capital productivity, by several studies. Higher labor and capital productivity have been reported also in industries that were not directly ICTs producers, revealing that such benefits are enlarged to any business that is using this kind of technology⁴⁶.

Many studies have been conducted on the price side, to find out an empirical evidence that the high competition on internet reflects on lower prices for the consumers. One of the first study in 1998, compared the prices for books, CDs and software sold on the Internet and in conventional outlet from 1996 and 1997⁴⁷. The evidence shown in Bayley's work reveals higher prices for goods sold on the Internet than their equivalent sold on traditional retailers⁴⁸. Another study, conducted by Erik Brynjolfsson & Michael D. Smith, shows different results. Their research analyzed Internet as a channel of two homogeneous products (the same analyzed by Bayley), CDs and Books. They collected 8,500 different prices in 15 months, comparing pricing behaviors at 411 Internet and conventional stores⁴⁹. Results reveal lower prices for goods sold on Internet by 9-10% and a wider dispersion of prices in Internet channel If compared to the traditional one⁵⁰. According to Brynjolfsson & Smith "There are substantial and systematic differences in prices across retailers on the Internet. Prices posted on the Internet differ by an average of 33% for Books and

⁴⁵ A.Colecchia and P. Schreyer, 2001, *ICT investments and economic growth in the 1990s: Is the United States a Unique Case? – A comparative study of Nine OECD Countries*, Elsevier Science

⁴⁶ K. Stiroh, 2001, *Information Technology and the U.S. Productivity Revival: What do industry Data Say?*, Mimeo, Federal Reserve Bank of New York

⁴⁷ E. Brynjolfsson and M.D. Smith, 1999, *Frictionless Commerce? A comparison of Internet and conventional retailers*, *Understanding the Digital Economy*, p. 564

⁴⁸ E. Brynjolfsson and M.D. Smith, 1999, *Frictionless Commerce? A comparison of Internet and conventional retailers*, *Understanding the Digital Economy*, p. 563

⁴⁹ E. Brynjolfsson and M.D. Smith, 1999, *Frictionless Commerce? A comparison of Internet and conventional retailers*, *Understanding the Digital Economy*, p. 563

⁵⁰ E. Brynjolfsson and M.D. Smith, 1999, *Frictionless Commerce? A comparison of Internet and conventional retailers*, *Understanding the Digital Economy*, p. 563

25% for CDs.” In conclusion, despite the numerous studies conducted on this issue, the available empirical evidence on price is still mixed⁵¹.

The second part of the paragraph focus on e-commerce’s impact on other two Macroeconomic variables: International Trade and Employment.

E-commerce can be considered an enabler of International Trade, since “it can make the processes of initiating and doing trade easier, faster and less expensive” as quoted in Terzi’s analysis⁵². E-commerce reduces the costs of gathering information across national borders, it simplifies the research of suppliers, it helps companies to negotiate price, to arrange delivery and to market the product. Without e-commerce all these activities should have required at least the physical proximity with all the costs and difficulties related to that. E-commerce stimulates international trade in the same way as lifting other trade barriers would⁵³. As a matter of fact, a positive correlation exists between international trade volumes and e-commerce/internet use. According to Freund and Weinhold study, the biggest beneficiary of e-commerce, the one who will see the highest increase in trade volumes, are countries with the fewest past trade links⁵⁴. The majority of them are developing countries, who have to most to gain from Internet.

However the impact of e-commerce on International trade volumes depends also on the type of good. A great range of products can now be delivered via a network in digital form (such as texts, films etc...). In such cases e-commerce annuls the costs of transportation, pushing the trade volumes up. This type of trade has double digits growth rate and it’s rapidly increasing its role in terms of percentage of total world

⁵¹ N. Terzi, 2011, *The impact of e-commerce on international trade and employment*, 7th International Strategic Management Conference, Science Direct, available at: <http://www.sciencedirect.com/> [Accessed 15 June 2014]

⁵² N. Terzi, 2011, *The impact of e-commerce on international trade and employment*, 7th International Strategic Management Conference, Science Direct, available at: <http://www.sciencedirect.com/> [Accessed 15 June 2014]

⁵³ N. Terzi, 2011, *The impact of e-commerce on international trade and employment*, 7th International Strategic Management Conference, Science Direct, available at: <http://www.sciencedirect.com/> [Accessed 15 June 2014]

⁵⁴ C. Freund and D. Weinhold, 1999, *On the effect of the Internet and International Trade*, International Finance Discussion Papers N.693

trade⁵⁵. On the other side, other typologies of products, who cannot be sent to the customer in digital form but still require a physical delivery, they still depends on transportation costs⁵⁶.

Moreover e-commerce boosted international trade thanks to services. E-commerce and Information technology made “tradable” some type of services who weren’t before such as R&D, quality control, accounting and many others. In this sense e-commerce worked as a new form of trade liberalization⁵⁷: Internet effectively opened markets that were previously closed.

Many studies have also suggested that trade stimulates internet use, as the opposite has already been discussed. It has been shown that when a country is integrated into the global economy, when it has contacts via trade and tourism with other countries, it is more likely to be technologically advanced and to have good levels of internet penetration⁵⁸.

As we can see from the table below, although world trade has an high level of volatility, it always shown a positive trend until 2008. In that specific data, world trade volumes collapsed under the effect of the global financial crisis. It then recovered very rapidly in 2010 to lower again reaching a growth rate of 4% in 2011.

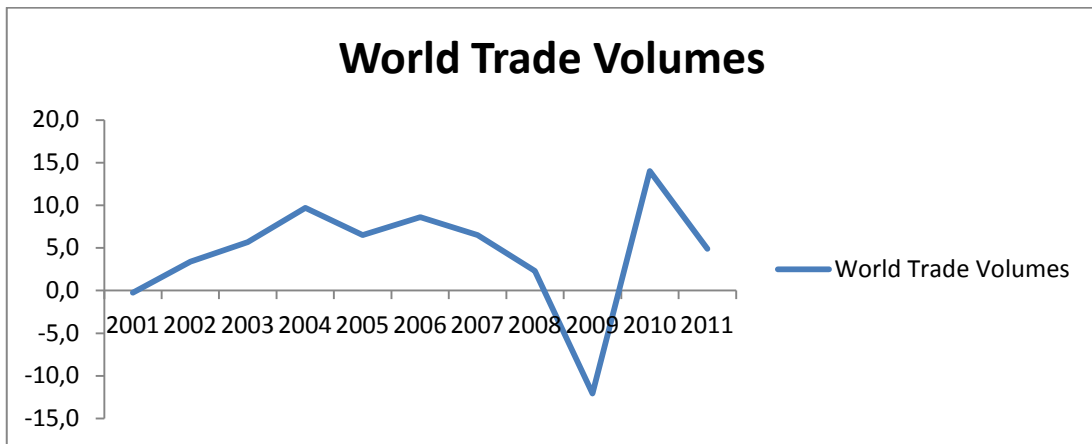
⁵⁵ N. Terzi, 2011, *The impact of e-commerce on international trade and employment*, 7th International Strategic Management Conference, Science Direct, available at: <http://www.sciencedirect.com/> [Accessed 15 June 2014]

⁵⁶ ECLAC, 8th April 2002, *Electronic Commerce, International Trade and Employment: Review of the Issues*, United Nations – Economic Commission for Latin America and the Caribbean, Washington Office, p. 19

⁵⁷ ECLAC, 8th April 2002, *Electronic Commerce, International Trade and Employment: Review of the Issues*, United Nations – Economic Commission for Latin America and the Caribbean, Washington Office, p. 19

⁵⁸ N. Terzi, 2011, *The impact of e-commerce on international trade and employment*, 7th International Strategic Management Conference, Science Direct, available at: <http://www.sciencedirect.com/> [Accessed 15 June 2014]

Figure 1: World Trade Volumes, source: Internet World Stat⁵⁹



As the World Trade Volumes have positive growth rates (except for 2008), the same positive trends can be seen in internet usage growth rate as we can see from the table below. Internet is being used more and more every years, positively affecting international trade volumes.

⁵⁹ Data from Internet World Stat, available at <http://www.internetworldstats.com/list3.htm>, [Accessed 15 June 2014]

Table 1: World Internet usage (June 30, 2012), Source Internet World Stat⁶⁰

World Regions	Growth 2000-2012
<u>Africa</u>	3,606.7 %
<u>Asia</u>	841.9 %
<u>Europe</u>	393.4 %
<u>Middle East</u>	2,639.9 %
<u>North America</u>	153.3 %
<u>Latin America / Caribbean</u>	1,310.8 %
<u>Oceania / Australia</u>	218.7 %
<u>World Total</u>	566.4 %

The presence of these two dramatic changes that took place in the last decades; the large increase in international flow of goods, services and investments and the revolution in Information and Communication Technologies (ITCs) inspired many studies with the purpose of finding a positive correlation among these two factors. Evidence of such studies revealed a positive correlation among export and internet usage, as previously reported, and a positive correlation between globalization and internet⁶¹. In conclusion, one of the most relevant findings is represented by the different effect that Internet, as trade enabler, has on developed and developing countries. The same Freund and Weinhold study found that internet has a greater effect on developing countries than in developed ones⁶². It has been proved how enterprises in developing countries remain in the majority of cases unconnected, as

⁶⁰ Data from Internet World Stat, available at <http://www.internetworldstats.com/list3.htm>, [Accessed 15 June 2014]

⁶¹ G.R.G. Clarke and S. J. Wallsten, 2004, *Has the Internet Increased Trade? – Evidence from Industrial and Developing Countries*, World Bank Policy Research Working Paper 3215

⁶² C. Freund and D. Weinhold, 1999, *On the effect of the Internet and International Trade*, International Finance Discussion Papers N.693

internet access is less common. For this disadvantage, the small percentage of enterprises who have access to Internet seems to take a greater advantage from ITCs, exporting much greater amount of goods and services to developed countries. Moreover, according to the World Bank Policy Research Working Paper: “ We find that Internet penetration is positively correlated with exports from developing countries to developed countries, but not to other developed countries”, e-commerce is more an International business for developing countries than a regional opportunity.

In conclusion, we should then consider the impact that e-commerce had on the other Macroeconomic variable: Employment. According to Terzi’s paper “e-commerce is expected to directly and indirectly create new jobs as well cause job losses”. The direct positive effect in job increase will necessarily be experienced in all that sectors that are strictly related to ICTs technologies such as entertainment, software and digital products⁶³. Moreover the positive indirect effect is determined by the generic positive effect of increased demand for goods and services and increased trade, as previously discussed. Evidence from the United States and from the European Union confirm this thesis, revealing that employment in ICT-related industries and in other business and commerce related sectors accounts for one-third of total employment, being responsible of the 28-35% of job creation in the referring period 1993-96⁶⁴. On the other side, losses in jobs are registered in “retail sector, postal offices and travel agencies”, always according to Terzi’s thesis. The paper explains such negative impact in these sectors as a natural outcome of ICTs development. In such sectors e-commerce has replaced traditional businesses.

We should then consider another aspect of e-commerce effect on Employment. The impact it has on the demand for certain skills and competencies in the Labor

⁶³ N. Terzi, 2011, *The impact of e-commerce on international trade and employment*, 7th International Strategic Management Conference, Science Direct, available at: <http://www.sciencedirect.com/> [Accessed 26 June 2014]

⁶⁴ OECD, 2000, *E-commerce: Impacts and Policy Challenges*, Economic Outlook 67

market⁶⁵. With Internet and e-commerce, workers are surrounded by an immense source of information who can become a burden if not handled in the right way. For that specific reason, skills like responsibilities and decision making based on Information became essential nowadays⁶⁶. Individuals should be able to extract findings and solutions exploiting the large quantities of information about customer demands and production processes. The result in the labor market is an increasing demand for high skilled workers, able to run new technologies and a new set of managers, able to take information-intensive decisions⁶⁷. India is the most famous case of developing country who has been able to construct a substantial pool of high skilled workers in ICTs related industries. Indian benefits of such investment are huge in terms of e-exports⁶⁸.

To conclude, a confirmation of Terzi's thesis comes from the following graph, showing the share of ICT employment in different countries, in the referring period 1995-2008. The graph shows a common trend across all countries: the share of ICT employees has grown in 13 years, with the only exceptions of Canada and United States, who probably experienced a slowdown in percentage, since they've been the precursors of such digital revolution.

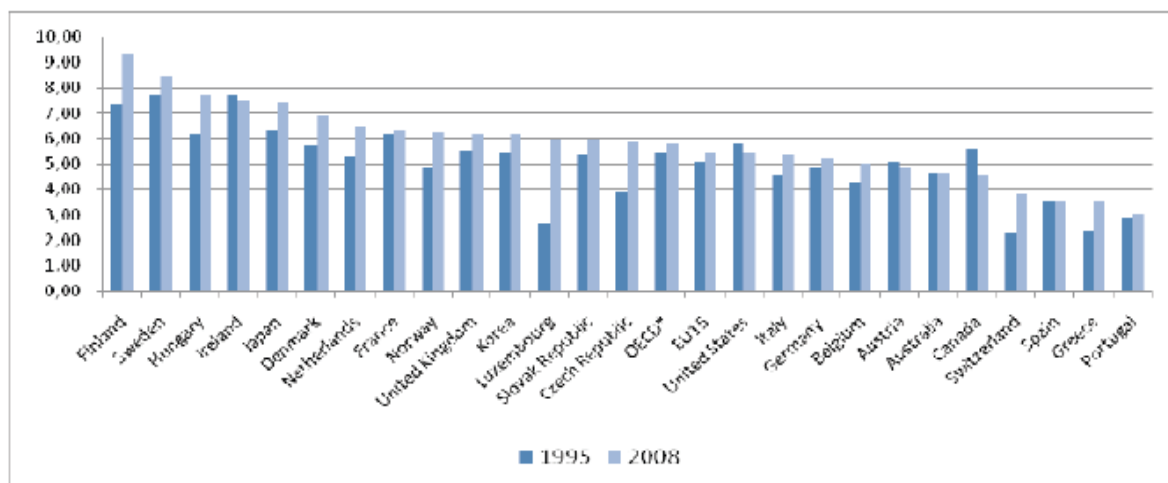
⁶⁵ N. Terzi, 2011, *The impact of e-commerce on international trade and employment*, 7th International Strategic Management Conference, Science Direct, available at: <http://www.sciencedirect.com/> [Accessed 26 June 2014]

⁶⁶ N. Terzi, 2011, *The impact of e-commerce on international trade and employment*, 7th International Strategic Management Conference, Science Direct, available at: <http://www.sciencedirect.com/> [Accessed 26 June 2014]

⁶⁷ N. Terzi, 2011, *The impact of e-commerce on international trade and employment*, 7th International Strategic Management Conference, Science Direct, available at: <http://www.sciencedirect.com/> [Accessed 26 June 2014]

⁶⁸ N. Terzi, 2011, *The impact of e-commerce on international trade and employment*, 7th International Strategic Management Conference, Science Direct, available at: <http://www.sciencedirect.com/> [Accessed 26 June 2014]

Figure 2: Share of ICT employment in business sector employment, 1995-2008, percentages⁶⁹



1.2 Global trends in e-commerce and in the online payments landscape

The second part of the Chapter will analyze the Global trend of e-commerce, with particular attention to each region of the World. Such comparative analysis will better underline how e-commerce has developed under different forms and with different level of maturity around the World. With this aim, we should first introduce some macro data, useful to understand the role of e-commerce in the World economy. Secondly, we'll analyze some factors of developments, the underlying infrastructure that contributes to e-commerce development and maturity.

For what concern World e-commerce data availability, UNCTAD analysis raised an important issue: the difficulty of measuring e-commerce, mainly due to the few official statistics and to high number of private data sources who use opaque and

⁶⁹ OECD ICT Key Indicators Information Technology Outlook, 2010

vary methodologies. For this reason, the study reports different aggregate data for e-commerce, from different sources. According to Goldman Sachs, Retail web sales accounted for USD 963 billion in 2013, while the level of B2C e-commerce sales in 2013 is between USD 1.3 trillion (e-Marketer source) and USD 1.25 trillion (Interactive Media in Retail Group)⁷⁰. This turnover of e-commerce goods and services accounts for 4.2% of total retail goods⁷¹. Nevertheless, the majority of the studies agree on the positive trend that e-commerce is registering in the last decades. In fact, market data suggest that e-commerce sales have risen steadily for years, respecting the forecast of growth published by many studies⁷². An evidence of this fact is coming from the comparison of the level of e-commerce revenues reported by Innopay for 2011, USD 680 billion (with a 18.9% of growth rate year-over-year), with the 2013 level of global e-commerce revenues: USD 1.3 trillion⁷³.

The increasing e-commerce revenues goes in parallel with many other factors of success, first of all the increasing digital buyer penetration, who is experimenting a steady growth as for the graph below. The graph is reporting a stable growth of 1% per year circa until 2017. In 2013, 40.4% of Internet users is a digital buyer; meaning that he has bought, at least once, products or goods via PC, via mobile or through other connected devices. If we report the 40% of internet users in absolute terms, we are around 1 billion online buyers for 2013, and this number will continue to grow, as previously specified⁷⁴.

⁷⁰ T. Fredriksson, 2013, *E-commerce and Development – Key trend and Issues*, UNCTAD, Workshop on E-commerce, Development and SMEs, Geneva

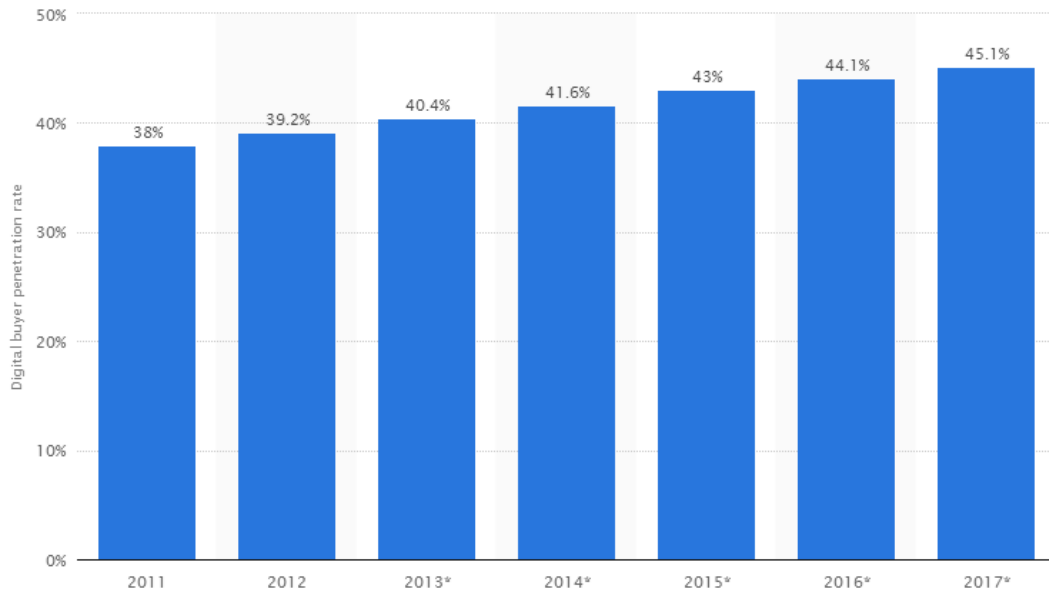
⁷¹ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

⁷² Statista, *Statistics and Market Data on Key Figures of E-Commerce*, The statistic Portal website, available at: <http://www.statista.com/markets/413/topic/544/key-figures-of-e-commerce/> [Accessed 13 July 2014]

⁷³ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.13, available at: <http://www.ecommerce-europe.eu/home> [Accessed 12 July 2014]

⁷⁴ Statista, *Statistics and Market Data on Key Figures of E-Commerce*, The statistic Portal website, available at: <http://www.statista.com/markets/413/topic/544/key-figures-of-e-commerce/> [Accessed 13 July 2014]

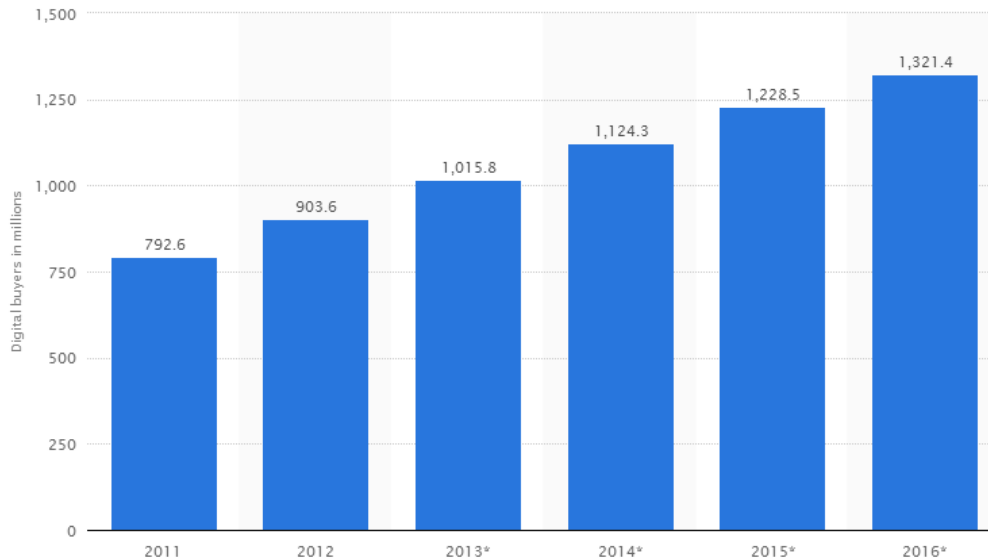
Figure 3: Digital buyer penetration worldwide from 2011 to 2017 – Statista source⁷⁵



The following graph is instead showing the total number of digital shoppers in absolute terms, in the referring period 2011-2016. As previously stated, today circa 1 billion users are shopping online, and this number is expected to increase by circa 300 million users more by 2016.

⁷⁵ Statista – the statista portal, Internet data, *Digital Buyer Penetration Worldwide*, available at: <http://www.statista.com/markets/424/internet/> [Accessed 12 July 2014]

Figure 4: Digital shoppers worldwide from 2011 to 2017 - Statista source⁷⁶



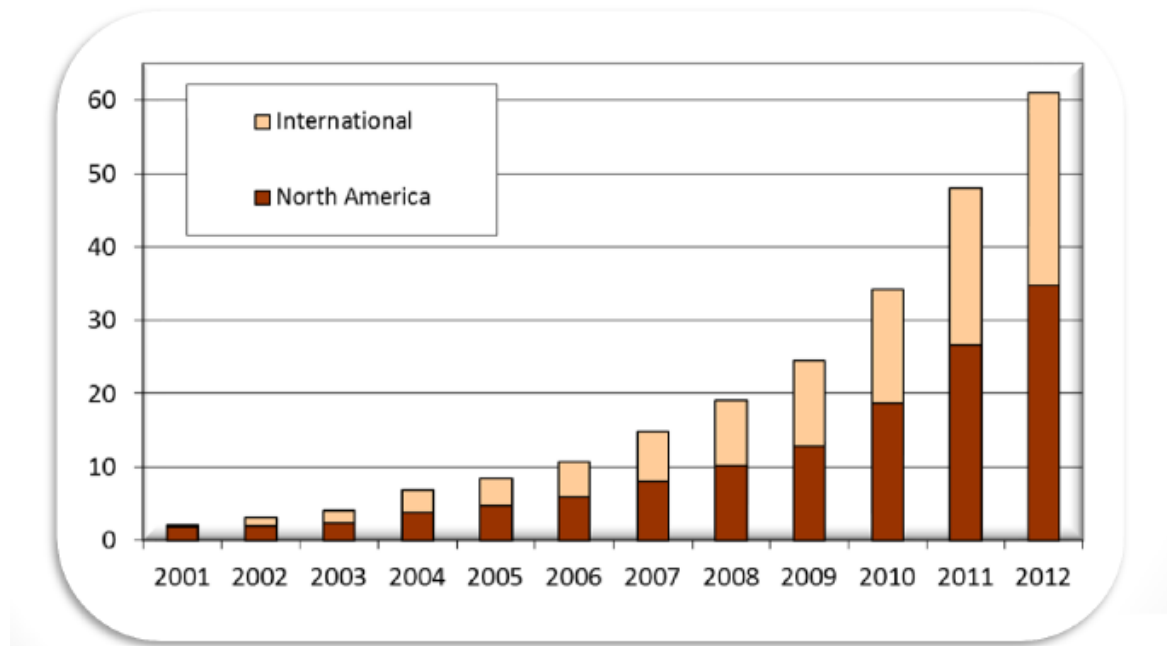
Another important enabler factor of e-commerce is certainly the increasing number of e-shops. In fact new e-commerce sites are opening as on the same side, a growing number of traditional retailers are offering their products online⁷⁷. Another confirm of the fast growing trend that characterizes e-commerce, comes from a quick view to Amazon's net sales over the years. Amazon, "the leading e-commerce platforms worldwide"⁷⁸, has seen its net revenues grew from USD 2.5 billion in 2001 to USD 61 billion in 2012, of which 42% circa came from International sales.

⁷⁶ Statista – the statista portal, Internet data, *Digital Shoppers Worldwide*, available at: <http://www.statista.com/markets/424/internet/> [Accessed 12 July 2014]

⁷⁷ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.13, available at: <http://www.ecommerce-europe.eu/home> [Accessed 13 July 2014]

⁷⁸ Statista – the statista portal, Internet data, *Digital Buyer Penetration Worldwide*, available at: <http://www.statista.com/markets/424/internet/> [Accessed 13 July 2014]

Figure 5: Amazon net sales 2001-2012 UNCTAD source⁷⁹

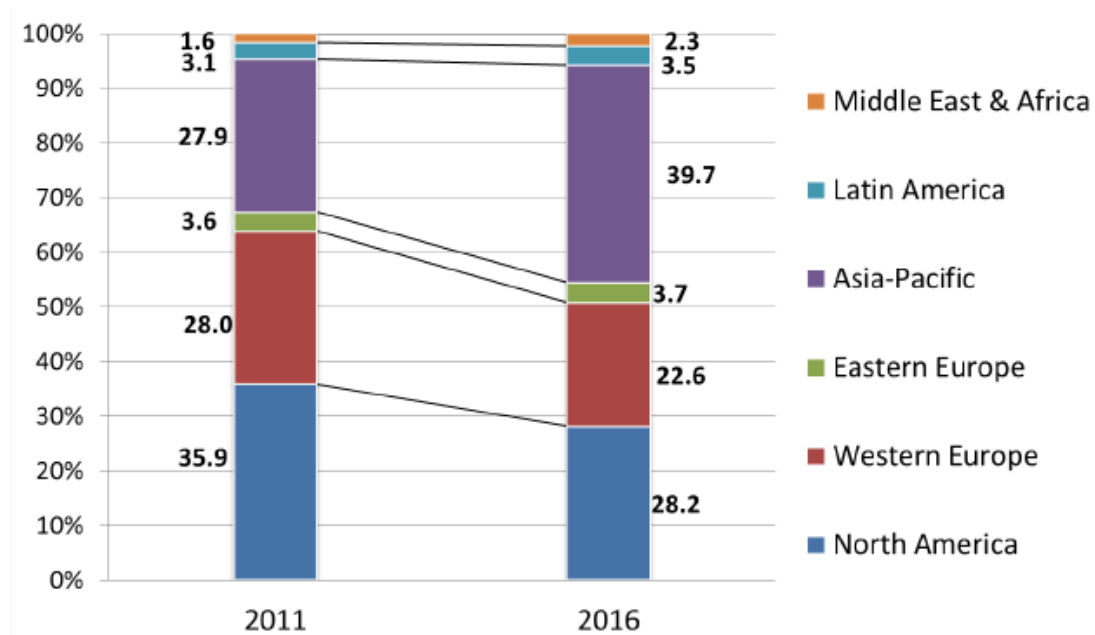


Looking at e-commerce phenomena with a regional perspective, a couple of considerations should be done, which will be discussed in detail in the following paragraphs. First of all, Developed countries have dominated the sector until nowadays, as the following graph is showing how the majority of B2C e-commerce sales (circa 64%) are caught by North America and Western Europe⁸⁰.

⁷⁹ T. Fredriksson, 2013, *E-commerce and Development – Key trend and Issues*, UNCTAD, Workshop on E-commerce, Development and SMEs, Geneva

⁸⁰ T. Fredriksson, 2013, *E-commerce and Development – Key trend and Issues*, UNCTAD, Workshop on E-commerce, Development and SMEs, Geneva

Figure 6: B2C e-commerce sales by region 2011/2016- UNCTAD source⁸¹



According to UNCTAD forecast for 2016, the Asia-Pacific Market will catch up the Developed world, becoming the first leading region in e-commerce sales. In support of this forecast stays the Chinese e-commerce growth rate of 120% from 2003 and other sign of rapid growth in the South: Latin America registered an increase in sales of USD 41.4 billion in the last decade, passing from USD 1.6 billion to USD 43 billion and on the other side Middle East and Africa’s share in global e-commerce sales is expected to rise from 1.6% to 3.5% by 2016⁸².

After having cited some enabler factors of e-commerce, is important to identify the challenges or inhibitors factors to such phenomena. Such analysis will help us understand which problem affects each specific region of the world that we will analyze in the following pages. In particular, such regional analysis will maintain a “Payment focused” perspective to serve better the purposes of the study.

⁸¹ T. Fredriksson, 2013, *E-commerce and Development – Key trend and Issues*, UNCTAD, Workshop on E-commerce, Development and SMEs, Geneva

⁸² T. Fredriksson, 2013, *E-commerce and Development – Key trend and Issues*, UNCTAD, Workshop on E-commerce, Development and SMEs, Geneva

One of the main challenges to e-commerce development is represented by the lack of affordable ICT infrastructures as Internet or broadband or by the low level of digital literacy among producers and users⁸³. In many countries a big issue is represented by the distribution system, caused by a low quality or absent delivery system. Then, since e-commerce is just a particular type of commerce, it's development is affected by the same problems that have an impact on international trade: an instable legal framework, unfair competition, presence of trade barriers⁸⁴ etc... Finally, the last challenge is represented by lack of digital payments⁸⁵. For sure the development of trusted and secure online payment systems is a fundamental factor of success of e-commerce's progress around the world. This sector is rapidly evolving as new actors are entering the market to provide new payment methods who best suites the online users' necessities. The e-wallet is one of the last proposal, and the current paper will analyze such product in specific, focusing on its commercial launch in the Italian market.

1.2.1 Asia-Pacific: the market with the biggest e-commerce potential and highest heterogeneity

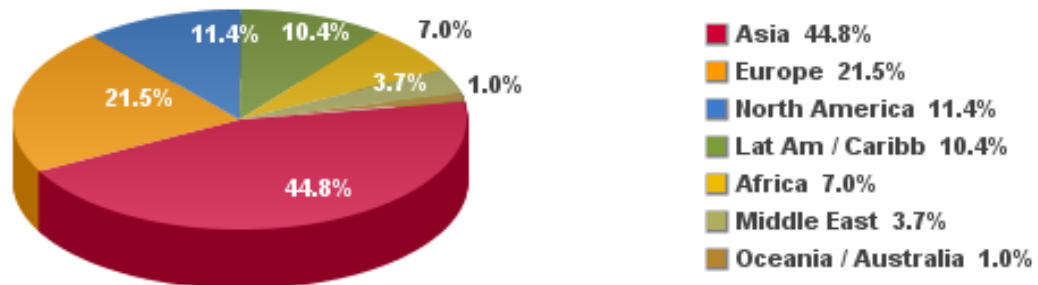
This specific region includes (for the purposes of such analysis) the following countries: China, Australia, India, Japan, Malaysia, South Korea and Thailand. With the highest percentage of Internet users in the World, as the following graph is showing, it represents the region with the highest e-commerce potential.

⁸³ T. Fredriksson, 2013, *E-commerce and Development – Key trend and Issues*, UNCTAD, Workshop on E-commerce, Development and SMEs, Geneva

⁸⁴ T. Fredriksson, 2013, *E-commerce and Development – Key trend and Issues*, UNCTAD, Workshop on E-commerce, Development and SMEs, Geneva

⁸⁵ Statista, *Statistics and Market Data on Key Figures of E-Commerce*, The statistic Portal website, available at: <http://www.statista.com/markets/413/topic/544/key-figures-of-e-commerce/> [Accessed 13 July 2014]

Figure 7: Internet users in the World- Distribution by World Regions Q2 2012 - source: Internet World Stat⁸⁶



Asia-Pacific now accounts for 45.8% of the World Internet users population, outpacing the North American and Western Europe markets. The Asia-Pacific region is growing at incredible rates in the e-commerce sector, at the point that such region is now considered the area with the highest growing potential, as the percentage of online shops is increasing, together with the internet penetration and good levels of online average spending per capita⁸⁷. On the other side, a country-level analysis is necessary due to the highest level of heterogeneity among the region. Indeed the Region comprehends both developed and developing countries, with different level of maturity and different payment ecosystems⁸⁸. Moreover, more differences exists in terms of level of infrastructures and ICT technologies development as in term of cultures: industrialized in the urban areas, but still immature in rural zones where the majority of the population is still unbanked and has a consumer pattern much more similar to that of developing countries⁸⁹.

⁸⁶ Internet users in the World, Q2 2012, source Internet World Stat, available at: <http://www.internetworldstats.com/stats.htm> [Accessed 17 July 2014]

⁸⁷ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.35, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

⁸⁸ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.35, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

⁸⁹ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.35, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

The main characteristics of the area are extremely high e-commerce growing rates, high level of internet penetration and high social media usage, who is changing and influencing the online customers behaviors as their final purchase decision. Due to the high level of fragmentation and heterogeneity, many markets are still at an immature stage and still have to overcome big barriers to e-commerce such as poor delivery networks or security issues related to online payments⁹⁰. As we may expect, the most immature markets, such as Malaysia or India are still cash-based societies, while the most mature markets as Japan, China, South Korea and Australia do actually prefer Card payments both for POS (Point of Sale transactions) and online transactions⁹¹.

With a quick analysis of the players of the market, it is clear how many European and US colossus have made a step in the region, attracted by the double digit e-commerce growth rates. In the majority of the cases the enter in the market is made through an acquisition or a Joint Venture, in order to find a local partner who is able to handle the cultural differences. On the other side, also many Asian companies have strengthen their position in their home market, becoming not only the market leader in Asia, but gaining an International role as is the case of Alipay, “the world’s largest online payment platform” according to Innopay’s paper definition.

As for the heterogeneity issue already exposed, a quick analysis to each specific country of the region is necessary. Starting with China, who rapidly became in the last year the most promising market with a 47% of internet penetration⁹² and USD 212 billion of e-commerce sales in 2012. Alibaba and Taobao⁹³ are the two Chinese

⁹⁰ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.35, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

⁹¹ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.35, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

⁹² The Paypers, 2012, *Cross-border E-commerce Research- China*, available at: <http://www.thepayers.com/ecommerce-facts-and-figures/China/14> [Accessed 17 July 2014]

⁹³ The Paypers, 2012, *Cross-border E-commerce Research- China*, available at: <http://www.thepayers.com/ecommerce-facts-and-figures/China/14> [Accessed 17 July 2014]

e-commerce giants and for what concerns the preferred payment method, Alipay dominates the market with a market share of 40%⁹⁴.

The other developed countries as Japan and Australia have similar trends as China in terms of internet penetration and e-commerce sales. Japan, in particular, registered USD 64 billion in 2012 from e-commerce sales and with 73.3 million of online shoppers⁹⁵ is third in the World rank, after respectively US and China. Even if Japanese consumers have the primate as early adopters of innovative payment technologies, Credit Cards remain the favorite payment instrument. On the other side, Australia remain one of the most attractive countries, since it has one of the highest internet access rate, with 89% of the population in 2012 and registered a sharp (+200%) increase in new online stores in the referring period 2010-2012⁹⁶. The market, one of the most Occidentalized, has PayPal as dominant player and a wide use of Credit Cards.

For what concerns the developing countries, the situation is widely different, with still many obstacle to overcome typical of immature markets. India, has a low internet penetration rate, many gaps in both legal and regulatory framework, as many logistic problems related to scarce delivery. Malaysia, on the other side, is much more advanced than India, with an high Internet penetration rate, Credit Cards as preferred payment method but still low PC penetration rate and a huge gap in the rural areas⁹⁷. Even the ecommerce habits are not strongly built in Malaysian culture yet. In conclusion, still many works have to be done to catch the e-commerce mature markets.

⁹⁴ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.35, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

⁹⁵ The Paypers, 2012, *Cross-border E-commerce Research- Japan*, available at: <http://www.thepayers.com/ecommerce-facts-and-figures/Japan/4> [Accessed 17 July 2014]

⁹⁶ The Paypers, 2012, *Cross-border E-commerce Research- Australia*, available at: <http://www.thepayers.com/ecommerce-facts-and-figures/Australia/4> [Accessed 17 July 2014]

⁹⁷ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.35, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

1.2.3 Latin America: a promise for payments, still in development stage

The Latin America Area, which includes the Caribbean region, together with the South and Central America, is similar to the former region (Asia-Pacific) in terms of growth potential. Both regions are composed by rapidly developing countries, who are experimenting phase of economic development and growth, but Latin America is more homogeneous than Asia-Pacific in its internal composition, in term of language culture, level of development and division in social classes⁹⁸. Such homogeneous pattern of promising countries, makes Latin America a profitable choice for many America and Spanish companies, who enters such markets to “take advantage of the rising demand for international payment processing⁹⁹”. Brazil, representing the Latin American country with the largest population has attracted the attention of international investors, but nowadays the other countries of the region deserve the same focus, since in the last years exceeded Brazil with better results in terms of growing consumer purchasing power and mobile penetration rates¹⁰⁰. Argentina represents an outstanding example with “ a mobile penetration rate of 134% and over 55M mobile subscriber” as the last analysis of Innopay on mobile payments is demonstrating¹⁰¹.

Latin America is the fast growing region in online business, its internet population is increasing as its digital ecosystem is in continuous development. All this is confirmed in the Latin American population habits and trends: Social Media usage is twice the global average¹⁰² as 92% of Latin American population is visiting social network websites, with an average of 10 hours per months on such sites. Moreover

⁹⁸ Innopay, 2014, *Mobile Payments 2013- Changing Checkout*, E-commerce Europe, p.96, available at: <http://www.innopay.com/publications/mobile-payments-2013-changing-checkout> [Accessed 18 July 2014]

⁹⁹ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.35, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹⁰⁰ Innopay, 2014, *Mobile Payments 2013- Changing Checkout*, E-commerce Europe, p.96, available at: <http://www.innopay.com/publications/mobile-payments-2013-changing-checkout> [Accessed 18 July 2014]

¹⁰¹ Innopay, 2014, *Mobile Payments 2013- Changing Checkout*, E-commerce Europe, p.96, available at: <http://www.innopay.com/publications/mobile-payments-2013-changing-checkout> [Accessed 18 July 2014]

¹⁰² J.Kohn, 2013, *The Internet is Booming in Latin America, Especially Among Young User*, Cisco Blog, available at: <http://blogs.cisco.com/cle/the-internet-is-booming-in-latin-america-especially-among-younger-users/> [Accessed 18 July 2014]

Latin America has the fastest growing internet population of all region in the world, with 12% growth rate in the referring period 2012-2013¹⁰³. According to latest Internet World Stat data, 39% Latin America internet users reached 230 million users, with a penetration rate of 39.9%¹⁰⁴. Responsible of such brilliant results are mainly three factors: technology advancement, changes in consumers habits and activities and the development of ITC technology who enabled Internet and Broadband access¹⁰⁵. In the last years, as a result of the growing use of social media in Latin America, Virtual goods gained importance, becoming one of the most profitable online businesses¹⁰⁶. The following image taken from SuperData Reseach analysis, demonstrates how micro-transactions can build macro-revenues in the region. The business of Digital Game is based on a free-to-play business model, where the consumer pays real money for virtual goods. As from the image below, Brazil is leading the way with an online game market of USD 1.5 billion in 2014 and it will continue to grow according to the forecast, reaching 1.6 billion in three years time¹⁰⁷. Mexico and Argentina are following behind, with a consistent market of millions of dollars too, confirming how the trend is common to the whole Latin America region.

¹⁰³ J.Kohn, 2013, *The Internet is Booming in Latin America, Especially Among Young User*, Cisco Blog, available at: <http://blogs.cisco.com/cle/the-internet-is-booming-in-latin-america-especially-among-younger-users/> [Accessed 18 July 2014]

¹⁰⁴ Latin America Internet Usage Statistics, 2011, Internet World Stat, available at: <http://www.internetworldstats.com/stats.htm> [Accessed 18 July 2014]

¹⁰⁵ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.35, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹⁰⁶ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.35, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹⁰⁷ Latin American Digital Games Market, 2014, source: SuperData Research available at: <http://www.superdataresearch.com/market-data/brazils-online-gaming-market/> [Accessed 18 July 2014]

Figure 8: Latin America Digital Games Market - source: SuperData Research¹⁰⁸



Another important trend that characterizes Latin America is the huge gap that exists between fixed and mobile internet penetration¹⁰⁹. The mobile phone penetration is extremely high in the entire region, while on the other side the fixed phone line and fixed internet show very low level of adoption¹¹⁰. The following table compares the two different level of penetration for the main countries of the area. This characteristics is typical of developing countries, as we will see from the analysis of the African region in the following paragraph. It is clear how mobile channel is

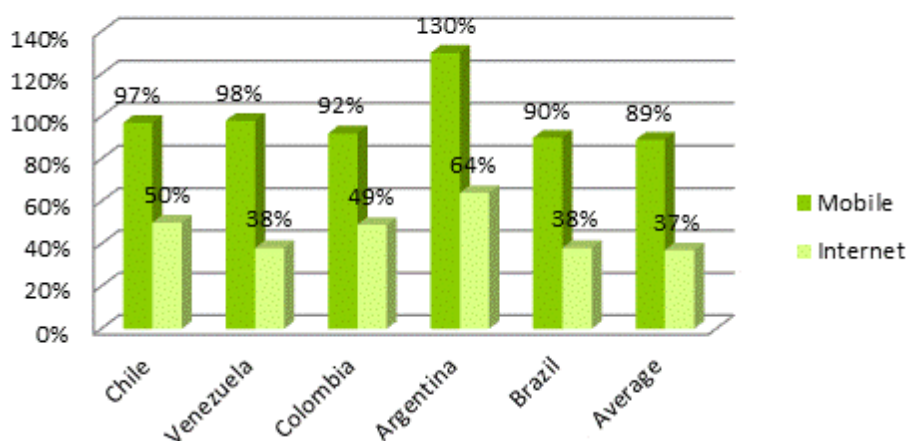
¹⁰⁸ Latin American Digital Games Market, 2014, source: SuperData Research available at: <http://www.superdataresearch.com/market-data/brazils-online-gaming-market/> [Accessed 18 July 2014]

¹⁰⁹ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.35, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹¹⁰ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.59, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

became the consumer’s main portal to internet. According to Innopays’s paper, this is a consequence of “Latin America’s history of hyperinflation and political unrest” who widespread consumer mistrust in banks, giving to mobile-based financial services a head start.

Figure 9: Mobile vs Internet penetration - source: Internet World Stats, 2011¹¹¹



In Latin America the mobile sector is developing on a double front in order to attract both the unbanked population, through a simple and basic product and the richest target, trough sophisticated and elaborated offer¹¹².

Concluding with a quick view to the preferred online payment method in the region, it appears again a characteristic typical of immature markets: in many countries the majority of the population still have security concerns when shopping online or show unfamiliarity with online payment methods¹¹³. Still many online transactions are

¹¹¹ Mobile vs Internet penetration, 2011, source Internet World Stats, available at: <http://www.internetworldstats.com/stats.htm> [Accessed 18 July 2014]

¹¹² Innopay, 2014, *Mobile Payments 2013- Changing Checkout*, E-commerce Europe, p.98, available at: <http://www.innopay.com/publications/mobile-payments-2013-changing-checkout> [Accessed 18 July 2014]

¹¹³ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.63, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

made through cash or via vouchers, who in both cases eliminate the risk of online frauds or risk arising from collecting payments¹¹⁴. We will analyze all types of offline payments in the second Chapter of the paper.

Despite still many features of Latin America region are typical of a developing and immature market, all the countries of the region do have a great e-commerce potential. Starting with Brazil, who is the most important market, since it accounts for 62% of e-commerce sales of the entire region¹¹⁵. Mexico's e-commerce sales are expected to reach USD 3.4 billion in 2016, with a growing rate of 209% from 2010¹¹⁶ but with still many concerns on online payments frauds who necessary need to be overcome. Moreover, according to Innopay's study, the country with the highest percentage of people who use banking service in Latin America is Chile, with 34.8%. Argentina on his side, as we cited before, has the highest mobile internet penetration with a growing number of internet users, while Colombia is the country with the third highest number of social network users, with 295 users every 1000 residents¹¹⁷. Latin America is well described in its internal contradiction: a big promise for payments, still in development stage.

1.2.1 Africa: a cash-based society with a huge mobile payment potential

A deeper analysis of the African market will reveal some specific characteristics, strictly bounded to the peculiarities of the African economy. The latter is characterized by extreme poverty and by a fragmented financial infrastructure, which

¹¹⁴Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.63, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹¹⁵Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.63, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹¹⁶Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.63, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹¹⁷Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.63, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

contribute to maintain the primacy of the cash in the society¹¹⁸. In such a cash-based society, e-commerce has three main obstacles to overcome.

First of all, people do not have access to financial services as the banking sector is stagnating. In 2010 just 10% of African customers were enrolled in formal banking¹¹⁹ since it is “simply unprofitable for banks to serve poor customers, as the revenues resulting from managing their small-value deposits could not offset the costs of servicing them” as Innopay’s study states. The second cause of the high level of financial exclusion lies in the African culture, since it is not eradicated in such society the idea of banks as trusted and secure systems. The result is that it is not easy to make African consumers perceive their necessity for a bank account¹²⁰.

The second and third barrier to e-commerce are strictly correlated to the first cause. The financial sector is highly fragmented both under a regional perspective, as the high concentration of financial services in East-West Africa cannot be found in the Center and in the South, and under a local point of view (a huge gap exists between the banked and unbanked African population)¹²¹. The high fragmentation, together with lacking government policies in the financial and payment sector, caused the low availability of electronic payments (second barrier to e-commerce) and in particular the low level of credit card access (third barrier)¹²². The African e-payment system is still at an early stage, with no perspectives of development in the short term, despite many initiatives have been taken to improve legal certainty and to construct a trusted and confident e-payment landscape¹²³. The promotion of e-payments is particularly hard in a Continent where, half of the population is living below the poverty line and

¹¹⁸ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.31, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

¹¹⁹ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.31, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

¹²⁰ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.31, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

¹²¹ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.31, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

¹²² Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.31, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

¹²³ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.31, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

consequently the number of computer is rare as the majority of the population could not afford it. As the number of e-shops is also extremely low, it is not surprising that none of the African countries has a total retail spending (spent via online channel) over 1%¹²⁴. It goes from 0.01% of Nigeria and Egypt to 0.4% of much mature countries as South Africa¹²⁵.

For the moment, the only viable alternative to e-services seems to be the mobile payment. The mobile phone industry has grown during the years, becoming the only instrument available to the African unbanked population covering the gap left by the fragmented African financial system. Nowadays Africa is become the “second largest mobile market in the World by number of connections after Asia, as well as the world’s fastest growing mobile market” according to Innopay analysis¹²⁶. The leading players in such booming industry are Mobile Payment Aggregators such as PesaPal¹²⁷ who enables consumers to make any type of transactions online, without the need of a bank account or a credit card. The Africa mobile market is a big, profitable business with huge potential, since according to Innopay estimates, it will account for “18% of the continent GDP in 2015”. In estimating the growth potential of this sector, we should surely consider also the most common service, who is again performed by mobile: the P2P money transfer¹²⁸. We have already analyzed this particular form of e-commerce, who consists in the transfer of money between two actors via connected devices, in the first part of the Chapter. In the African case, since a big part of the continent population is living and working abroad, a huge numbers of remittances are recorded and such number is growing exponentially through the years¹²⁹. According to World Bank estimates this form of transfer

¹²⁴Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.34, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

¹²⁵Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.34, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

¹²⁶Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.32, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

¹²⁷PesaPal Homepage, available at: <https://www.pesapal.com/home/personalindex> [Accessed 17 July 2014]

¹²⁸Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.32, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

¹²⁹Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.32, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 July 2014]

became the second largest source of foreign capital after FDIs, account for 2.6% of Africa's GDP in 2009. It does not surprise that P2P transfers by phone became the first and most widely used instrument, considering the necessities of the case: frequent transfers of money to unbanked population. In this scenario, completely dominated by mobile financial services, some online payment option do actually exists nowadays, as for example EBucks¹³⁰, Standard Bank AutoPay¹³¹, PayFast¹³², payGate¹³³, but they do not cover the entire Continent, in some cases not even an entire country. In conclusion, the huge difficulties of African e-commerce will still remain until ICT infrastructure would not be built (increasing Internet access), e-payment system would not be reinforced and banks would not change their approach to financial inclusion.

1.2.4 Middle East: Group Buying sites as first signal for the e-commerce boost in the region

Middle East, as Asia Pacific region is a patchwork of different countries, distant under many aspects. With 210 million people and a GDP of USD 1.6 trillion, it is surely one of the richest area of the world¹³⁴. Such wealth is not distributed homogeneously among the countries as the region comprehends extremely wealthy nations as Qatar, UAE (United Arab Emirates), Saudi Arabia and on the other side, very poor one, as Gaza and Yemen. Heterogeneity is not just in terms of GDP, but it is also a matter of demography, economic development, internet usage, level of technology and of course of e-payment system level of development¹³⁵. Under a e-commerce perspective, the region is still at the origin, at early stage but with optimistic signals since according to many studies, e-commerce sales are expected to

¹³⁰ EBucks Homepage, available at: <https://www.ebucks.com/web/eBucks/> [Accessed 17 July 2014]

¹³¹ Standard Bank AutoPay Homepage, available at: <http://www.standardbank.co.za/portal/site/standardbank/menuitem.de435aa54d374eb6fcb695665c9006a0/?vgnnextoid=b7a6f8bc8f35b210VgnVCM100000c509600aRCRD> [Accessed 17 July 2014]

¹³² PayFast Homepage, available at: <https://www.payfast.co.za/> [Accessed 17 July 2014]

¹³³ PayGate Homepage, available at: <https://www.paygate.co.za/> [Accessed 17 July 2014]

¹³⁴ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.63, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

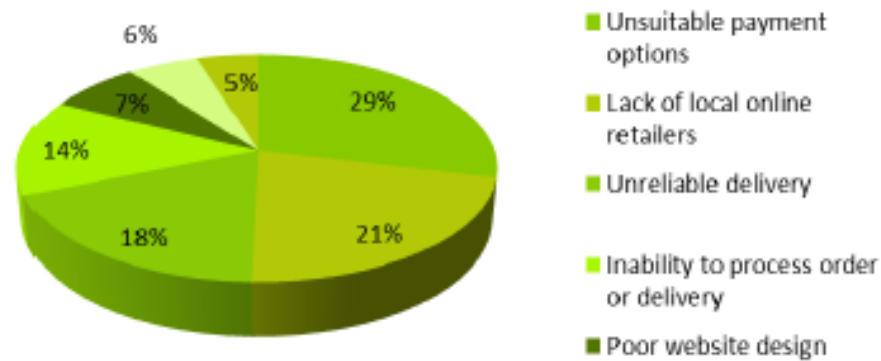
¹³⁵ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.63, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

reach USD 15 billion by 2015¹³⁶. In the meanwhile, still many are the problems to face in order to realize the huge potential of the region in the e-commerce front. Middle East lack of ICT technologies as online payment infrastructures are completely absent; secondly broadband infrastructure is still underdeveloped and the costs of investing in such technology is still too high and unprofitable. Moreover the number of e-shops is still too low, as local brands do not always provide a e-commerce portal to their customers, to shop directly online (only 5% of companies in UAE has developed an online channel to sell goods or services). For that reason the majority of online transactions are done on foreign websites, providing a good marketplace for online transactions. On the consumer side, a study has revealed many gaps in the shopping online consumer experience, as Innopay reported: “unsuitable payment options, the lack of online retailers, unreliable delivery, the inability to process order or deliver, poor website design, bad internet connection and item not in stock”¹³⁷ as it is shown in the following pie chart.

¹³⁶ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.63, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹³⁷ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.83, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

Figure 10: Reasons that prevent online shopping in the Middle East - source Innopay¹³⁸



On the other side, there are many signal of growth and huge potentiality of the market in both e-commerce and e-payment related business. First of all, one of the country, Saudi Arabia represents the second largest market for e-commerce, registering one of the fastest growing rates of internet use in the Middle East, with 11.4 million users¹³⁹. Despite Middle East is still a cash based society, (as for cultural reasons both the unbanked population and the affluent upper class pay cash) the upcoming generation is much more internet oriented and is changing in habits and culture¹⁴⁰. Their presence on the social networks is already very high, as the mobile penetration rate is one of the highest worldwide¹⁴¹. E-payments giants are still waiting for this change in e-payment demand, driven by the “generation revolution”. Moreover another positive sign for e-commerce in the region is represented by the booming sector of Group Buying. Such multi-billion-dollar

¹³⁸ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.83, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹³⁹ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.83, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹⁴⁰ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.84, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹⁴¹ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.83, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

business worldwide consisting in bargaining offers with limited inventory or with short term expiration dates, was brought to Middle East at the end of 2010 by two local startups. The success was immediate at the point that the sector attracted the Western giants as Groupon and LivingSocial in the market. The latter bought GoNabit, one of the two successful startups, placing a huge investment in Middle East¹⁴². The future of the sector will be surely displaced on mobile, considering the high mobile penetration rate in the region and the high purchasing power of its population. It has the potential to become a multi-billion-dollar business just in this specific region. The same is true for the e-commerce and e-payment sector, considering that Middle East is the largest originator of remittances, huge businesses can be developed on the P2P side. This business represents one of the biggest flows to all developing markets, accounting for USD 60 billion in remittances flows every year, generating USD 1.8 billion in revenues¹⁴³. All this revenue pie is now taken by money transfer companies who are dominating the market as Western Union and MoneyGram. In conclusion, considering the huge potential represented by the mobile penetration rate in the region and the new m-transfer technologies, the remittances' revenue pie will surely appear differently in some years.

1.2.5 North America: the e-payment laboratory

North American is surely the most developed e-commerce market in the World. Canadian and in particular US customers have the culture of the online shopping, since from many years they first get confident with the non physical channels of sales, placing orders by phone or via catalogues¹⁴⁴. Here is where Internet and all e-commerce giants were born: Amazon, PayPal, Wall-Mart etc.. Innopay's analysis consider the US market the "laboratory of online payments for the rest of the World",

¹⁴² Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.63, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹⁴³ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.63, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

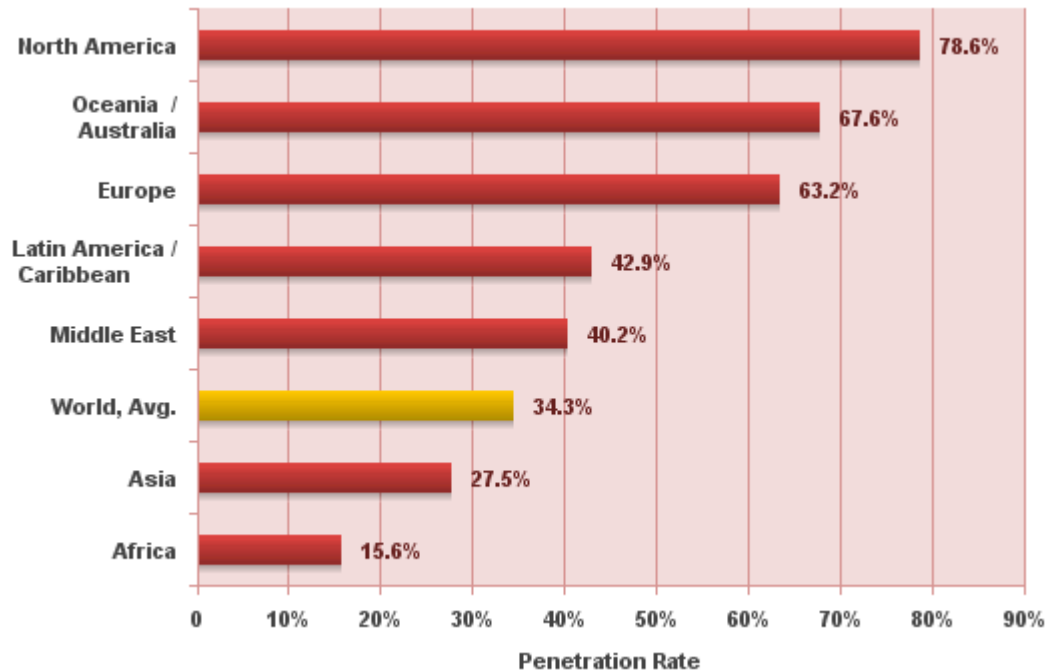
¹⁴⁴ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.63, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

since every new, alternative payment form is tested here, before it is launched in any other country¹⁴⁵. Thanks to its innovative spirit, who characterize specifically some regions of US, the majority of the alternative products are created here and as consequence, are accepted by the population who get rapidly used to innovation. This attitude cannot be generalized for the entire North America region, since the majority of the central States of US and some regions of Canada are still very conservative on the online payment point of view as the majority of online shoppers still relies on credit cards¹⁴⁶. Despite that, the US and Canadian e-commerce market can be considered one of the most mature in the World, for many reasons. First of all, the region registers one of the highest Internet penetration rate worldwide, as the following graph is clearly showing.

¹⁴⁵ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.63, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹⁴⁶ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.63, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

Figure 11: World Internet Penetration Rates by Geographic Regions 2012 Q2 - source Internet World Stat¹⁴⁷



The graph shows North America as the leading Region in the world in terms of Internet penetration rate, with almost 80% of the population connected, very far from the World average of 34.3%¹⁴⁸. Another important feature of the market, who reveals its state of maturity, is the focus that companies have on e-commerce channel. Many companies have introduced a new specific segment in the business, completely dedicated to the online channel. Moreover online shops provide many advantages specific for the online channel, as lower prices, free shipping or daily, fresh deals. This and many other type of promotions are common in such markets and contributed through the years to the consumer's perception of online shopping as convenient and comfortable¹⁴⁹. Results of such focus on e-commerce are many, one in particular is represented by the positive trend of North America revenues from e-sales, who maintained a double digit growth rate during the years, even after the

¹⁴⁷ Internet Penetration Rate by World Region 2012, Internet World Stat available at: <http://www.internetworldstats.com/stats.htm> [Accessed 18 July 2014]

¹⁴⁸ Internet Penetration Rate by World Region 2012, Internet World Stat available at: <http://www.internetworldstats.com/stats.htm> [Accessed 18 July 2014]

¹⁴⁹ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.70, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

2008 global financial crisis¹⁵⁰. Innopays' estimates report a stable growth rate for US retail e-commerce market of 7.5% for the next five years, reaching in 2016 USD 444 billion euro of revenues¹⁵¹. Nowadays, the main problem concerning e-commerce has to do with consumer confidence. The financial economic crisis of 2008 depressed the North American and European Economy drastically. Despite the e-commerce sector did not suffer from such downturn, remaining the only sector with a positive trend during the whole crisis period until recovery, studies reveal how consumers still do not trust the system and still believe that the World Economy is under recession. Such mistrust of the market hits the online sector too, with serious repercussion on the future growth of e-commerce¹⁵².

On the other side, other data reveals how still some work need to be done on the US e-commerce market. First of all, the share of online purchases on total US retail sales is still too marginal, reaching just a 4.8% in 2011. Despite the US online share over traditional retail sales is growing through the years, the percentages are still too far from several EU countries, as for example France (7.3%) or UK (12%)¹⁵³. Moreover, given the last trend of multi connected devices who see the consumer connected everywhere, anytime and the mobile commerce boom who is positively impacting the e-commerce world, a security concern needs to be raised. In m-commerce purchases are performed through our Smartphone, a specific fraud detection mechanism for mobile devices needs to be put in place, in able to cope with the specific characteristics of the m-commerce¹⁵⁴. Considering that according to many studies and analysis the future of e-payments relies on mobile devices the problem needs to be addressed as soon as possible. Finally, despite the innovative character of

¹⁵⁰ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.70, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹⁵¹ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.70, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹⁵² Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.70, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹⁵³ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.70, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹⁵⁴ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.70, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

US market, Cards are still the preferred online payment method for both US and Canada. Moreover the online banking usage is still very low in both countries, with level far below the European average¹⁵⁵.

In conclusion, a quick focus on the Canadian market is necessary. The Canadian online payment landscape is surely influenced by the US trends, but still many differences exist between the two markets. First of all, in terms of sizes, Canadian e-commerce market is ten times smaller than the US one, with a restricted choice of online payment methods. Banks created a restricted payment environment, to boost Cards transactions online and increasing their revenues from that specific stream. Nowadays, even if Credit Card volumes continue to grow, many other alternative type of e-payments are now widely used by Canadian consumers. In conclusion, a confirmation of the conservative character of the Canadian market comes from the reluctance shown to m-channel.

1.2.6 Europe, a two-speed continent: mature vs developing markets

Innopay's define Europe as "the world's most enthusiastic users of the web"¹⁵⁶ with its 565 million users in 2013, representing the 69% of 816 million inhabitants of the Continent¹⁵⁷, widespread in 47 countries (among which 28 are part of the European Union). Among these, the number of e-shoppers is the 32% of the total, 264 million users, creating a e-commerce turnover of goods & services of 363.1 billion euro in 2013¹⁵⁸. These data are expected to grow by nearly 20%, mainly driven by the East

¹⁵⁵ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.70, available at: <http://www.ecommerce-europe.eu/home> [Accessed 18 July 2014]

¹⁵⁶ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.46, available at: <http://www.ecommerce-europe.eu/home> [Accessed 20 July 2014]

¹⁵⁷ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

¹⁵⁸ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

Europe, where countries as Russia, Ukraine and Turkey are still at a developing stage, with a great potential¹⁵⁹.

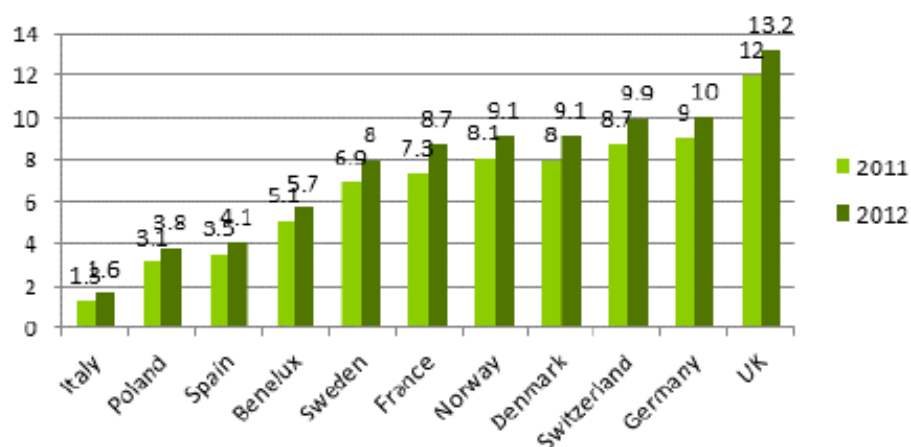
To serve the purposes of the study, Europe is analyzed under a continent perspective, making some specific focus at EU28, who represents one of the most important economic cooperation in the world. Despite the European Union's single market, under an e-commerce perspective great divides exists between the different regions, who show different levels of e-commerce maturity and IT development¹⁶⁰. North-West Europe has all the characteristic of a mature market, while countries belonging to the South-East region are still in a developing phase. The level of disparity is well shown by the different levels of online share of total retail trade, represented by the following graph, or by the percentage of internet users, ranged from 74% in the Netherlands to 13% in Romania and Bulgaria¹⁶¹.

¹⁵⁹ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.46, available at: <http://www.ecommerce-europe.eu/home> [Accessed 20 July 2014]

¹⁶⁰ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.46, available at: <http://www.ecommerce-europe.eu/home> [Accessed 20 July 2014]

¹⁶¹ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.46, available at: <http://www.ecommerce-europe.eu/home> [Accessed 20 July 2014]

Figure 12: Europe, online share of total retail trade. Source: CRR research commissioned by Kelkhoo, 2011¹⁶²



Online sales represented 1.6% of total retail sales in Italy, while in UK it already accounted for 13.2% of the total. The disparity is even wider when we include in the comparison other Eastern countries (not present graphically in Figure12) such as Russia, Bulgaria or Romania¹⁶³.

Despite the differences that we'll analyze later with a specific focus, when looking at Europe with a holistic perspective, a well developed e-commerce market with an advanced online payment landscape can be outlined. Many government initiatives have been taken in order to set a unique European legislation for online payments, known as PSD –Payment Service Directive¹⁶⁴. Moreover a Single Euro Payment Area¹⁶⁵ has been built, in order to foster the single market (e-commerce too), eliminating the concept of cross-border payments and starting to treat every

¹⁶² Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.48, available at: <http://www.ecommerce-europe.eu/home> [Accessed 20 July 2014]

¹⁶³ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

¹⁶⁴ European Commission, Directive on Payment Service, available at: http://ec.europa.eu/internal_market/payments/framework/index_en.htm [Accessed 20 July 2014]

¹⁶⁵ Banca d'Italia, SEPA, available at: <https://www.bancaditalia.it/sispaga/sms/sepa> [Accessed 20 July 2014]

transaction within Europe as a domestic one. We will return on these concepts in the second Chapter of the paper, when facing the security issues of online payments. Another important sign of maturity is represented by the united E-payments merchant initiative, who during the Global E-commerce Summit of 2011 ended up with a position paper that sets the principal improvements and recommendations for card schemes, issuing and acquiring banks¹⁶⁶. These recommendations will improve the consumer experience on European e-shops, fostering the E-commerce European sector who is starting to have a big weight on the total European Economy. In fact the total Gross Domestic Product of Europe has been estimated to be 16.4 trillion euro in 2013, 80% of which is attributed to the 28 countries of European Union¹⁶⁷. The total share of European internet economy in the GDP has been 2,2% in 2014, but it is expected to double by 2016 and to triple by 2020¹⁶⁸. Moreover in terms of employment, e-commerce has already created 2 million new jobs and this number is expected to increase following the same positive trend introduced before.

The European average for internet penetration is high, around 74%, and even higher for EU28 where it reaches 77%, drive by the Scandinavian countries whose internet penetration rates are closer to 100%, as it is clearly represented by the following table.

¹⁶⁶ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.48, available at: <http://www.ecommerce-europe.eu/home> [Accessed 20 July 2014]

¹⁶⁷ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

¹⁶⁸ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

Table 2: Internet Penetration rates- TOP 10 Countries 2013- Source: Worldbank¹⁶⁹

Countries	Internet access*	Online Population
Europe	74%	600.6mn
EU28	77%	392.7mn
Top 10	93%	239.2.2mn
Norway	96%	4.8mn
Netherlands	95%	15.8mn
Denmark	95%	5.3mn
Sweden	95%	9.1mn
Finland	92%	4.9mn
United Kingdom	91%	57.9mn
Germany	86%	70.5mn
France	84%	55.1mn
Belgium	83%	9.2mn
Switzerland	83%	6.6mn

The lowest level of internet penetration in Europe are around 50% of the total population as we can see from the other table, showing the top 5 lowest countries in term of internet access. The first is Turkey with a 46% of the population who has a Internet connection¹⁷⁰, followed by other East-European countries as Ukraine, Romania, Bulgaria and Russia.

¹⁶⁹ Worldbank, *Internet penetration rate –Top 10 Countries; Internet access and online population*, available at: <http://www.worldbank.org/> [Accessed 20 July 2014]

¹⁷⁰ Worldbank, *Internet penetration rate –Top 10 Countries; Internet access and online population*, available at: <http://www.worldbank.org/> [Accessed 20 July 2014]

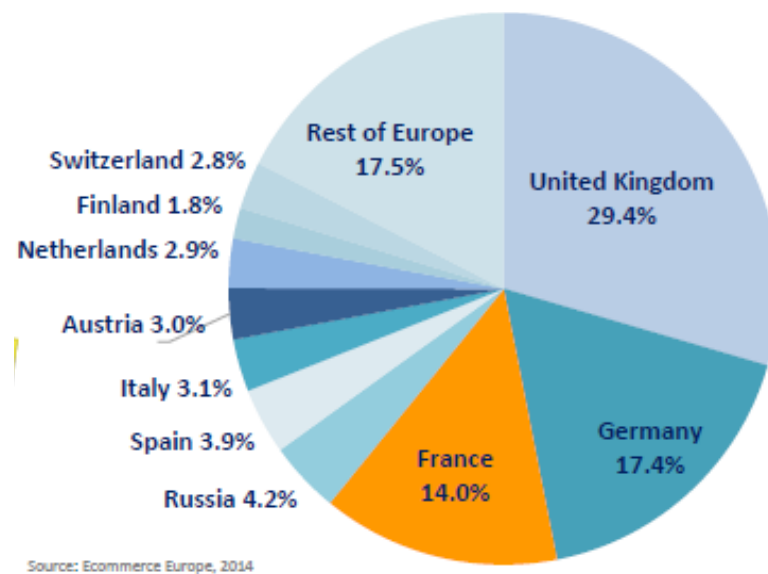
Table 3: Lowest Internet Access - Top 5 Countries. Source: Worldbank¹⁷¹

Countries	Internet access*	Online Population
<i>Top 5</i>	<i>53%</i>	<i>157.1mn</i>
Turkey	46%	34.7mn
Ukraine	50%	22.7mn
Romania	55%	11.7mn
Bulgaria	56%	4.0mn
Russia	59%	84.0mn

In terms of e-commerce sales, looking at the pie chart, the UK predominance clearly comes to light. In 2013 UK accounted for nearly 29.4% of all European B2C e-commerce market.

¹⁷¹ Worldbank, *Internet penetration rate –Top 10 Countries; Internet access and online population*, available at: <http://www.worldbank.org/> [Accessed 20 July 2014]

Figure 13: Top 10 Countries share of European B2C e-commerce market, 2013.
Source: E-commerce Europe, 2014¹⁷²



Another evidence is the high level of concentration of all e-commerce revenues in the first 10 countries, since together they account for 85% of total revenues¹⁷³. The top three e-commerce countries, France, Germany and UK alone represents more than half of all European e-sales, reaching the 60.9%¹⁷⁴. The high level of concentration is another confirm of the highly fragmentation of the European e-commerce market, who will be better understood in the second part of the paragraph, dedicated to the analysis of each European region; respectively the North, West, Central, South and East Europe.

Starting with the most mature markets, the first areas to focus on are the North, West and Central Europe. Northern Europe comprehends Iceland, Norway, Denmark, Sweden, Finland, Estonia, Latvia and Lithuania. It shows the highest level of Internet penetration (90%), with 29 million internet users over 32 million inhabitants, among

¹⁷² E-commerce Europe, 2014, *Top 10 Country share of European B2C E-commerce Market 2013*, available at: <http://www.ecommerce-europe.eu/home> [Accessed 20 July 2014]

¹⁷³ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

¹⁷⁴ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

which 19 million are e-shoppers; meaning that more than half of the entire population (58%) shops online¹⁷⁵. Such number reveal a great e-commerce oriented culture, which is confirmed by the average spending per e-shopper in the region: 1,926 euro per e-shopper, one of the highest in the entire continent¹⁷⁶.

Western Europe reveals similar trend to the Northern area, both in terms of average spending per e-shopper, both in term of internet access. The region comprehends the following countries: Ireland, United Kingdom, the Netherlands, Belgium and France. If compared to the precedent market, the following is much bigger, considering that 161 million people lives in these countries. In absolute terms, it is reflected in greater e-commerce revenues, since they account for 177.7 billion euro, making this region the most developed in terms of e-commerce. The share of online goods in total retail of goods is the highest of Europe, with 9.5% of share¹⁷⁷. The region comprehends two of the biggest European market, UK and France as it was clear from the previous charts. Despite the Western Europe market is one of the most mature, according to E-commerce Europe analysis, it will continue to grow at a +12.4% of growth rate¹⁷⁸.

Finally, the last European mature market: Central Europe. It is composed by Poland, Germany, Czech Republic, Switzerland, Austria, Slovakia and Hungary. It reveals similar but smaller percentages of Internet usage rate (79%), and share of e-shoppers (41%), if compared to the other two regions¹⁷⁹. It also shows a good percentage of online sales over total retail of goods (7%) and a good average spending for e-

¹⁷⁵ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

¹⁷⁶ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

¹⁷⁷ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

¹⁷⁸ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

¹⁷⁹ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

shopper (1,379 euro)¹⁸⁰. The only difference stands in the high growth rate, since according to Ecommerce Europe analysis, the sector will grow by 22.7% in 2013, increasing its 93.3 billion euro of turnover of e-commerce and catching up with the other Northern European countries¹⁸¹.

It is now the turn of European developing markets, respectively Southern and Eastern Europe.

Southern Europe represents Portugal, Spain, Italy, Greece and Turkey. In such countries the weight of e-commerce over GDP is still small, representing just the 1.11%, but it is growing at good rate near 19%, which is higher than the European and EU28 averages. Internet penetration rate is near 60% with a much lower percentage of e-shoppers, who account for just 23% of the population. Even the average spending per e-shopper is low, with an average ticket of 842 euro, almost 1000 less compared to north customers' expenditure¹⁸².

For what concern Eastern Europe, the level of Internet penetration and share of e-shoppers are even lower to that of Southern Region, respectively 56% and 14% of the total¹⁸³. A peculiarity of the market stands in the composition of e-sales: 75% are Goods and just 25% Services¹⁸⁴. In all other markets e-sales were equally distributed among the two categories. The region has also the lowest share of e-commerce over

¹⁸⁰ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

¹⁸¹ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

¹⁸² Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

¹⁸³ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

¹⁸⁴ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

GDP, 0.97% and the highest growth rate (47.3%)¹⁸⁵, typical signs of a developing market as it is.

1.2.7 Focus: peculiarities of the Italian market – the mobile commerce boom

In Italy, in line with the other European countries, e-commerce registers positive trends: a positive growth rate as increasing e-commerce revenues. A non usual scenario for the Italian economy, who since 2008 is affected by the economic recession as the majority of its traditional business do not show particular signs of recovery. Therefore e-commerce success goes against the general stagnating scenario, showing double digit growth rates until 2012. According to Corriere delle Comunicazioni, the great e-commerce success is built on the economic recession itself: the crisis has stimulated and convert the last doubtful internet users¹⁸⁶. Another factor of development is surely the high level of mobile penetration of 41.3% in 2013, which makes Italy one of the first country in Europe in this sector¹⁸⁷. Netcomm analysis reports also a third factor of development, to explain the double digit growth had in the last years: the evolution of the offer via the online channel¹⁸⁸. New business models are developed on the offer side, as for example Cash Sales models and Couponing who are attracting demand through discounts and fast promotions.

Despite the stable double digit growth had from 2004 until 2012, 2013 has been the turning point for the Italian Market. According to Casaleggio Associati Report, 2013 has been the first year of one-digit growth, registering a + 6%¹⁸⁹. The following

¹⁸⁵ Ecommerce Europe, 2014, *European B2C E-commerce Report 2014- Facts, Figures, Infographics and Trends of 2013 and the 2014 Forecast of the European B2C E-commerce Market of Goods and Services*, available at: www.ecommerce-europe.eu [Accessed 20 July 2014]

¹⁸⁶ Corriere delle Comunicazioni, February 2014, *Netcomm-Polimi: mobile commerce da record, in Italia +255%*, available at: <http://www.corrierecomunicazioni.it/> [Accessed 20 July]

¹⁸⁷ In time,2014, *Ecco i paesi con la più alta diffusione di smartphone al mondo*, available at: <http://www.franzrusso.it/condividere-comunicare/paesi-alta-diffusione-smarthphone-mondo/>

¹⁸⁸ Corriere delle Comunicazioni, February 2014, *Netcomm-Polimi: mobile commerce da record, in Italia +255%*, available at: <http://www.corrierecomunicazioni.it/> [Accessed 20 July]

¹⁸⁹ Casaleggio Asociati, 2014, *E-commerce in Italia 2014*, available at: <http://www.casaleggio.it/pubblicazioni/focus/ecommerce-in-italia-2014.php> [Accessed 20 July 2014]

graph reports the Italian e-commerce revenues year by year with the respective growth rate.

Figure 134: Italian E-commerce e-revenues 2004-2013. Source: Casaleggio Associati¹⁹⁰



The double digit trend has disappeared in 2013, registering an impressive slow down. The report explains the general slow down with the losses in two main sectors: the publishing sector, who lost -20% and the Health and Beauty sector, who registered a - 19% too¹⁹¹. The reduction in the growth rate can be also viewed under a positive perspective, as a sign of consolidation of the Italian e-commerce market. A proof of that is the high level of Internet access: 82% of Italian population (35 million people) has now access to an Internet connection, of which 47% via mobile and 15% through tablet¹⁹². It has to be underlined the great increase in the availability of access from

¹⁹⁰ Casaleggio Associati, 2014, *E-commerce in Italia 2014*, available at: <http://www.casaleggio.it/pubblicazioni/focus/ecommerce-in-italia-2014.php> [Accessed 20 July 2014]

¹⁹¹ Casaleggio Associati, 2014, *E-commerce in Italia 2014*, available at: <http://www.casaleggio.it/pubblicazioni/focus/ecommerce-in-italia-2014.php> [Accessed 21 July 2014]

¹⁹² Casaleggio Associati, 2014, *E-commerce in Italia 2014*, available at: <http://www.casaleggio.it/pubblicazioni/focus/ecommerce-in-italia-2014.php> [Accessed 21 July 2014]

mobile devices: the same data for 2012 were respectively 38% for mobile and just 6% for tablet¹⁹³.

The higher internet penetration rates, together with a greater diffusion of smart phones, had a positive effect on the Italian e-commerce culture. In fact, on one side it has consolidated the online shopping habit of those Italians who were already e-shopper and on the other side it has increased the online customer base, converting those who used Internet just to find the most convenient price¹⁹⁴.

On the trade balance side, the Italian e-commerce is still negative as the net increase in absolute terms of Italian Imports is much higher to that of Exports. Italian e-shoppers still buy more from foreign e-shops than what Italian e-commerce sites sell to foreigners: 380 million euro of Export against 480 million euro of Import¹⁹⁵. This is a consequence of the Italian consumer online habit. Just 19% of Italian consumers shops from Italian sites of multinational companies with an Italian corporate base, another 38% from Italian e-commerce sites, 15% buys from multinationals websites who do not have a corporate base in Italy, and finally the 28% buys from International websites of foreign companies; the “Giants of e-commerce”¹⁹⁶. Multinational companies with an Italian website registered the highest level of e-sales growth rate (+46%) thanks to their high experience, matured in other advanced e-commerce markets and to their higher investment capacity¹⁹⁷. For this reason Netcomm analysis defines the e-commerce phenomena as “glocal” since one key of success is represented by the physical presence of the company in the local market and the other one is given by the global relevance, who permits the company to

¹⁹³ Casaleggio Associati, 2014, *E-commerce in Italia 2014*, available at: <http://www.casaleggio.it/pubblicazioni/focus/ecommerce-in-italia-2014.php> [Accessed 21 July 2014]

¹⁹⁴ Casaleggio Associati, 2014, *E-commerce in Italia 2014*, available at: <http://www.casaleggio.it/pubblicazioni/focus/ecommerce-in-italia-2014.php> [Accessed 21 July 2014]

¹⁹⁵ NetComm, June 2013, *E-commerce index – evoluzione degli acquisti online in Italia*, Human Highway, Milano, available at: http://www.consorzionetcomm.it/Consorzio_Netcomm/Soci/Elenco_Soci/Human_Highway.kl [Accessed 21 July 2014]

¹⁹⁶ Corriere delle Comunicazioni, February 2014, *E-commerce, Netcomm: in Italia mercato a +19%*, Available at: <http://www.corrierecomunicazioni.it/> [Accessed 21 July 2014]

¹⁹⁷ Corriere delle Comunicazioni, February 2014, *E-commerce, Netcomm: in Italia mercato a +19%*, Available at: <http://www.corrierecomunicazioni.it/> [Accessed 21 July 2014]

exploit economies of scope and scale and to acquire the necessary experience to have success in the e-commerce business¹⁹⁸.

The majority of 2013 e-commerce reports for the Italian market, agree on a fundamental point: the extraordinary success of m-commerce in Italy. Netcomm analysis has registered three digit growth rate for the mobile commerce sector in 2013, with +255%¹⁹⁹. According to Netcomm paper, this new channel of commerce has open the way to a multi-channel strategy, who all the e-commerce Giants have already adopted. A multi-channel strategy consists in exploiting at the same time both the online and offline channels. An example is represented by Infocommerce²⁰⁰, who permits the consumer to book the good online and to withdraw it directly in store. The payment in this case can be done directly in store or online, as the consumer prefers. In conclusion, the success key in the e-commerce sector is represented by the evolution to a multichannel player, permitting the consumer to purchase at home or on the go, implementing different websites versions, for PC, mobile, tablet etc...and at the same time integrate the offline channel with the web through new and profitable business models.

¹⁹⁸ Corriere delle Comunicazioni, February 2014, *E-commerce, Netcomm: in Italia mercato a +19%*, Available at: <http://www.corrierecomunicazioni.it/> [Accessed 21 July 2014]

¹⁹⁹ Corriere delle Comunicazioni, February 2014, *Netcomm-Polimi: mobile commerce da record, in Italia +255%*, available at: <http://www.corrierecomunicazioni.it/> [Accessed 20 July]

²⁰⁰ Casaleggio Associati, 2014, *E-commerce in Italia 2014*, available at: <http://www.casaleggio.it/pubblicazioni/focus/ecommerce-in-italia-2014.php> [Accessed 21 July 2014]

Chapter 2 : The e-commerce payment system

2.1 Global trends in online payment landscape

After having analyzed the e-commerce trend and development in the World, in line with the paper focus of analysis, we should then introduce the electronic payment world. Sumanjeet's study well explains the important role of e-payments in the e-business industry: "As payment is an integral part of mercantile process, electronic payment system is an integral part of e-commerce"²⁰¹. The advent of this new form of commerce, who has well been described in the first part of Chapter 1, has generated new financial needs who, in the majority of the cases, could not be satisfied by the traditional payment methods. That's why new type of purchasing methods have emerged during the last decades and new and innovative payment instruments are created every year in order to satisfy always new e-customers' needs.

The following Chapter will analyze all the different types of payments methods, starting with the offline payment methods who have been applied to the e-commerce world despite they have always belonged to the traditional commerce; and then reaching both the traditional and innovative forms of e-payments. Even if e-wallets payment method belongs to the latter category, since it is one of the most innovative payment instrument, it will be analyzed in depth in Chapter 3, specifically focus on e-wallets and on the launch of MasterCard e-wallet in the Italian market.

Before analyzing in depth each type of payment method, a definition of Payment system is necessary. According to Business Dictionary, it can be defined as a "Financial system supporting the transfer of funds from suppliers to the users, and from payers to the payees, usually through exchange of debits and credits among financial institutions. It consists of a paper-based mechanism for handling checks and

²⁰¹ S.Sumanjeet, 2009, *Emergence of Payment systems in the age of electronic commerce: the state of art*, Asia Pacific Journal of Finance and Banking Research Vol. 3 No. 3, University of Delhi, India, p.18, available at: <http://globip.com/articles/asiapacific-vol3-article2.pdf>

drafts, and a paperless mechanism (such as electronic funds transfer) for handling electronic commerce transactions.”²⁰²

After having reported the Payment system general definition, we should look more in depth and reports the definition of the E-payment category, from Article 2 of the European Commission Recommendation n. 97/489/CEE: “Electronic payment instrument is an instrument enabling its holder to effect transactions of the kind specified in Article 1: transfers of funds (other than those ordered and executed by financial institutions) and cash withdrawals by means of an electronic payment instrument and the loading- unloading of an electronic money instrument, at devices such as cash dispensing machines and automated teller machines. This covers both remote access payment instruments and electronic money instruments. Respectively, remote access payment instrument means an instrument enabling a holder to access funds held on his/her account at an institution, whereby payment is allowed to be made to a payee and usually requiring a personal identification code and/or any other similar proof of identity. This includes in particular payment cards (whether credit, debit, deferred debit or charge cards) and phone- and home-banking applications. And finally the electronic money instrument who is a reloadable payment instrument other than a remote access payment instrument, whether a stored-value card or a computer memory, on which value units are stored electronically, enabling its holder to effect transactions of the kind specified in Article 1”²⁰³.

The following chapter will mirror the same distinction made in the precedent definitions, who divides the Payment instruments in two categories, the offline payment methods who have been applied to the electronic commerce, such as cash or cheques, and on the other side the e-payments, among which we distinguish the traditional payment systems and the e-payments like e-cash and any new form of m-payment.

According to Sumanjeet study, e-payments are “any payment to businesses, bank or public services from citizens or businesses, which are executed through a

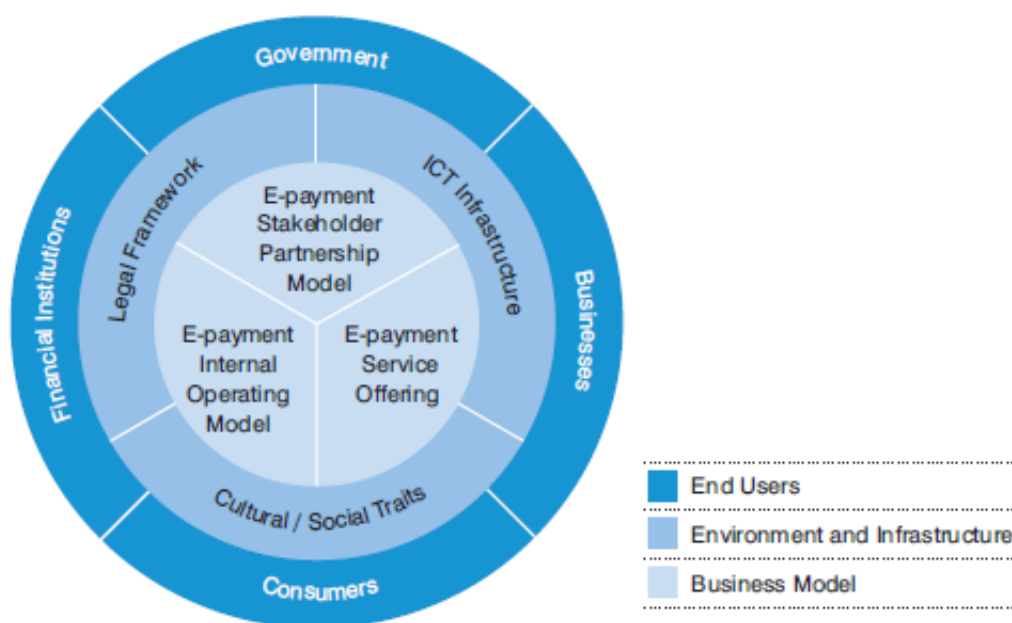
²⁰² Business Dictionary, *Payment system definition*, available at:

<http://www.businessdictionary.com/definition/payment-system.html> [Accessed 24 July 2014]

²⁰³ European Commission, 30 July 1997, Recommendation n. 97/489/CE, available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31997H0489:EN:HTML> [Accessed 25 July 2014]

telecommunications or electronic networks using modern technology”²⁰⁴. As from the previous definition of Sumanjeet, e-payments are the real enabler of e-commerce and as consequence, a good e-payment ecosystem is reflected in the e-commerce development of a country. From the first Chapter analysis, a great disparity worldwide has emerged in terms of e-commerce status and level of maturity, who is strictly correlated to the e-payments system level of development. Consequently it is fundamental to understand which factors construct a positive e-payments ecosystem, who can support the development of the electronic commerce. The optimal e-payment ecosystem should definitely engage all the relevant players and recommendation contained in the following table.

Figure 15: The e-payment ecosystem - source: booz&co²⁰⁵



²⁰⁴ S.Sumanjeet, 2009, *Emergence of Payment systems in the age of electronic commerce: the state of art*, Asia Pacific Journal of Finance and Banking Research Vol. 3 No. 3, University of Delhi, India, p.18, available at: <http://globip.com/articles/asiapacific-vol3-article2.pdf>

²⁰⁵ Booz&co, *Leaving cash behind, the rise of electronic payments in the MENA region*, p.4, available at: http://static.wamda.com/web/uploads/resources/Leaving_Cash_Behin.pdf

The dark blue layer represents the end users, who are the beneficiaries of e-payments: Consumers, Financial Institutions, Businesses and Governments. The second factor to consider is the “environment and infrastructure” layer. The latter is one of the most fundamental factor to consider, since it has the power to stimulates or limits the adoption of e-payments. This layer respectively includes the ICT infrastructure, that delivers the e-payments in a cost effective manner; the cultural and social traits of the population, who help drive the most preferred e-payment method and stimulates its adoption; and finally the legal framework who sets stable rules to govern the provision of e-payments²⁰⁶. Finally, the core of the circle is represented by the e-payments business models who should be deploy together, taking into account the two precedent layers, to build a perfect e-payment ecosystem. The first business model is the “E-payment Service Offering”, who is constituted by the channels through which the e-payments instruments are delivered (as for example the mobile channel), and the payment methods available to end users, to perform the payments (such as Credit/Debit Card, e-wallets..). Then we should analyze the “Stakeholder Partnership Model”, who considers the stakeholders to involve, necessary to provide the services, the type of partnership selected and the fee structure²⁰⁷. Finally, we should involve the Payment Providers, who are the specialists of e-payment services and that in the following table are considered in the third business model: “E-payment Internal Operating Model”²⁰⁸. Building an e-payment ecosystem based on the three business models just presented, considering at the same time the other two layers, who would surely support and stimulate the e-commerce development in every market, especially the least mature one.

After having specified what is intended for “e-payment system” and having introduced the e-payment ecosystem model, we should briefly report what are the global trends and developments on the e-payment side. From the first Chapter it has

²⁰⁶ Booz&co, *Leaving cash behind, the rise of electronic payments in the MENA region*, p.4, available at: http://static.wamda.com/web/uploads/resources/Leaving_Cash_Behin.pdf

²⁰⁷ Booz&co, *Leaving cash behind, the rise of electronic payments in the MENA region*, p.5, available at: http://static.wamda.com/web/uploads/resources/Leaving_Cash_Behin.pdf

²⁰⁸ Booz&co, *Leaving cash behind, the rise of electronic payments in the MENA region*, p.5, available at: http://static.wamda.com/web/uploads/resources/Leaving_Cash_Behin.pdf

been clearly shown the positive trend of e-commerce on a global scale, which means also that the e-payment industry is expanding too. In this profitable and still-growing business, the Payment Service Providers²⁰⁹ also known as PSP, who enables the online shops to accept e-payments, offering them different payment solutions (such as Credit Cards, e-wallets etc..) are increasingly acting on a global scale²¹⁰. Merchants are accepting more and more payment methods, in the aim of providing to their customers any possibility to pay online. The PSP has to be necessarily global, since it has to unlocks payment methods from all over the world, following the merchant desire to satisfy and serve any consumer, anywhere²¹¹.

Another trend in global e-payment landscape is represented by the convergence between offline and online channels. In a couple of years, such distinction among the two channels will be no more useful, since the world is becoming more and more “e”, the offline context will disappear, merged by the online one: “E-payments will be no more a meaningful category”²¹². Since the offline point of sales are integrating the online infrastructures, traditional retailers are evolving in this direction, becoming multi or omni-channel²¹³. Nowadays a growing number of traditional retailers are offering their products online, enabling online payment methods on their websites. In the majority of the cases, for their first step in the online business they are supported by a dedicated PSP²¹⁴. A proof of this convergence is given by the recent trend of PSP, who are expanding their business in the offline market too. Original online payment methods are now proposed by the PSP to traditional retailers, for the offline context as well, since the POS²¹⁵ terminal functions as

²⁰⁹ Payment Service Provider, PSP definition, available at: <http://www.about-payments.com/knowledge-base/providers> [Accessed 24 July 2014]

²¹⁰ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.48, available at: <http://www.ecommerce-europe.eu/home> [Accessed 24 July 2014]

²¹¹ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.48, available at: <http://www.ecommerce-europe.eu/home> [Accessed 24 July 2014]

²¹² Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.48, available at: <http://www.ecommerce-europe.eu/home> [Accessed 24 July 2014]

²¹³ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.48, available at: <http://www.ecommerce-europe.eu/home> [Accessed 24 July 2014]

²¹⁴ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.48, available at: <http://www.ecommerce-europe.eu/home> [Accessed 24 July 2014]

²¹⁵ POS-Point of Sale definition by Investopedia: "Points of sale may be real, as in the case of a "brick and mortar" store, or virtual, as in the case of an electronic retailer that sells goods and services over

internet-enabled device²¹⁶. Finally, the last trend to report in the online payment landscape has to do with the “mobile world”. One of the first factor of the offline-online convergence is represented by the mobile device who is taking internet and the online payments anywhere. The mobile world is expanding not only in developing countries, as the sole online payment alternative for unbanked or under banked population (as is the case of the African region), but also in developed markets, where everything is searched, done or purchased on-the-go. Specifically, two main type of payments are performed through mobile devices, respectively: m-commerce and digital goods²¹⁷. The first consists in the purchase of goods and services through mobile, via the merchant’s website (accessed through the browser) or via the specific merchant’s application for mobile. Since the m-transactions are increasing more and more, becoming one of the fastest growing sector and one of the most profitable, many merchants are developing websites and application suitable for mobile devices. The second type of m-payment is represented by the digital goods, who consists in the purchase of apps, games or music in the mobile phone dedicated store. In the majority of the cases it consists in micro transactions, but it is already registering three digit growth rates and macro revenues²¹⁸. We will analyze the different type of mobile payment methods in details, in the last part of the Chapter, dedicated to the mobile industry.

The Chapter will first analyze the offline payment system, and then will deal with the different e-payment methods, making a distinction among the traditional forms of e-payments and the most innovative one. The last paragraph of the Chapter will instead deal with the security concern, analyzing the different payment systems under a security point of view, comparing the shared information and the risk concerning any type of e-payment.

the internet.” Available at: <http://www.investopedia.com/terms/p/point-of-sale.asp> [Accessed 24 July 2014]

²¹⁶ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.48, available at: <http://www.ecommerce-europe.eu/home> [Accessed 24 July 2014]

²¹⁷ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.48, available at: <http://www.ecommerce-europe.eu/home> [Accessed 24 July 2014]

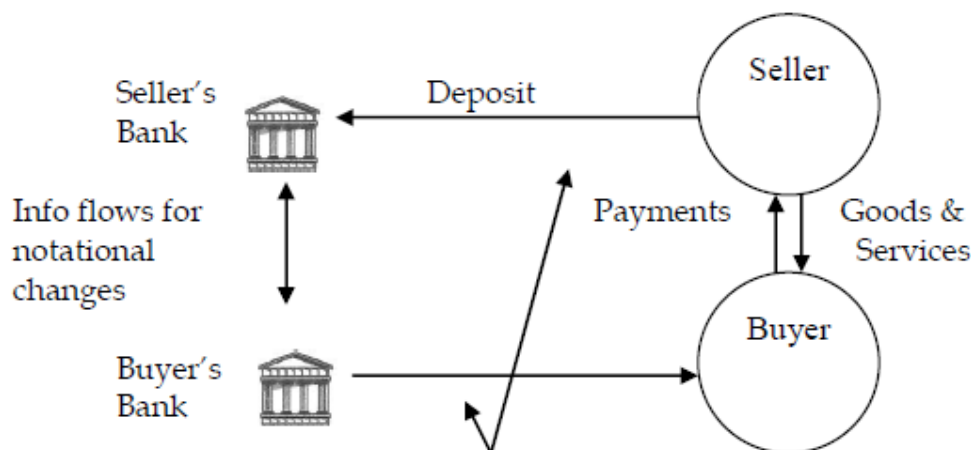
²¹⁸ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.48, available at: <http://www.ecommerce-europe.eu/home> [Accessed 24 July 2014]

2.2 The offline payment method applied to e-commerce - Payment-cash-on-delivery

The category of offline payments includes any instrument that has been used and it is still used in traditional commerce. These forms of payments are now becoming unusual in the electronic commerce world, since these type of transactions cannot satisfy the e-world needs. If we think at traditional commerce and its payment process, we can outline a model who describes its principal characteristics. In the majority of the cases, the model involves a transfer of cash (the majority of payments are settle by cash in many countries worldwide, included Italy) or a transfer of payments information (for check or credit cards payments) between two individuals, a buyer and a seller. If we think of a cash based transaction, it requires the buyer to withdrawals money from the his bank account and to transfer the amount to the seller. The seller on his side will deposit the payment in his account²¹⁹. The following picture represents the offline transaction structure for both cash and non-cash transactions.

²¹⁹ S.Sumanjeet, 2009, *Emergence of Payment systems in the age of electronic commerce: the state of art*, Asia Pacific Journal of Finance and Banking Research Vol. 3 No. 3, University of Delhi, India, p.22, available at: <http://globip.com/articles/asiapacific-vol3-article2.pdf>

Figure 16: Offline Payment System- Source: Asia-Pacific Journal of Finance and Banking Research²²⁰



The diagram represents the face-to-face exchange of money from the Seller and the Buyer; the same is true for non-cash payments, where instead of cash flows, payment information are exchanged among the two actors of the system. In this case the clearing process of the transaction happens between the two banks in a successive moment. In real world exchanges this clearing process involves some type of intermediaries, such as credit card services or cheque processing clearing companies²²¹.

An example of offline payment method who is applied in the e-commerce system, is Cash-on-Delivery, also known as COD. This form of payment can still be found in many Italian e-commerce websites but it reaches its maximum expression in the Indian market, where it is considered the preferred online payment method²²². This

²²⁰ S.Sumanjeet, 2009, *Emergence of Payment systems in the age of electronic commerce: the state of art*, Asia Pacific Journal of Finance and Banking Research Vol. 3 No. 3, University of Delhi, India, p.22, available at: <http://globip.com/articles/asiapacific-vol3-article2.pdf>

²²¹ S.Sumanjeet, 2009, *Emergence of Payment systems in the age of electronic commerce: the state of art*, Asia Pacific Journal of Finance and Banking Research Vol. 3 No. 3, University of Delhi, India, p.22, available at: <http://globip.com/articles/asiapacific-vol3-article2.pdf>

²²² Prateek Panda, 29 January 2013, *Cash On Delivery – Pros, Cons and Why It Works in India*, available at: <http://thetechpanda.com/2013/01/29/cash-on-delivery-pros-cons-and-why-it-works-in->

particular form of transaction consists in the postponed payment of goods at the moment of delivery. The good is ordered on the online store and the customer decides to pay for it, once delivered. This method of payment is particularly widespread in e-commerce immature markets, as is the case of India, or more simply in specific markets, as the Italian one, where consumers' skepticism is still high on an online transaction point of view. Cash-on-delivery in fact, reduces many consumer risks. One of these is connected to the product condition and satisfaction: with COD, the consumer can personally see and touch the product before paying for it, avoiding the problem of "getting something else" which otherwise would be solved through a much longer process of refund request. Moreover, it reassures many consumers who are still afraid of online frauds and avoid inserting their card information on the websites for fear of online scamming. COD system prevents buyers from being scammed by malicious sellers, reducing the skepticism and apprehension of people towards engaging in online transactions²²³. Finally, it minimizes the costs of a poor delivery system, under a consumer perspective, since something that is not delivered is not paid too.

Cash-on-Delivery is particularly common in India, for many factors, which are corresponding to the consumer benefits just presented. In India, since the majority of the population is still unbanked COD represents the only alternative for online shopping. In the meanwhile, this system has been pushed by a high level of frauds on debit and credit cards, since online transactions are characterized by a low level of securities and finally by a low quality of the delivery system. Moreover, we should consider other factors of influence, such as the cultural aspect: the conservative nature of the Indian people. They prefer the conventional shopping experience, buying and touching the product before paying for it²²⁴.

http://thetechpanda.com/2013/01/29/cash-on-delivery-pros-cons-and-why-it-works-in-india/?utm_source=rss&utm_medium=rss&utm_campaign=cash-on-delivery-pros-cons-and-why-it-works-in-india [Accessed 1 August 2014]

²²³ Prateek Panda, 29 January 2013, *Cash On Delivery – Pros, Cons and Why It Works in India*, available at: http://thetechpanda.com/2013/01/29/cash-on-delivery-pros-cons-and-why-it-works-in-india/?utm_source=rss&utm_medium=rss&utm_campaign=cash-on-delivery-pros-cons-and-why-it-works-in-india [Accessed 1 August 2014]

²²⁴ Prateek Panda, 29 January 2013, *Cash On Delivery – Pros, Cons and Why It Works in India*, available at: <http://thetechpanda.com/2013/01/29/cash-on-delivery-pros-cons-and-why-it-works-in-india>

After having described the positive aspects of this paying method, we should also consider the cons of COD, to better understand why in the majority of mature markets, this method has almost disappeared through the online payment methods. Under a consumer perspective, Cash-on Delivery forces the buyer to be physically present at the moment of delivery, reducing drastically one of the main benefits of online shopping. On the merchant side, COD can become a loss since this system gives the opportunity to customers to change their mind, even once the delivery has been already completed. In these cases the seller has already shipped the item and the customer cancel the order once the product is at his door, incurring in logistic costs with no source of revenue. To avoid losses, in the majority of the cases the shipping cost is in charge of the consumer in any case. Where it is not possible or not provided, COD become a source of losses for the company. Another problems is represented by the high risk of theft. Since with COD the buyer consigns the cash payment to the delivery agents, at the end of the day, the latter will have quite a big amount of money to handle, taking with them all the concerning risks of traveling with big amount of cash. In conclusion, the last cons to report is related to time: money has to do several passages before arriving in the seller hands. This time delay negatively affects the company accounts.

2.3 Electronic payment system (EPS)

After having described the offline payment system, the following paragraph will now introduce the electronic payment system or EPS, a whole world of electronic transactions conceived and born to serve the electronic world. As we have previously seen, in the offline world the consumer has a physical contact with the product, he sees it, it examines it and then, eventually pays for it with cash or check or credit card. The Cash-on-Delivery payment method is the most common type of offline payment system applied to e-commerce, but many others exists even if not so common, as for example the payment by check at delivery or by credit card in the

india/?utm_source=rss&utm_medium=rss&utm_campaign=cash-on-delivery-pros-cons-and-why-it-works-in-india [Accessed 1 August 2014]

case the deliver has a POS to accept the payment. On the other side, EPS has been conceived to serve the electronic commerce, to supply the absence of physical proximity: in this case the consumer does not see nor examine the product before paying for it since the payment is performed by using integrated software and hardware systems²²⁵. The first payment system using electronic distribution networks were already used by banking and business sectors in the 1960s, when big amount of money was transferred in each transaction²²⁶. Then, thanks to many technological improvements, EPS became not just a system for big business or for the banking sector, but also for smaller payments, more suitable for the consumer world. This revolution has changed the electronic commerce and social practices while creating new businesses.

In the first chapter of the paper, a brief history of the evolution of different payment technologies has been done, introducing EDI technology and then EFT (electronic fund transfer) who gave birth to all e-payments methods. The following paragraphs will introduce all major form of e-payments, analyzing for any of them their specific characteristic, pros and cons.

2.3.1 Credit/Debit/Prepaid card payment

The first e-payment method to consider is one of the oldest and most common payment system worldwide. In the purposes of the analysis, the paper considers this form of payment a traditional payment system, since it was born to serve the offline world. Even though it is today the most used and widespread e-commerce payment method, it could not be analyzed as a mere offline payment method since it is no more the case. To conclude the prelude on terminology, a credit, debit or prepaid card payment can be defined as a traditional e-payment system since it belongs in origins to the offline world, but it has been successfully applied to the electronic

²²⁵ Middle East tecnica University, *The Electronic Payment System*, available at: http://ocw.metu.edu.tr/pluginfile.php/354/mod_resource/content/0/Lecture_4.pdf [Accessed 05 August 2014]

²²⁶ S.Sumanjeet, 2009, *Emergence of Payment systems in the age of electronic commerce: the state of art*, Asia Pacific Journal of Finance and Banking Research Vol. 3 No. 3, University of Delhi, India, p.22, available at: <http://globip.com/articles/asiapacific-vol3-article2.pdf>

system since its features and characteristics solved many electronic commerce's necessities, making it one of the most convenient e-payment system.

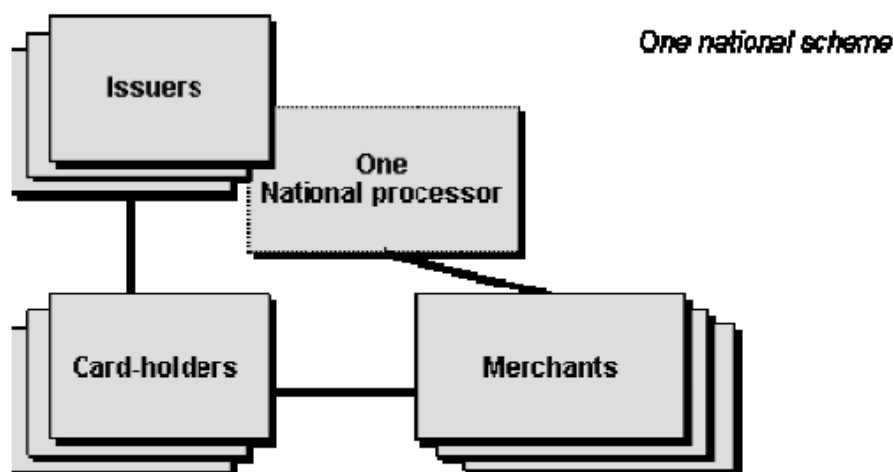
Before analyzing the pro and cons of this form of payment, we should first understand how the system works and what is the difference between Credit, Debit and Prepaid cards.

We could distinguish two types of scheme, respectively the "three party model" and "four party model". The "three party model", well represented in the following figure, can be defined as a "closed system" since the card scheme owner is at the same time the Issuer of the card and the Acquirer of the merchant transaction. In this system, the company operating the network interfaces directly with merchants and consumers, managing the whole transaction on its behalf²²⁷. Many European domestic schemes are based on this model, as in these cases one national processor manages the entire transaction²²⁸, also defined as "on-us".

²²⁷ Banking Enquiry Report to the Competition Commissioner, *Payment Cards and interchange*, available at: <http://www.compcom.co.za/enquiry-in-to-banking>

²²⁸ MasterCard WorldWide Fact Sheet, *The SEPA four party business model. Bringing increased merchant and consumer choice and fostering convenience and competition in the Single Euro Payments Area*, available at: http://www.cardpaymentsolutions.co.uk/articles/sepa_4party.pdf

Figure 1714: Three party model - Source: MasterCard²²⁹



The “four party model” has been a natural evolution of the closed scheme, where no transfer of revenues happened between Issuer and Acquirer and so no interchange appeared. When both world of Issuing and Acquiring started to expand, banks started to differentiate these two business, specializing on one of the two. With this change another actor in the scheme became essential: a Payment Network Operator who settles the rules of the scheme and transfers the remuneration between Issuer and Acquirer. As from the following Figure, representing the open scheme, the key players are respectively the Cardholder, the Issuer, the Merchant, the Acquirer and the Card Association or Payment Network Operator. The Issuer is the bank where the Cardholder has his bank deposit and who has issued the card that the actor is using in the transaction, while the Acquirer is the bank of the Merchant who is accepting the payment via a Point of Sale (POS) in case of traditional commerce or is receiving the card’s data via Internet if it is the e-commerce case. The Acquirer has distributed the technology to the merchant (the POS or the online payment page and infrastructure) and all the accepted transactions will be deposited automatically in the Merchant bank account. In the Figure 4 we can see the transaction settlement line who shows

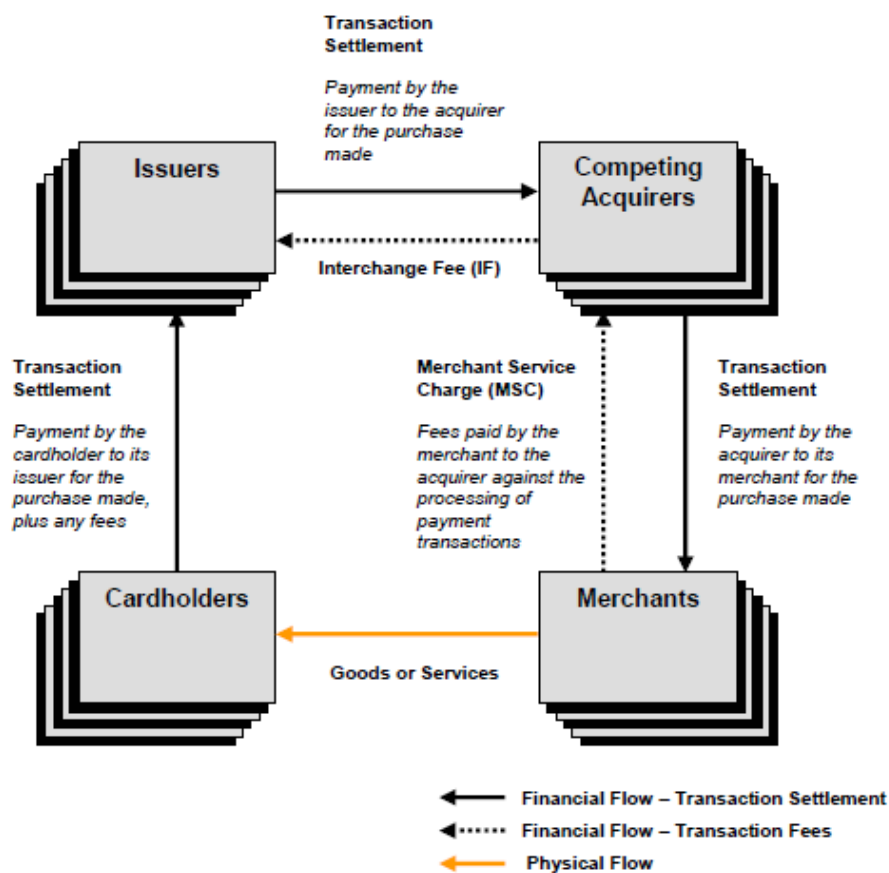
²²⁹ MasterCard WorldWide Fact Sheet, *The SEPA four party business model. Bringing increased merchant and consumer choice and fostering convenience and competition in the Single Euro Payments Area*, available at: http://www.cardpaymentsolutions.co.uk/articles/sepa_4party.pdf

the money flow of the card payment. The Issuer transfers the payment, from the Cardholder bank account to the Acquiring bank, who pays the Merchant for the purchase made. The remuneration of the scheme is instead represented by the Transaction Fees who has an inverse direction compared to the transaction settlement one. The Merchant pays a fee on each card payment accepted; this MSC Merchant Service Charge is paid to the Acquirer who has to remunerate the Issuer bank by certain basis point on each transaction²³⁰. This form of remuneration is called Interchange fee and it is settled by the Card Association, as MasterCard or Visa who acts as a balance of the system, setting rules to run the system's equilibrium (one of these rules is the same Interchange fee)²³¹.

²³⁰ Banking Enquiry Report to the Competition Commissioner, *Payment Cards and interchange*, available at: <http://www.compcom.co.za/enquiry-in-to-banking>

²³¹ Banking Enquiry Report to the Competition Commissioner, *Payment Cards and interchange*, available at: <http://www.compcom.co.za/enquiry-in-to-banking>

Figure 18: Four Party Model - Source: MasterCard²³²



What the figure is not showing, is the Authorization, Clearing and Settlement phase of the transaction. In the Authorization phase the Cardholder presents its card to the Merchant, who processes the card and transaction information, requesting an authorization to the acquiring bank. The latter submits the authorization request to Credit Card Network, who transfers it to the Card Issuer. This request is launched on real time to verify if the payment has been accepted by the Issuing part. If the transaction is authorized for processing, the merchant will receive an approval message. At the contrary, the payment method can be declined for many reasons; among which the most common is the absence of credit, typical of prepaid cards.

²³² MasterCard WorldWide Fact Sheet, *The SEPA four party business model. Bringing increased merchant and consumer choice and fostering convenience and competition in the Single Euro Payments Area*, available at: http://www.cardpaymentsolutions.co.uk/articles/sepa_4party.pdf

Even when the system has approved the transaction, it is still up to the merchant to verify the validity of the card and to identify the cardholder, before completing the transaction²³³.

Then if the payment has been Authorized, the Clearing phase starts, which usually takes one day to be completed. In this phase transaction data are exchanged between the Issuer and the Acquirer. In the specific, the Acquirer sends the payment data to the Network Operator (as for example MasterCard), whose clearing system validates the information and transfers the purchase information to the Issuer who on his side prepares the Cardholder's statement²³⁴. Finally, in the Settlement phase, the payment funds are transferred from the cardholder bank's account to the merchant's bank account. This phase takes usually two days to be completed. Its flow is well represented in Figure 4, in the Financial Flow line- Transaction Settlement.

After having explained the card payment basis, necessary to understand how the system works, we should now define the different type of card payment, to conclude the clarification on the card payment world.

When a consumer is applying for a **Credit card**, he is actually applying for a line of credit, in other words he is applying for the ability to purchase goods and services with borrowed money from the bank, up to a maximum credit limit. Since it is a form of credit, the parameters vary according to the credit history of the consumer²³⁵. We should then distinguish two typology of credit cards: the credit card issued by credit card companies (as MasterCard, Visa etc..) and banks (Unicredit, Intesa San Paolo etc..) which are the most common type of credit card, base on credit history, income

²³³ Uni Bul- Credit Card Blog, *Authorization, Clearing, and Settlement of MasterCard Transactions*, available at: <http://blog.unibulmerchantservices.com/authorization-clearing-and-settlement-of-mastercard-transactions/> [Accessed 07 August 2014]

²³⁴ Uni Bul- Credit Card Blog, *Authorization, Clearing, and Settlement of MasterCard Transactions*, available at: <http://blog.unibulmerchantservices.com/authorization-clearing-and-settlement-of-mastercard-transactions/> [Accessed 07 August 2014]

²³⁵ MasterCard WorldWide Fact Sheet, *The SEPA four party business model. Bringing increased merchant and consumer choice and fostering convenience and competition in the Single Euro Payments Area*, available at: http://www.cardpaymentsolutions.co.uk/articles/sepa_4party.pdf

level and wealth, as we have explained before; and on the other side the credit cards issued by department stores and oil companies (as Shell for example). The latter offers incentives to attract customers and are highly profitable for the issuing companies, permitting them to retain their customers through loyalty schemes.

For what concerns Debit Cards, the main difference with Credit Cards is represented by the use of a PIN or Personal Identification Number²³⁶. Under a customer perspective, these two form of payment are very similar; this explains how the majority of the population ignores the substantial differences among the two. For its convenience and easiness of use, this form of payment is widely used worldwide, since it permits the customer to stay in his or her budget, not allowing the cardholder, as the credit card does, to go beyond his or her resources. Under a merchant perspective, debit cards are convenient too, since they permit them to collect the payment more quickly than credit cards do²³⁷.

Finally, the last type of payment card to consider is the Prepaid Card. This payment instrument is not connected to a bank account and it is recharged through bank transfers or cash deposits. In other words, it needs to be recharged and its limit is determined by the amount of money recharged²³⁸. The use of this payment method has risen during the years, as an effect of the development of the e-commerce sector. Prepaid permit unbanked consumers or with a limited access to credit, to have an alternative form of payment. Under an e-commerce perspective, Prepaid cards are common also among those customers who have a credit line: this is mainly a security concern effect²³⁹. Many consumers prefer to avoid inserting their credit card

²³⁶ Middle East tecnica University, *The Electronic Payment System*, available at: http://ocw.metu.edu.tr/pluginfile.php/354/mod_resource/content/0/Lecture_4.pdf [Accessed 08 August 2014]

²³⁷ Middle East tecnica University, *The Electronic Payment System*, available at: http://ocw.metu.edu.tr/pluginfile.php/354/mod_resource/content/0/Lecture_4.pdf [Accessed 08 August 2014]

²³⁸ MasterCard site, *Carta Prepagata- Il modo più facile di pagare*, available at: http://www.mastercard.com/it/privati/carte_prepagate.html [Accessed 08 August 2014]

²³⁹ ZD Net, 2012, *E-commerce driving up prepaid card use, report says*, available at: <http://www.zdnet.com/blog/btl/e-commerce-driving-up-prepaid-card-use-report-says/73346> [Accessed 08 August 2014]

information on websites for their shopping online. In order to eliminate the risk of online frauds on credit or debit cards, directly connected to their banks account, they usually recharge their prepaid card with a limited amount of money. This effect is surely a sign of the high level of mistrust that many consumers still have on the e-commerce system.

After having analyzed both the systems and the different type of cards, we should consider the pros and cons of this form of payment applied to the e-commerce world. An online payment can be performed via a credit, debit or prepaid card in different ways. One of the oldest form of online card payment is the “order by phone”, where the card details were transmitted to the merchant by telephone. The most common way to pay online now, is surely by filling online forms who request the essential information to perform the transaction: cardholder’s details, card number, expiration date and CVC2 which is usually the three code number in the bank of the card. The main pro of this form of payment is its level of maturity and high level of penetration. Today it is the most used online payment method worldwide. Almost everyone has a card to perform both offline and online transactions. With “high level of maturity”, the paper intends the high confidence of use of customers. If compared to other forms of online payment, who the study will analyze in depth in the following paragraphs, the customer is now confident with this form of payment. Since it is one of the oldest payment instrument, the consumer had the time to get used to it and to consider it as a daily financial instrument. Moreover, merchants have the certainty to collect the payment in a short period of time, or even in real time. In conclusion, the main card payments’ advantages are convenience, good transaction efficiency, compatibility, mobility and low financial risk²⁴⁰.

On the other side, these pros are counterbalanced with just as many cons, who exists and are still predominant in many regions of the world. First of all, we should consider the high transaction costs of this form of payment: “the transaction costs relating to payments of less than 10 EUR for multimedia content cannot be recovered

²⁴⁰ S.Sumanjeet, 2009, *Emergence of Payment systems in the age of electronic commerce: the state of art*, Asia Pacific Journal of Finance and Banking Research Vol. 3 No. 3, University of Delhi, India, p.22, available at: <http://globip.com/articles/asiapacific-vol3-article2.pdf>

if such payments are made by credit card” is what an EU Study on e-payments is stating²⁴¹. Secondly, the security concern is surely one of the biggest barriers to overcome. Online Credit Card payments have several limitations especially for merchant, such as the lack of authentication, the repudiation for change and of course the risk of liability for credit card frauds²⁴². We will analyze more in depth the security issue in the last paragraph of the chapter, reporting both the different risks and the new securities measures applied to online payments. Moreover, we should consider that in many region of the World, where the majority of the population is still unbanked, such form of payment is not used and appreciated. Other innovative forms of payments are applied, who will be better analyzed in the mobile payment paragraph, later in this chapter.

2.3.2 Electronic Fund Transfer or EFT – the EU case study “MyBank”

The Electronic Fund Transfer is together with Card payments, one of the oldest form of payment instrument applied to the electronic commerce. It enables businesses and customers to exchange money electronically, avoiding the use of checks or wire transfers²⁴³. It consists in the transfer of money from one bank account, directly to another bank account via computer based systems, used to perform both transfer of funds within the same financial institution or across multiple institutions²⁴⁴. The costs of the transaction vary and depends on the financial institution performing the transfer. Such form of electronic payment has paved the way for paperless environment, building the ground of a cashless and paperless society; making cheques, stamps and paper bills obsoletes. In other worlds, Card and EFT payment

²⁴¹ European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at: http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

²⁴² S.Sumanjeet, 2009, *Emergence of Payment systems in the age of electronic commerce: the state of art*, Asia Pacific Journal of Finance and Banking Research Vol. 3 No. 3, University of Delhi, India, p.22, available at: <http://globip.com/articles/asiapacific-vol3-article2.pdf>

²⁴³ Don Sadler, *The Benefits of Electroni Funds Transfer*, All Businesses blog, available at: <http://www.allbusiness.com/banking-finance/banking-lending-credit-services/13624860-1.html> [Accessed 09 August 2014]

²⁴⁴ Financial Litteracy, EFT- Electronic Funds Transfer, available at: <http://financialliteracy.bankofguyana.org.gy/component/content/article?id=136> [Accessed 09 August 2014]

systems are the traditional e-payment instruments, the predecessors of the most innovative form of payments launched nowadays²⁴⁵. The most popular application of EFT consists in the direct deposit of the transferred amount of money in the bank account, without recurring to a paycheck²⁴⁶. EFT main advantages consist in its reduced administrative costs, simplified bookkeeping, high level of security and high efficiency²⁴⁷. Moreover, for the consumer it results easy and convenient to use, fast (as the settlement is performed within one day) and finally secure. In fact the consumer perceives this form of payment has highly secure, since it is performed directly from its home banking, highly protected by all the banks measures of security. The main disadvantage is represented by the irreversibility of the transaction. Once the IBAN or account number has been inserted and the payment has been performed, there is no way of reversing it. The bank would process the transaction considering the information provided as accurate and once the amount is transferred, the process is completed and it is irreversible²⁴⁸. Moreover this form of payment usually have a domestic applicability, being limited for national payments and not ideal for micropayments.

This form of payment is particularly used in Northern European countries as Germany, Austria and Netherlands where it is become part of the daily routine of its inhabitants. The European Commission, in the effort of fostering the European competitiveness at world level, it has launched as part of the Lisbon Agenda, a pan-European project known under the name of My Bank²⁴⁹. The European Commission has recognized the importance of e-commerce in the European economy, and

²⁴⁵ Financial Litteracy, EFT- Electronic Funds Transfer, available at: <http://financialliteracy.bankofguyana.org.gy/component/content/article?id=136> [Accessed 09 August 2014]

²⁴⁶ Middle East tecnica University, *The Electronic Payment System*, available at: http://ocw.metu.edu.tr/pluginfile.php/354/mod_resource/content/0/Lecture_4.pdf [Accessed 09 August 2014]

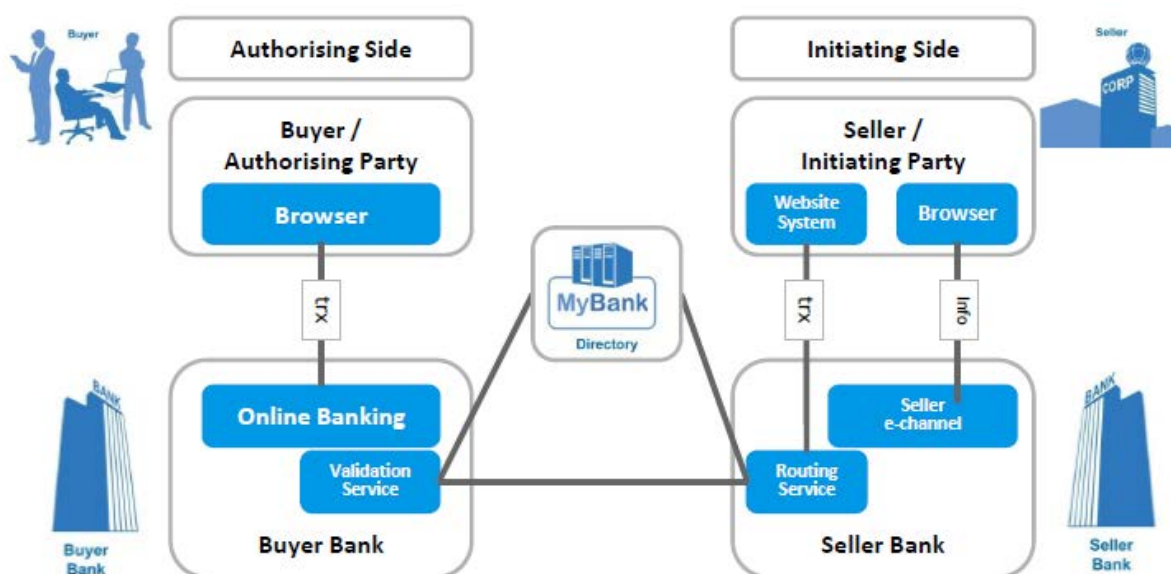
²⁴⁷ Middle East tecnica University, *The Electronic Payment System*, available at: http://ocw.metu.edu.tr/pluginfile.php/354/mod_resource/content/0/Lecture_4.pdf [Accessed 09 August 2014]

²⁴⁸ Financial Litteracy, EFT- Electronic Funds Transfer, available at: <http://financialliteracy.bankofguyana.org.gy/component/content/article?id=136> [Accessed 09 August 2014]

²⁴⁹ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p. 49, available at: <http://www.ecommerce-europe.eu/home> [Accessed 09 August 2014]

consequently the relevance of building an online payment infrastructure with a pan-European reach, who could transform any e-payment across EU countries a domestic transaction. My Bank was launched in 2011 as the e-authorization scheme developed by EBA, the European Banking Association²⁵⁰. Within Europe only credit cards have now a full reach of the continent, since debit cards and online banking still have a domestic connotation. My Bank is born with the aim of providing a secure and reliable pan-European online payment method, who could have the same reach on the continent of Credit cards, without its fraud risks concerns²⁵¹. Based on a protocol using internet and web services, it has no central processing and no storage of data as we can see form the following scheme.

Figure 19: My Bank model - Source Netcomm e-payment²⁵²



My Bank system enables the consumer to pay for online goods and services through their online banking. At the moment the project is live in 3 countries with 141 banks

²⁵⁰ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p. 49, available at: <http://www.ecommerce-europe.eu/home> [Accessed 09 August 2014]

²⁵¹ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p. 49, available at: <http://www.ecommerce-europe.eu/home> [Accessed 09 August 2014]

²⁵² Netcomm E-Payment, 2014, *My Bank- Digital Payments and identity from your Bank*, available at: <https://www.mybank.eu/> [Accessed 09 August 2014]

and financial institutions participating; among which 141 are Issuer and 136 are Acquiring banks²⁵³. The Customer reaching potential has been estimated to be 12 million buyers today, becoming 15 million in the next future²⁵⁴.

Under a consumer perspective, this payment instrument will have a familiar and secure customer experience. In fact, selecting My Bank among the payment method offered in the payment page of an e-merchant site, the customer will choose his bank and he would be redirect to his bank's online banking portal where he would have to log in with his home banking credentials. Immediately, the transactions details would appear directly in the home banking interface; authorizing the transaction, the payment will be automatically performed. Both the e-merchant and e-customer will receive an immediate notification of the authorized transaction²⁵⁵. One of the main benefit for the consumer consists in the high level of security and familiarity with the system, since he has to log in his trusted, secured and already familiar online banking account. On the e-merchant site, the implementation of the system is simple and secure since it reduces frauds associated with the transfer and storage of Credit card details²⁵⁶.

2.3.3 E-money & smart cards as specific electronic payment methods – Bitcoin focus

With the rise of Internet and e-commerce, a big necessity of finding an adequate electronic payment instrument arise too. Several promising new payment techniques emerged who could specifically deal with the online context: these are respectively known as e-money, smart cards, virtual pre-founded cards and platform payment systems²⁵⁷. Even though such forms of payment were conceived specifically for the

²⁵³ Netcomm E-Payment, 2014, *My Bank- Digital Payments and identity from your Bank*, available at: <https://www.mybank.eu/> [Accessed 09 August 2014]

²⁵⁴ Netcomm E-Payment, 2014, *My Bank- Digital Payments and identity from your Bank*, available at: <https://www.mybank.eu/> [Accessed 09 August 2014]

²⁵⁵ My Bank Homepage, available at: <https://www.mybank.eu/> [Accessed 09 August 2014]

²⁵⁶ My Bank Homepage, available at: <https://www.mybank.eu/> [Accessed 09 August 2014]

²⁵⁷ European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at: http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

online world, they play a limited role in the European e-commerce framework. Despite an increase in use in the referring period 2005-2007, e-money still represents just 4.2% of total EU enterprise turnover²⁵⁸. One of the causes of this low rate of use has to be found partially in psychological and cultural barriers and partially in the uncertainties and gaps created by the previous European eMoney Directive (Directive 2000/46/EC)²⁵⁹. Such Directive contributed to the creation of an e-money scheme who could not guarantee the security of the transaction, the anonymity of the users and the interoperability of the system²⁶⁰. The result was a lack of confidence of the market, who limited the penetration of e-money as online payment instrument in Europe.

Before entering in details in each specific e-payment instrument, the paper will briefly analyze the deficiencies of the European legislative framework, who have been partially recovered in the last years by a new eMoney Directive. Such Directive was born after two years of intensive interaction among the European Commission and the ECB, European Central Bank²⁶¹. These two institutions had two opposite orientations regarding the European legal framework to create for e-money. On one side, the European Commission expressed the necessity to foster the EU competitiveness and in this aim, wanted to create a legal framework who could stimulates innovation. On the other side, ECB had an opposite opinion, less liberal and more regulatory. ECB priority was to build a legal framework who could first of

²⁵⁸ European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at: http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

²⁵⁹ Directive 2000/46/EC of the European Parliament and the Council of 18 September 2000 on the taking up, pursuit of and prudential supervision of the business of electronic money institutions, available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000L0046:EN:HTML> [Accessed 09 August 2014]

²⁶⁰ European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at: http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

²⁶¹ European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at: http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

all ensure the protection of customers and merchants, protecting the participants against crimes and abuses of this new form of payment, who could create instabilities in the financial markets²⁶². The previous eMoney Directive was a compromise of these two approaches, including within many gaps and uncertainties, as previously introduced. In fact, such Directive does not include a clear definition of e-money, leaving space for doubts and free interpretations. Moreover, an excessive prudential regime was put in place. As a result, e-money issuing institutes were subjects to a too stringent regime than that applied to other financial institutions. One of these restrictions regarded the limited business activities who these institutions could carry on, which made the e-money business unprofitable and not sustainable. All these uncertainties in the legal framework profoundly affected the e-money business. When the European Commission realized the profound inconsistency of the previous Directive, who did not give to e-money the possibility to deliver its potential benefits, adopted a new eMoney Directive in 2009 who needed to be implemented by the Member States by the end of April 2011²⁶³. The latter clarified the scope and definition of e-money, clarifies the prudential rules and eliminated the restriction of activities that e-money institution can carry on.

In line with the new eMoney Directive and the Payment Service Directive, we will now analyze the different types of electronic payments, regulated by the latter directives.

In the first part of this paragraph, we used the world e-money for referring to the all forms of e-payments that we will now analyze. In the specific, one of these payment instrument is the “served based money” or “e-money” or “ digital cash”. The most common type of Digital Cash consists in the direct and anonymous transfer of funds,

²⁶² European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at: http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

²⁶³ European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at: http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

who can be stored on personalized online account²⁶⁴. The payment is performed via an encrypted messages and as cash payments in traditional commerce, it is completely anonymous and direct, since it does not need any intermediate passage²⁶⁵. The benefit for the consumer consists in the possibility to do not share its personal information of other sensitive data to a third party to perform the payment. In the majority of the cases, this anonymous transfer of funds does not have a limit in terms of amount. This innovative scheme permits to access the server based money via an email, website or SMS. Once the account is accessed, the funds can be transferred through an email or telephone number. One of the most known case of served based money is PayPal, who permits transfer of funds without sharing the personal and sensitive information with the merchant or any third party²⁶⁶. According to the European Commission analysis, a cons of such payment method is represented by the security concern: “Server based e-money may fail to meet the requirement of security.. Although account based systems such as PayPal cannot be hacked in the same way as smart card technology, they do suffer from other security threats, for example, a type of online fraud known as "phishing"”²⁶⁷

We should then consider another e-payment instrument: Smart Cards. Differently to digital cash, this instrument has a physical structure. They are similar to other type of cards or plastic money, with the only difference that it has an electronic microchip embedded in the plastic body. In this microchip a certain amount of value is stored via encrypted algorithms, who can be encoded through specific reader machines²⁶⁸.

²⁶⁴ G. Comandé & S. Sica, 2001, *Il commercio elettronico ,profili Giuridici- Il pagamento elettronico e contante digitale: il pagamento in rete*, G.Giappichielli Editore, Torino, p. 201

²⁶⁵ G. Comandé & S. Sica, 2001, *Il commercio elettronico ,profili Giuridici- Il pagamento elettronico e contante digitale: il pagamento in rete*, G.Giappichielli Editore, Torino, p. 201

²⁶⁶ European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at: http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

²⁶⁷ European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at: http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

²⁶⁸ European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at:

These smart cards can be used both offline (usually for parking and ticketing machines) and online. They should not be confused with the traditional credit, debit or prepaid cards, who in Europe have the chip embedded in the plastic too. These forms of payments do not have the same scheme as traditional card have (three or four party model). Moreover they can be used for online purchases, only if the consumer has a specific card reader attached to the computer, who can encrypt the message stored in the chip, understanding the corresponding value stored who can be used for the transaction²⁶⁹. In Italy, the most known form of Smart Card was represented by MINIPay, who was particularly used in traditional transactions, as for example these cards were distributed by the municipalities to pay bills, parking etc²⁷⁰. In conclusion, the development of this form of payment has been slow and uncertain in the majority of European countries²⁷¹.

The last two forms of payments analyzed are respectively the Disposable and Virtual pre-funded Cards and the Platform Payment System. The first consists in a type of served base e-money with a physical card as is the case of smart cards. Differently from smart cards, they do not have a chip with stored value embedded in the card since e-money is stored in a server. These cards are usually issued as scratched cards: the consumer finds in the card an anonymous identification number who connects it to the server²⁷². For its anonymity they are usually used in online entertainment as online gaming and adult entertainment. For what concerns the Platform Payment System, this form of payment has expanded in the last decade with the increasing use

http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

²⁶⁹ G. Comandé & S. Sica, 2001, *Il commercio elettronico ,profili Giuridici- Il pagamento elettronico e contante digitale: il pagamento in rete*, G.Giappichielli Editore, Torino, p. 201

²⁷⁰ Università degli Studi di Sassari, 2007, *La moneta elettronica*, available at: http://eprints.uniss.it/10/1/Pisanu_M_Tesi_Dottorato_2008_Moneta.pdf [Accessed 09 August 2014]

²⁷¹ European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at: http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

²⁷² European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at: http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

of social networks, online games and other virtual platforms such as I-Tunes or Google Android Market²⁷³. If we think at these online markets or at Facebook's games, they include coins systems used to purchase goods, services for real or virtual world. Those coins can in fact be used to purchase digital services related to the community.

To conclude, a consideration has to be done on Bitcoin, since this form of payment has been frequently discussed on Italian and international newspapers during the first part of 2014.

Bitcoin is a peer-to-peer independent virtual currency. Differently from all the e-money payment system already analyzed, Bitcoin is independent, since it has no fiat currency counterpart and no central regulation²⁷⁴. Since there is no central authority who can control the value of e-currency, its value fluctuates according to demand and trust of the system. Users can buy Bitcoin in an online exchange and then store the value in a Bitcoin wallet. This form of payment is not so widely accepted through online merchants and many scandals have been raised about the type of online websites who accepted this form of payment not yet recognized by the financial institution and governments and so for definition "illegal". The differences among Bitcoin and e-money are many: first of all, in terms of accessibility, the first are largely limited to Internet connection, while the second have accessed to any type of electronic device²⁷⁵. Moreover, in terms of Value, Bitcoin is completely instable as it fluctuates according to supply, demand and trust in the system, while e-money has a direct correspondence in fiat currency. Third, in terms of Production and Identity of the issuer, Bitcoins are produced by mathematics algorithms, generated by a community of developers called "miners", while e-money is digitally issued against the receipt of an equal value of fiat currency, by legally established e-money

²⁷³ European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at: http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

²⁷⁴ G-Cap website, *Bitcoin vs Electronic Money*, available at: <http://www.cgap.org/publications/bitcoin-vs-electronic-money> [Accessed 09 August 2014]

²⁷⁵ G-Cap website, *Bitcoin vs Electronic Money*, available at: <http://www.cgap.org/publications/bitcoin-vs-electronic-money> [Accessed 09 August 2014]

issuer²⁷⁶. In conclusion, the biggest difference states in the regulation of the two: the first is completely independent, while the second is recognized and regulated by a central authority.

2.3.4 Gift cards and vouchers– South American case study

In the last years the e-commerce system has seen an important development of internet start-ups who started designing their own online currency to purchase on their sites, under the form of Gift Cards. This instrument is born as a form of marketing and loyalty scheme, to induce their clients to shop more on their sites and to invite other friends to do the same. Vouchers and gift cards now represent one of the fastest growing market for prepaid cards, since they have become the online payment instruments for minors or unbanked customers²⁷⁷. In fact in the majority of the cases, parents buy these vouchers to allow their children to buy goods, apps, or services on i-Tunes or Amazon or other known e-merchants, without giving them their own credit card details²⁷⁸. Such vouchers and gift cards are very similar to virtual pre-founded cards or to smart cards already analyzed before, however as the European Commission paper is reporting “they are typically obtained as a present or via a third party other than the issuer. In addition, vouchers and gift cards are not always issued on receipt of funds. They may also be acquired by performing certain activities, such as collecting points or bringing in new customers”²⁷⁹

A particular case is represented by the South American e-commerce market, where voucher is the first online payment method used. Because of the high fraud risk,

²⁷⁶ G-Cap website, *Bitcoin vs Electronic Money*, available at: <http://www.cgap.org/publications/bitcoin-vs-electronic-money> [Accessed 09 August 2014]

²⁷⁷ European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at: http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

²⁷⁸ European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at: http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

²⁷⁹ European Commission, May 2011, *Legal analysis of a Single Market for the Information Society*, available at: http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=7022 [Accessed 09 August 2014]

South American online customers avoid using traditional cards and prefer alternative methods such as e-wallets and vouchers²⁸⁰. In the specific, the most known voucher system is Boledò Bancario²⁸¹. The customer prefers this form of payment since he is sure that financial privacy remains fully intact: no personal financial detail is exchanged during the payment. Boledò Bancario is a cash voucher, very easy to use. The merchant website generates a specific voucher for the customer, which is in other terms a financial document that enables the customer to pay for the goods or services requested. The Voucher is then paid in any Bank, both online through the home banking and offline, via an ATM or in the bank office²⁸².

2.3.5 Mobile payment services: SMS based payments, NFC, QR code and Mobile Web Payments (WAP)

As the number of Smartphone is increasing worldwide, all the correlating business show the same increasing trends. As we can see from the following graph, who is reporting the mobile payment trends in the referring period 2012-2017, the m-payment sector has a huge potential with double digits growth rates²⁸³.

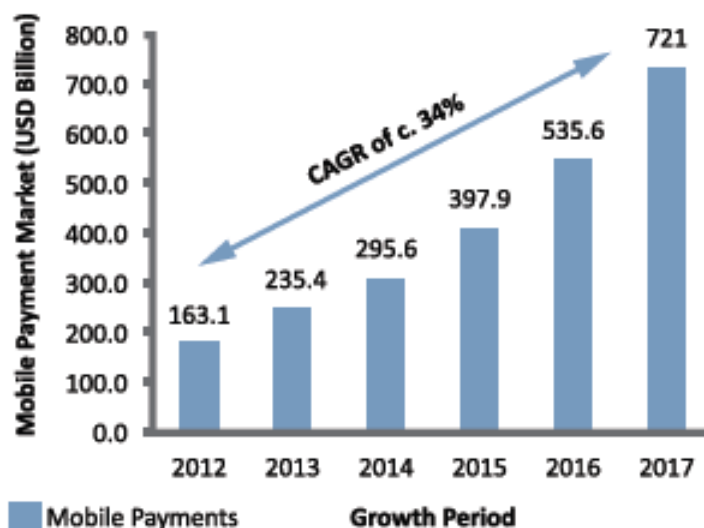
²⁸⁰ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p. 49, available at: <http://www.ecommerce-europe.eu/home> [Accessed 09 August 2014]

²⁸¹ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p. 49, available at: <http://www.ecommerce-europe.eu/home> [Accessed 09 August 2014]

²⁸² Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p. 49, available at: <http://www.ecommerce-europe.eu/home> [Accessed 09 August 2014]

²⁸³ Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.33, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

Figure 2015: Growth of Mobile Payment Transactions - Source Payment eye ²⁸⁴



The highest number of mobile transaction comes from Asia/Pacific, leader in the sector registering in 2012 85 million transactions and Africa is following with 57.8 million²⁸⁵. North America and Europe register lower level of transactions, around respectively 32.8 million and 26.7 million²⁸⁶. The sector is exponentially growing and it is expected to reach USD 721 billion in 2017, driven by many drivers, first of all an increasing Smartphone penetration, whose number is expected to double by 2015; an increase in government and private investments in the sector, who are building infrastructures incentivizing customer and merchant adoption of mobile payments²⁸⁷.

²⁸⁴ Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.33, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

²⁸⁵ Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.7, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

²⁸⁶ Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.7, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

²⁸⁷ Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.7, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

The industry is rapidly evolving, developing different mobile payment method technologies, but it is still very fragmented and at an infancy stage, since local and global technology standards have not been yet defined²⁸⁸. Moreover, according to MPRI, the MasterCard Mobile Payment Readiness Index, the level of consumer readiness in 2012 was still at an average of 33.2 points, still very far from the maturity range of 60-100²⁸⁹. In many countries the consumer readiness is high but since the infrastructure is still weak and poor, the MPRI index is still low as is the case of Kenya. In other region instead, the opposite is true: in Singapore highly advanced infrastructures find a weak consumer readiness. The Index results are in both cases low, for the different reasons already reported.

After having reported a brief photography of the World mobile payment industry, we will now deal with the analysis of the different type of m-payment instruments, to serve the purposes of the analysis. First of all, a clarification of the different categories of mobile payment is necessary since the term “mobile payment” includes many services ,which have in common the use of a phone and the transfer of a certain amount of money, but which are very different in characteristics and application. We can distinguish four main type of services, respectively: Mobile Remote Payment, Mobile Commerce, Mobile Money Transfer and finally the Mobile Proximity Payment²⁹⁰.

The Mobile Remote Payment or MRP includes any type of service that enables the consumer to pay for a good or service via mobile phone. Such services use wireless technology, both Gsm or Umts and the payment is performed via SMS or using optimized web pages²⁹¹. Among the MRP category we could distinguish three

²⁸⁸Innopay, 2012, *Mobile Payment 2013 - changing checkout*, p.9, available at:

<http://www.innopay.com/>

²⁸⁹Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.7, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

²⁹⁰Pagamenti digitali website, *Mobile Payment – le diverse tipologie di servizio*, available at: http://www.pagamentidigitali.it/mobile/171_mobile-payment-le-diverse-tipologie-di-servizio.htm
[Accessed 10 August 2014]

²⁹¹Pagamenti digitali website, *Mobile Payment – le diverse tipologie di servizio*, available at: http://www.pagamentidigitali.it/mobile/171_mobile-payment-le-diverse-tipologie-di-servizio.htm
[Accessed 10 August 2014]

different forms of transaction. The first is the mobile payment platform, which consists in paying the online merchant through internet platforms as PayPal or Serve²⁹². In this case is sufficient acceding at the platform, entering in the account and accepting the payment. The second form of MRP is the Direct carrier billing, who consists in paying for digital contents as games and ringtones charging the phone bill. This form of payment is particularly used in Asia, since 70% of purchased digital contents use the direct carrier billing²⁹³. The last form of MRP is the closed-loop mobile payment, who is a form of e-wallet used to store credit and prepaid cards, issued by a private company, who can be used to pay on the private company's website²⁹⁴.

With Mobile Commerce the paper intends all the services who give the consumer the possibility to conclude via mobile phone many activities of the shopping process. It is a broader definition which includes the navigation on optimized sites for the comparison of prices and products and of course the payment via mobile²⁹⁵.

We should then consider the Mobile Money Transfer, who includes any type of remittance and P2P (person to person) transaction concluded via phone. These services can be either remote transactions using wireless lines or proximity transaction, using in this case Bluetooth technology.

Finally we have the Mobile Proximity Payment, who comprehends any type of transaction via phone in proximity, using different type of technologies, such as NFC Near Field Communication or QR code etc... In these type of transaction, a physical

²⁹² Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.12, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

²⁹³ Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.12, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

²⁹⁴ Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.12, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

²⁹⁵ Pagamenti digitali website, *Mobile Payment – le diverse tipologie di servizio*, available at: http://www.pagamentidigitali.it/mobile/171_mobile-payment-le-diverse-tipologie-di-servizio.htm
[Accessed 10 August 2014]

proximity is necessary with the merchant who is selling the product or service²⁹⁶. Within this category we can identify another particular type of m-payment also known “as the point of sale”²⁹⁷. It consists in the use of the mobile phone as method of acceptance of credit card payments. In this case the mobile phone becomes a device to accept cards and works as a cash register. An example of that is represented by Square or VeriFone²⁹⁸. Therefore in the purpose of our analysis we will not analyze in depth this category of m-payment, since it belongs to the tradition commerce and not to the online world.

After having defined the different categories of m-payments, we will analyze in details the principal type of mobile payment instruments, who support different types of technologies.

The first in analysis is one of the simplest m-payment method: SMS-based payment. The following picture well explains how this payment system works. It is very simple, as the technology underneath. Thanks to this system, the user can settle the payment sending a text message since the payments are debited to the mobile account bill or from a prepaid account²⁹⁹. One of the most successful payment company, who is operating with this technology is M-Pesa, who enables transfer via phone in the all African continent³⁰⁰.

²⁹⁶ Pagamenti digitali website, *Mobile Payment – le diverse tipologie di servizio*, available at: http://www.pagamentidigitali.it/mobile/171_mobile-payment-le-diverse-tipologie-di-servizio.htm [Accessed 10 August 2014]

²⁹⁷ Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.12, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

²⁹⁸ Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.12, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

²⁹⁹ Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.12, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

³⁰⁰ Innopay, 2012, *Mobile Payment 2013 - changing checkout*, p.9, available at: <http://www.innopay.com/>

Figure 161: How SMS Payment works - Source Payment eye³⁰¹



Figure 7 represents how the SMS payment system works. First of all, the user orders the product sending a message, who is transmitted to the merchant via Wireless providers. Then the merchant confirms the order replying to the text message. The user should confirm it and authorize the charges. Once the transaction has been authorized, the goods are delivered to the user. After the delivery the user is billed and subsequently the merchant is paid for the sale³⁰². This system is easy to use and convenient, since it avoids the user to keep cash or plastic cards. On the other side, it can be slow in terms of processing times especially when the connection infrastructures are poor³⁰³.

The second type of m-payment is the NFC-based payment. NFC stands for near field communication, it is a radio based technology, recently applied to mobile phones to perform contactless payments at point of sales and in rare cases, online payments too. This form of technology is in fact mostly used for small transactions, to avoid the use of coins or prepaid cards in physical stores. The radio based technology is embedded in a chip, enabling the device to exchange data over a few centimeters distance³⁰⁴. In

³⁰¹ Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.12, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

³⁰² Innopay, 2012, *Mobile Payment 2013 - changing checkout*, p.9, available at: <http://www.innopay.com/>

³⁰³ Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.13, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

³⁰⁴ Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.13, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

our case, it can be applied to online transactions when and if the pc has a contactless reader, who can detect the payment information transmitted via radio, in the two seconds of swipes of the telephone. In that way, the payment information contained in the phone are used to conclude the purchase. This form of NFC application is very rare, since it is most widely used in physical proximity at specific NFC POS. Moreover, this type of payment system is still at an immature stage: in Italy the first project has been commercially launched few months ago by Vodafone in collaboration with MasterCard and the service provider CartaSi³⁰⁵. In order to pay with NFC technology, it is necessary to have a new generation mobile, who supports the NFC technology, a new generation 4G NFC sim and the Vodafone Smartpass prepaid card³⁰⁶. As any innovative product just launched in the market, it is still at an immature stage as its level of penetration is still low but it has the potentiality to become one of the most used mobile payment method, since it is easy and fast and it could replace the use of coins in daily purchases. On the other side, this system of payment requires the user to have all the necessarily devices, as the NFC mobile and sim. Moreover, many doubts and cultural barriers have to be overcome since the users are afraid of the consequences of a stolen NFC mobile phone³⁰⁷. One last consideration has to be done on this type of technology. Nowadays, NFC payments have been launched in Italy by a mobile operator, Vodafone, since everything is stored in a secure element, an hardware inside the telephone: the 4G NFC Vodafone sim. In the future, NFC payments could be performed also through a cloud based system, also known as HCE - Host Card Emulation³⁰⁸. In the specific, the Card data would not be stored in the hardware inside the telephone, but they will be stored

³⁰⁵ Wired, 8 April 2014, *Pagamenti, gli italiani preferiscono i contanti*, available at: <http://www.wired.it/mobile/smartphone/2014/04/08/pagamenti-italiani-preferiscono-contanti/> [Accessed 10 August 2014]

³⁰⁶ Wired, 8 April 2014, *Pagamenti, gli italiani preferiscono i contanti*, available at: <http://www.wired.it/mobile/smartphone/2014/04/08/pagamenti-italiani-preferiscono-contanti/> [Accessed 10 August 2014]

³⁰⁷ Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.13, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

³⁰⁸ Wired, 8 April 2014, *Pagamenti, gli italiani preferiscono i contanti*, available at: <http://www.wired.it/mobile/smartphone/2014/04/08/pagamenti-italiani-preferiscono-contanti/> [Accessed 10 August 2014]

virtually, “on a cloud system”. This new form of technology really scares the Mobile Network Operators, since they will be indispensable no more in the NFC business. For the moment HCE is just a possibility and a rumor in the Italian market, since we are still at an early and immature stage for what concerns the NFC adoption.

Another form of mobile payment, who can be used both in proximity and remote, is the QR code payment. QR code payments are made by scanning a barcode, read through a mobile application. In this case, in order to perform the payment via QR code, the telephone needs to have a camera, to read the code and the mobile app specific for QR codes, who can be easily downloaded. One pro of this form of payment is that the compatible technology is already well widespread, since almost everyone has a Smartphone today, differently to the NFC technology. Moreover, this form of payment is easy to perform, since it is sufficient for the user to scan the barcode and accept the amount. Finally it could view the web page after payment³⁰⁹.

Finally, the last form of mobile payment to consider is the Mobile Web payments based on WAP technology. WAP stands for wireless application protocol, which is used to access the websites and performs the traditional e-commerce transactions. WAP enables the user to brows from its mobile phone, acceding on optimized websites as in this case they will appear formatted for a smaller screen³¹⁰. The purchase is made directly from the merchant’s website, inserting the card’s data, or acceding at the user’s mobile wallet or via a wireless account³¹¹. The payment data are then transmitted to the merchant via the WAP system. This type of payment is reliable and permits the user to bookmark the pages that he wish to access later, after

³⁰⁹ Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.13, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

³¹⁰ Innopay, 2012, *Mobile Payment 2013 - changing checkout*, p.9, available at: <http://www.innopay.com/>

³¹¹ Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.13, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

sale. The main cons of this payment instrument is the security concern, since it is slow and not highly secure if compared to the other payment methods³¹².

2.4 The online payment method dilemma: easiness of use against the security concern

With the increasing number of online transactions, an increase in online fraud has been registered too. The following paragraph will look more in depth the security issue, for any type of payment already analyzed in the precedent paragraphs.

One of the most critical factor of success for an online payment method consists in the correct balance between easiness of use and security. First of all a payment method, in order to reach a good customer base with high level of penetration, it has to be convenient. It has to be easy to use and accessible for the customer. On the other side a payment instrument, in order to be easy, convenient with a user friendly experience, it skips many security steps and passages, necessary to check the absence of any potential threat. The result of a scrupulous check is a slow transaction with multiple request of identification and access on the customer side, to scam any theft or unauthorized use of the instrument. A super secure payment method, very complex in its elaboration, would not be used by online users, while on the other side, a simple but insecure payment method will scary its users and will be abandon by the majority of the online population. Under this perspective, we will analyze the different payment methods and we will present in the following Chapter, the e-wallet payment instrument. The latter is born with the necessity of solving the dilemma of combining high security standard with a user friendly experience.

There are mainly two systems for transaction security: SSL and SET³¹³. The first one is the Secure Socket Layer, which is a security service system used worldwide³¹⁴. It

³¹² Payment eye, 2012, *The changing face of Mobile Payments – an overview of the mobile revolution*, p.13, available at: <http://www.paymenteye.com/wp-content/uploads/sites/19/2014/03/PaymentEye-Changing-Face-of-Mobile-Payments2.pdf>

³¹³ Z.Bareisis, Feb 2013, *Managing Digital Payment Risks – a regulatory perspective*, Celent, Oliver Wyman, available at:

has become a sign of recognition for online consumers since it is a guaranty of integrity of the e-merchant. It is an important measure to establish trust between the seller and the buyer in a world made of distant transaction as the online one, where certifications are the basis for trust. The merchants who have adopted this security standard have the SSL server certificate, who is certainty of quality for the consumer. SSL consists in the encryption of the data who are transferred among the buyer and seller³¹⁵. Since in the majority of the cases these data are sensitive information, as the personal details of the online customer or the customer's card data, it becomes fundamental to guarantee the protection of the latter. In SSL data are transferred between an internet browser and the server in total security, since they are encrypted and then decrypted by the receiving part. This security system has become widely accepted for its easiness of use, moreover it can be implemented in any PC, since it does not place excessive demand on the PC. The number of secured server is increasing every year, making the entire Internet system certified and more secured. On the other side, such security system only works on fixed networks, meaning that it cannot be implemented on the mobile world, who is in rapid expansion. Nowadays, seen the increasing mobile market, SSL services for wireless devices has been developed too³¹⁶.

The other security system to analyze is SET – Secure Electronic Transaction which is an alternative more complex security system. SET is based on digital certificates and signatures and due to its complexity, it is highly more secure than SSL, but less used and widespread, as for the online payment method dilemma³¹⁷.

Even thou there is a large range of payment systems, we have seen from our latter analysis how credit cards dominate the online payment world and on the security system side, the SSL system. Moreover since credit cards were not conceived to

³¹⁴ OECD, 2004, *Online Payment Systems*, available at:
<http://www.oecd.org/internet/ieconomy/36736056.pdf> [Accessed 12 August 2014]

³¹⁵ OECD, 2004, *Online Payment Systems*, available at:
<http://www.oecd.org/internet/ieconomy/36736056.pdf> [Accessed 12 August 2014]

³¹⁶ OECD, 2004, *Online Payment Systems*, available at:
<http://www.oecd.org/internet/ieconomy/36736056.pdf> [Accessed 12 August 2014]

³¹⁷ OECD, 2004, *Online Payment Systems*, available at:
<http://www.oecd.org/internet/ieconomy/36736056.pdf> [Accessed 12 August 2014]

work on the online payment systems, they had to face many problems on the security side. First of all, the cardholder identification was simply made through the provision of personal details of the cardholder, without asking for further identification³¹⁸. This system gives enormous possibilities for thieves since it is impossible for the merchant to distinguish an unauthorized user from the legitimate one³¹⁹. Moreover, the cardholder's details and card number can be intercepted and used for other unauthorized transactions. SSL system now provides protection of the data during transmission but still much has to be done on the storage. In reality, the main vulnerability of dealing with credit cards number is the storage. The storage of credit card numbers in the merchants database is really a risky practice, since merchants usually use database (who are accessible to customer) or web servers³²⁰. In both cases the security standards are very low.

In the last decade "Credit Card companies have taken numerous steps to address the security concerns and a number of complementary systems have been developed" is what reports the OECD paper³²¹. Visa and later MasterCard have developed a security system who enhance the cardholder protection and verification. The Technology underneath is known as 3DS or 3D Secure³²². The same technology has been renamed by the two companies respectively "Verified by Visa" and MasterCard SecureCode. Both of them protect their credit card transactions with a password, chosen by the user, who has to be inserted at any transaction, any time the user wants to finalize an online purchase³²³.

On the mobile payment side, still much has to be done on the security side. One big step was represented by the availability of the SSL system on wireless devices. On

³¹⁸ OECD, 2004, *Online Payment Systems*, available at:

<http://www.oecd.org/internet/ieconomy/36736056.pdf> [Accessed 12 August 2014]

³¹⁹ S. Garfinkel and G. Spafford, *Payments on Internet- Introduction to e-commerce: electronic payment systems*, Chapter 25

³²⁰ S. Garfinkel and G. Spafford, *Payments on Internet- Introduction to e-commerce: electronic payment systems*, Chapter 25

³²¹ OECD, 2004, *Online Payment Systems*, available at:

<http://www.oecd.org/internet/ieconomy/36736056.pdf> [Accessed 12 August 2014]

³²² OECD, 2004, *Online Payment Systems*, available at:

<http://www.oecd.org/internet/ieconomy/36736056.pdf> [Accessed 12 August 2014]

³²³ S. Garfinkel and G. Spafford, *Payments on Internet- Introduction to e-commerce: electronic payment systems*, Chapter 25

the other side, an higher level of user identification is available, represented by SIM and PIN. Moreover nowadays the connection between the handset and the BTS, the base transceiver station has been encrypted. Finally, for what concerns the payments via online banking, banks strict authentication measures are applied, who represent a level of security who goes beyond the standards.

Chapter 3: A new form of electronic payment, “the e-wallet” - Case study: The launch of MasterCard e-wallet in Italy

The following chapter will analyze more in depth a specific form of electronic payment: “the e-wallet”. This innovative instrument is born as answer to new e-world necessities, expressed both on the merchant and consumer side³²⁴. Merchants were requiring lower payment processing fees, as lower shopping cart abandonment rates while consumers need to shop anywhere, anytime with a secure and simple shopping experience³²⁵. Those who managed to answer those requests are alternative online payment platforms who are gaining market share to the detriment of the traditional player of the payment industry³²⁶. Among the winners many e-colossus such as PayPal, Amazon, Google etc... who have exploited two factors, main drivers of their exponential growth: lower costs for merchants and the promise to consumers of “everywhere commerce” for online payments³²⁷. The latter consists in the possibility for the consumer to checkout anywhere from any device just using a username and password.

The following chapter will first of all provide a clearer definition of what is intended with “e-wallet”. Then we will analyze the e-wallet success cases, trying to define the common features of success. In this specific part a consideration on the two main approach and point of views regarding the e-wallet future will be presented. Finally, in the second part of the chapter we will look more in depth at the Italian case, in specific the launch of MasterCard e-wallet in the market. MasterPass’ value proposition will be presented and analyzed comparing with its competitors in the Italian landscape.

³²⁴ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.13, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 August 2014]

³²⁵ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.13, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 August 2014]

³²⁶ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.13, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 August 2014]

³²⁷ Innopay, May 2012, *Online Payments 2012 – Moving beyond the web*, E-commerce Europe, p.13, available at: <http://www.ecommerce-europe.eu/home> [Accessed 17 August 2014]

3.1 “The e-wallet”, two opposite perspectives on the future of the industry

When talking about “e-wallet”, a slight distinction has to be made between digital wallets and mobile wallets. Prints and papers are talking much in the last years about “e-wallets”, most of the time referring to mobile wallets, since their attention has been concentrated to the mobile industry, who has registered the highest growth rates in the last decade. According to the European Payment Council, “a digital wallet is a service allowing the wallet holder to securely access manage and use identification and payment instruments in order to initiate payments. The service may reside on a device owned by the holder as for example a mobile phone or a PC or may be remotely hosted on a server, but it is anyway under the control of the holder”³²⁸. According to the latter definition, a digital wallet is an electronic instrument who contains all the payment information, couponing and loyalty cards and other sensible data of the holder on a digital format, eliminating the need for physical and tangible wallet in our pocket³²⁹. On the other side a mobile wallet is the following service, performed via mobile phone. Carlise & Gallagher Consulting Group is reporting in its study, the following definition of mobile wallet: “A mobile wallet stores your major credit cards, debit cards, prepaid cards, gift cards or vouchers (including coupon and loyalty programs) in your smartphone or tablet and can be organized using a payment application. Through this application you would be able to view and choose the method of payment for a transaction”³³⁰. Looking at the two definition just reported, no difference seems appear between digital wallets and mobile wallets. Actually the

³²⁸ European Payment Council- EPC, 21 January 2014, *Mobile Wallet Payments*, White Paper EPC 163-13, Brussels, available at: <http://www.europeanpaymentscouncil.eu/index.cfm/knowledge-bank/epc-documents/epc-white-paper-mobile-wallet-payments-and-feedback-questionnaire/epc163-13-v20-white-paper-mobile-wallet-payments/>

³²⁹ R.Gilman, June 2011, *Exploding e-wallet – new technology eliminates credit cards and cash*, Agency Technology

³³⁰ Carlise & Gallagher Consulting Group, 2013, *Mobile Wallet Reality Check: How will you sty top of Wallet? – A CG Study finds banks at risk of losing market share as new mobile wallet competitors emerge*, available at: https://www.cgcginc.com/sites/default/files/pdf/CG_Research_Paper_Mobile_Wallet_072512.pdf

difference exists (apart from the device used to accede the wallet) when dealing with the offline world. In fact the substantial differentiation consists in the performance of proximity payments or in-store payments, performed using the cards stored in the m-wallet via the NFC technology, as it has been already introduced in the chapter two of the paper. In line with the purpose of the analysis, we will analyze digital payments as an alternative instrument to perform online payments, disregarding the offline world who would require a specific analysis by itself. The paper has the focus of its analysis on the e-commerce world and its payment instruments, specifically on a particular form of online payment: “the digital wallet MasterPass by MasterCard”. The latter has been launched in the Italian market in the first quarter of 2014 as e-wallet and m-wallet, since the service is suitable on any mobile device. Under our perspective we will consider the mobile wallet as the definition of Carlise & Callagher precedent reported; in this sense it would be more correct to consider the mobile wallet a branch or a subtype of the broadest category of digital wallet. After having clarified the differences in definition, it is important to see what are the perspectives and the global players in the industry, who represents success cases in the online payment landscape.

When talking about digital wallet industry’s future and perspective, the experts are divided in two fronts, carrying two opposite point of views: those who think that “e-wallets” are dead versus the optimistic front who believes that the future of online payments relies in digital wallets³³¹. The first category support its theory on the complexity of the system to build in order to have chance of success in such business. Considering that credit cards are the most used online payment instruments and it has taken more or less fifty years to take over, they consider it a sign of a specific characteristic of the online payment world: innovative on the offer side and conservative on the demand one³³². An evidence of that comes from a quick self

³³¹ Karen Webster, June 2014, *Are the Best Days over for Digital Wallets?*, available at: http://www.pymnts.com/news/2014/are-the-best-days-over-for-digital-wallets/#.U_DS6_I_ve8 [Accessed 21 August 2014]

³³² Karen Webster, June 2014, *Are the Best Days over for Digital Wallets?*, available at: http://www.pymnts.com/news/2014/are-the-best-days-over-for-digital-wallets/#.U_DS6_I_ve8 [Accessed 21 August 2014]

analysis at the light of chapter two of the following paper. Chapter two has revealed how many different types of online payment instruments exists, different to the traditional systems as credit, debit, prepaid cards or the use of the online banking. As consumer, most of these instruments were unknown for me or in other cases I never had the occasion to use them. This is because the majority of them is still referring to a niche clientele, with a very narrow customer base. As consequence, the negative front consider “the e-wallet case” just another case of innovative online payment method, difficult to widespread and to reach a critical customer base³³³. In addition to that, they also argue that it is even more complicated to take the e-wallet’s services offline, reporting all the NFC’s technologies problems and difficulties, already quoted in chapter two³³⁴. Finally, after having convinced the consumer to adopt this new form of payment, the other big difficulty is to create a sustainable network of merchants who accept this new digital product³³⁵. In fact the problem of making new technology rise up, depends also on the acceptance side: without a critical number of merchants who accept this new form of payment, the new instrument will be completely useless. In this critical work made of balances, timings are essentials: the instrument will have to reach a critical mass on both sides at the same time. Networks have work hard to make that happened, but if we consider also the fact that most of the time they have to operate through other third parties, to reach consumers and merchants at the same time, the project becomes impossible³³⁶.

³³³ R.Gilman, June 2011, *Exploding e-wallet – new technology eliminates credit cards and cash*, Agency Technology

³³⁴ Karen Webster, June 2014, *Are the Best Days over for Digital Wallets?*, available at: http://www.pymnts.com/news/2014/are-the-best-days-over-for-digital-wallets/#.U_DS6_I_ve8 [Accessed 21 August 2014]

³³⁵ Karen Webster, June 2014, *Are the Best Days over for Digital Wallets?*, available at: http://www.pymnts.com/news/2014/are-the-best-days-over-for-digital-wallets/#.U_DS6_I_ve8 [Accessed 21 August 2014]

³³⁶ Karen Webster, June 2014, *Are the Best Days over for Digital Wallets?*, available at: http://www.pymnts.com/news/2014/are-the-best-days-over-for-digital-wallets/#.U_DS6_I_ve8 [Accessed 21 August 2014]

On the contrary, the optimistic point of view considers “the e-wallet industry” the future of online payments³³⁷. According to the blog, who reported some sentences of a study on the sector whose title is “E-wallet to equal cards as most popular online payment option by 2017”, e-wallets will reach “41% share of the overall online payment market by 2017, while all the alternative online payment methods will account for 59% of all transactions in the same year”³³⁸. In defense of such prognostics, the optimistic side reports as example many cases of “e-wallet success”. According to Webster’s article, some of these names are: “AliPay, PayPal, LevelUp, Apple, Starbucks and Amazon”³³⁹. To understand what is the common denominators of these success cases, first of all it is important to understand what are the critical success factors in the e-commerce payment industry³⁴⁰. The success of e-commerce businesses, from the largest to the smallest one, depend on the online payment system; for this reason it is fundamental to understand the various factors who determine the success or failure of a payment system and consequently of the correlated e-commerce business³⁴¹. As the pessimistic point of view is reporting as argument, the online payment business is a very complicated and difficult industry, since it is characterized by high barriers to entry and the necessity to build simultaneously a critical acceptance on both sides: consumer and merchant side³⁴². The result is a notorious difficulty to introduce new payment products. A good

³³⁷ Himedia Group, February 2014, *E-wallet will equal cards as most popular online payment option by 2017*, available at: <http://blog.himediagroup.com/e-wallets-will-equal-cards-as-the-most-popular-payment-method-globally/> [Accessed 21 August 2014]

³³⁸ Himedia Group, February 2014, *E-wallet will equal cards as most popular online payment option by 2017*, available at: <http://blog.himediagroup.com/e-wallets-will-equal-cards-as-the-most-popular-payment-method-globally/> [Accessed 21 August 2014]

³³⁹ Karen Webster, June 2014, *Are the Best Days over for Digital Wallets?*, available at: http://www.pymnts.com/news/2014/are-the-best-days-over-for-digital-wallets/#.U_DS6_I_ve8 [Accessed 21 August 2014]

³⁴⁰ S.Sumanjeet, 2009, *Emergence of Payment systems in the age of electronic commerce: the state of art*, Asia Pacific Journal of Finance and Banking Research Vol. 3 No. 3, University of Delhi, India, p.18, available at: <http://globip.com/articles/asiapacific-vol3-article2.pdf>

³⁴¹ S.Sumanjeet, 2009, *Emergence of Payment systems in the age of electronic commerce: the state of art*, Asia Pacific Journal of Finance and Banking Research Vol. 3 No. 3, University of Delhi, India, p.18, available at: <http://globip.com/articles/asiapacific-vol3-article2.pdf>

³⁴² S.Sumanjeet, 2009, *Emergence of Payment systems in the age of electronic commerce: the state of art*, Asia Pacific Journal of Finance and Banking Research Vol. 3 No. 3, University of Delhi, India, p.18, available at: <http://globip.com/articles/asiapacific-vol3-article2.pdf>

payment system should consider the main obstacles for the consumer adoption, in order to build a strong value proposition and to gain acceptance. It should be safe, since 70% of the online consumer consider the “security concern” the main obstacle to online payment instrument acceptance³⁴³. Moreover, the second obstacle to consider in order of importance is the “difficulty to enter information”. 9% of online consumers quoted as fundamental the easiness of use of an online payment instrument³⁴⁴. In addition to these factors, to succeed, a new online payment product should be “low margin to compete, high volume to build critical mass and be profitable, receive favorable press treatment, be well branded to gain customer confidence, achieve rapid uptake and be different to check and credit card so that consumer and merchants find reasons to prefer and use them”³⁴⁵. From Sumajeet study we can outline how convenience, trust to the system and security are the three principal drivers to adoption of a new e-commerce payment system. These three main pillars comprehend other subcategory, which can be considered the true factors of success of an online payment system: integrity, non-repudiation, authentication, authorization, confidentiality and reliability. First of all, with integrity, the paper intends the ability to transmit and receive transaction data unchanged. Secondly, the transaction should not be denied and should release a receipt of the authorization (non-repudiation characteristic). Third in appearance, the authentication quality which consists in the quality of authentication of the user: identities of the parties should be established at some tolerable risk. After having identified the user, the system should also have a good quality of authorization system which identifies the individuals entitled to receive or send or view the transaction (authorization quality). Finally, a good online payment system should have a good level of security measures intended to maintain the data confidential (the transaction data should be view just by those who are authorized) and a good level of reliability. A good payment system

³⁴³ S.Sumanjeet, 2009, *Emergence of Payment systems in the age of electronic commerce: the state of art*, Asia Pacific Journal of Finance and Banking Research Vol. 3 No. 3, University of Delhi, India, p.18, available at: <http://globip.com/articles/asiapacific-vol3-article2.pdf>

³⁴⁴ S.Sumanjeet, 2009, *Emergence of Payment systems in the age of electronic commerce: the state of art*, Asia Pacific Journal of Finance and Banking Research Vol. 3 No. 3, University of Delhi, India, p.18, available at: <http://globip.com/articles/asiapacific-vol3-article2.pdf>

³⁴⁵ S.Sumanjeet, 2009, *Emergence of Payment systems in the age of electronic commerce: the state of art*, Asia Pacific Journal of Finance and Banking Research Vol. 3 No. 3, University of Delhi, India, p.18, available at: <http://globip.com/articles/asiapacific-vol3-article2.pdf>

should have a very low rate of probability of failure. In this way the system will gain the confidence of consumers, who will rely more and more on this online instrument, until it becomes part of the consumer's habits.

After having analyzed what are the main factor of success for an online payment method, in line with the purposes of our analysis it is fundamental to ask: which of these characteristics does “the e-wallet” comprehend? As previously seen, the main factors of success can be included in three pillars: convenience, trust and security. Digital wallets were born with the necessity of making online purchases easier for their customer. In this sense, the first pillar inspired the creation of this new form of payment³⁴⁶. Consumers benefits from “the e-wallet” on multiple ways: this system enables them to perform online payments without the necessity of inserting payment information anytime; it stores shipping information to speed and simplify the checkout process. On the easiness of use side, it really benefits consumer who can checkout anytime anywhere from any device thanks to this system. Avoiding the repetition of payment information, checkout can be performed even on the go, via mobile. This is highly valuable for consumers who are requiring more and more to perform anything from their mobile devices³⁴⁷. Merchants on their side can benefits from increasing volumes and reduced cart abandon due to complicated checkout experiences³⁴⁸. For what concerns the other two pillars, which are in some way correlated and connected, it depends on the wallet owner and provider. The creditability and trust depends on the company's reputation who is offering the service while the security issue depends on the technology and the layers of security employed³⁴⁹. It is usually a decision of the company who is providing the service, since as we have already introduced in chapter two, it became a strategic choice: enhance security or pushing a much friendly customer experience?

³⁴⁶ G.Fox, *Using smartphones as digital wallets*, available at: http://www.infomall.org/I399-12/Collection/2012/Group5_finalpaper.pdf [Accessed 22 August 2014]

³⁴⁷ G.Fox, *Using smartphones as digital wallets*, available at: http://www.infomall.org/I399-12/Collection/2012/Group5_finalpaper.pdf [Accessed 22 August 2014]

³⁴⁸ G.Fox, *Using smartphones as digital wallets*, available at: http://www.infomall.org/I399-12/Collection/2012/Group5_finalpaper.pdf [Accessed 22 August 2014]

³⁴⁹ G.Fox, *Using smartphones as digital wallets*, available at: http://www.infomall.org/I399-12/Collection/2012/Group5_finalpaper.pdf [Accessed 22 August 2014]

According to the analysis just performed, e-wallet's proposition mirrors perfectly the brand new online customer's necessities, satisfying all the factors of success for an online payment system. This is one of the arguments reported by whom who believe that digital wallet will be the future of online payments. The other strong argument is represented by the success cases already named before, who are a sign that the digital wallet moment is coming³⁵⁰. If we think of PayPal, Apple or Amazon, who already have millions of active users, maybe it should be more appropriate saying that the momentum for e-wallet already came. These actors have common features who permitted them to get millions of consumers in the habits of using their digital wallets to pay for things: which represents the real critical differentiation and the highest barrier to entry for new players to overcome³⁵¹. The first common denominator among these e-giants is represented by a direct access to consumers and merchants. A direct access means first of all no need for an intermediary and consequently a closer control on consumer-merchant relationship³⁵². Moreover, this also means that there were no intermediate actor to convince to carry a particular wallet or payment method. As is the case of Amazon or Apple, the wallet provider coincides with the merchant, or as is the case of PayPal, it is a parent company who owns the merchant (e-Bay)³⁵³. The receipt of success of the e-giants is in conclusion a combination of three actions, carried on simultaneously: they were acquiring more consumer accounts, providing them online merchants where to use those wallets; they made these online marketplaces more attractive with online promotions, discounts and effective delivery services and as third point, after having reached a

³⁵⁰ Karen Webster, June 2014, *Are the Best Days over for Digital Wallets?*, available at: http://www.pymnts.com/news/2014/are-the-best-days-over-for-digital-wallets/#.U_DS6_I_ve8 [Accessed 21 August 2014]

³⁵¹ Karen Webster, June 2014, *Are the Best Days over for Digital Wallets?*, available at: http://www.pymnts.com/news/2014/are-the-best-days-over-for-digital-wallets/#.U_DS6_I_ve8 [Accessed 21 August 2014]

³⁵² Karen Webster, June 2014, *Are the Best Days over for Digital Wallets?*, available at: http://www.pymnts.com/news/2014/are-the-best-days-over-for-digital-wallets/#.U_DS6_I_ve8 [Accessed 21 August 2014]

³⁵³ Karen Webster, June 2014, *Are the Best Days over for Digital Wallets?*, available at: http://www.pymnts.com/news/2014/are-the-best-days-over-for-digital-wallets/#.U_DS6_I_ve8 [Accessed 21 August 2014]

critical mass of users, their contractual force made them possible to convince third parties and actors to collaborate for an effective e-wallet system³⁵⁴.

In conclusion, this new form of online payment can involve millions of active users and made the success of an e-commerce company. This industry is far away from dead. It has just started and it shows great potential in terms of future revenues. On the other side it is also true that “no one can do it”. The industry is difficult to operate, it has high barriers to entry, it requires high contractual force and a direct access to consumers and merchants, typical of the colossus of e-commerce. Moreover it will take many time before this form of payment will replace any physical form of payment even in the offline world. Patience and time will be required to change the consumer habits and to see “the e-wallet” became the most preferred online payment method worldwide.

³⁵⁴ Karen Webster, June 2014, *Are the Best Days over for Digital Wallets?*, available at: http://www.pymnts.com/news/2014/are-the-best-days-over-for-digital-wallets/#.U_DS6_I_ve8 [Accessed 21 August 2014]

3.2 “The e-wallet”, a snapshot of the current situation worldwide

In the following paragraph we will report “the e-wallet” current situation worldwide, the level of development of the industry and the main customer’s necessities emerged from the study conducted by Carlise &Callagher Consulting Group, based on 36 questions posed on 605 U.S. consumers³⁵⁵.

The study reveals an increasing demand worldwide for e-wallet: 48% of survey participants are interested in this online instrument. The interest on mobile wallets is particularly intense toward younger age group (between 18 and 50 years old) with an high income level, near USD 50000 per year (affluent consumers)³⁵⁶. The same study is reporting the following sentences on the mobile payments market (among these the offline payments via mobile who should not be considered in the purposes of our analysis): “the mobile payments market is potentially enormous and has been capturing an increasing share of the overall non-cash payment market; the value of the U.S. non cash payments market (comprised of credit card, debit card, check and ACH) has been estimated at over USD 73 trillion for 2012”³⁵⁷. The study is particularly focused on mobile wallet, and as we have already specified, it is just a branch of digital wallet: the same services performed online and offline via mobile phone. The offline world is not considered in the scope of our analysis, but it surely represents an important slice of the high potentiality of the mobile wallet world. It is

³⁵⁵ Carlise & Gallagher Consulting Group, 2013, *Mobile Wallet Reality Check: How will you sty top of Wallet? – A CG Study finds banks at risk of losing market share as new mobile wallet competitors emerge*, available at:

https://www.cgcginc.com/sites/default/files/pdf/CG_Research_Paper_Mobile_Wallet_072512.pdf

³⁵⁶ Carlise & Gallagher Consulting Group, 2013, *Mobile Wallet Reality Check: How will you sty top of Wallet? – A CG Study finds banks at risk of losing market share as new mobile wallet competitors emerge*, available at:

https://www.cgcginc.com/sites/default/files/pdf/CG_Research_Paper_Mobile_Wallet_072512.pdf

³⁵⁷ Carlise & Gallagher Consulting Group, 2013, *Mobile Wallet Reality Check: How will you sty top of Wallet? – A CG Study finds banks at risk of losing market share as new mobile wallet competitors emerge*, available at:

https://www.cgcginc.com/sites/default/files/pdf/CG_Research_Paper_Mobile_Wallet_072512.pdf

important in this sense, to understand that the industry has captured the interest of many actors, who are investing in the field, each of them to assure themselves a slice of the potentially big cake of revenues produced by “the e-wallet” industry³⁵⁸. Banks, network operators, merchants, OTT, Telco, are all potential or actual issuers of e-wallet solutions. In this scenario a real war has been initiated among these actors, who are all fighting to gain market share via different strategies, who will be better analyzed in the following paragraphs of the chapter.

On the consumer side, the study has revealed a paradox, from which is born “the e-wallet” demand. Consumers today can enjoy a great variety of offers related to payment experience³⁵⁹. The survey has revealed that the most frustrating issue related to the use of credit, debit or loyalty cards is the inability of managing all these offers in the best way. Consumers are nowadays overwhelmed by offers, very valuable for the consumers. The latter, if not managed in the best way can cause frustration in the user, who feels to miss some convenience, misusing his online payment methods.

“The e-wallet” simplifies and optimize the use of different payment instruments, making the user exploit the best offer and incentive available anytime: it helps consumer to make better payment choices, maximizing loyalty programs and minimizing the costs.

³⁵⁸ Carlise & Gallagher Consulting Group, 2013, *Mobile Wallet Reality Check: How will you sty top of Wallet? – A CG Study finds banks at risk of losing market share as new mobile wallet competitors emerge*, available at:

https://www.cgcginc.com/sites/default/files/pdf/CG_Research_Paper_Mobile_Wallet_072512.pdf

³⁵⁹ Carlise & Gallagher Consulting Group, 2013, *Mobile Wallet Reality Check: How will you sty top of Wallet? – A CG Study finds banks at risk of losing market share as new mobile wallet competitors emerge*, available at:

https://www.cgcginc.com/sites/default/files/pdf/CG_Research_Paper_Mobile_Wallet_072512.pdf

3.3 MasterPass case study- the launch of MasterCard wallet in Italy

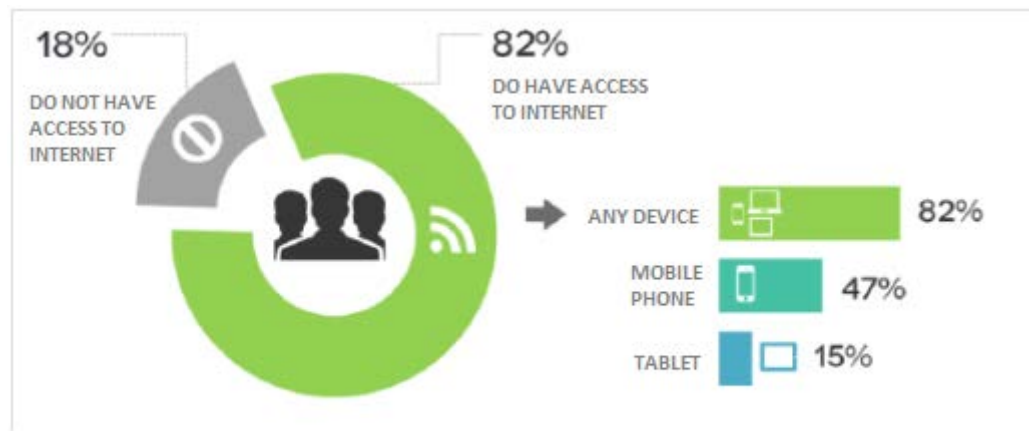
The following part of the chapter is focused on the case study MasterPass, one of the latest product launched by the network operator MasterCard. The second part of the chapter will first of all present the Italian market, the possibilities, trend and opportunities who made MasterCard take the decision to launch its digital wallet in the market. At the light of the market analysis and opportunity assessment, we will then present MasterPass value proposition, its future characteristics and the way this product has been adapted to the following market. Finally, we will compare the MasterCard wallet with the other offers in the market, its competitors and all the actors of the just started “Wallet War”.

3.3.1 The Italian Market – opportunity assessment and MasterPass’ value proposition

We have already drawn a general overview of the Italian e-commerce situation in the first chapter of the paper. Growing revenues, positive growth rates and an increasing number of e-shoppers. Important to consider is also another trend, who will change the Italian e/m-commerce industry in the next years: the “everywhere commerce”. As the following graph taken from Casaleggio study is revealing, 82% of Italians have access to Internet from any device³⁶⁰. Netcomm’s report underlines the importance of convergence too, intended as the integration of the offline and online world and consequently as an integration of a service on every device.

³⁶⁰ Casaleggio Associati, *E-commerce in Italia - Italiani connessi a Internet*, available at: <http://www.casaleggio.it//e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

Figure 22: Internet access in Italy - Source: Casaleggio associati³⁶¹



This gave birth to the a new necessity, better known as “everywhere commerce” or as convergence.

To draw an assessment analysis of the Italian market, we should furthermore consider the perspective of investments of the actors operating in the industry. Understanding where e-commerce companies will invest in the short term, shows us the direction that will take the industry and a clear pictures of the most valuables sectors to develop. The 21% of private companies interview in the Casaleggio study revealed an intention to push and improve the customer experience, perceive more and more as a fundamental factor and driver of revenues³⁶². We should then expect an enhancement of the customer experience on any mobile application, online service or websites in the next years, since it is considered a major driver of revenues by the industry’s operators.

For what concerns the conversion rate in Italy, it is near 2% for 2014, meaning that just 2 over 100 e-costumers entering the e-commerce website, finalize the purchase. This parameter gives an insight on the biggest obstacles to the e-sale which prevent

³⁶¹ Casaleggio Associati, *E-commerce in Italia - Italiani connessi a Internet*, available at: <http://www.casaleggio.it//e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

³⁶² Casaleggio Associati, 2013, *E-commerce in Italia*, available at: <http://www.casaleggio.it//e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

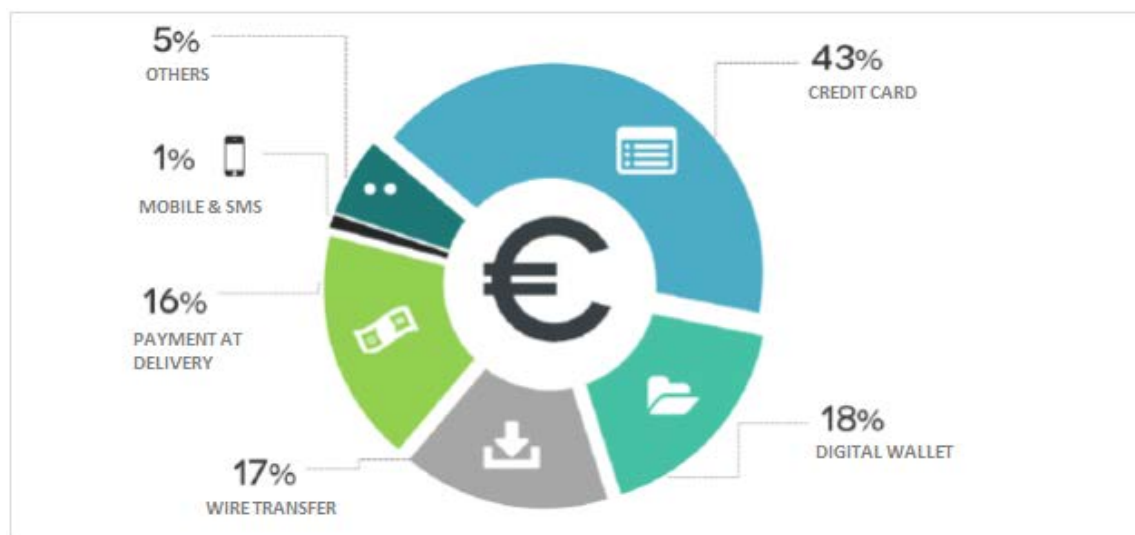
the customer to finalize the purchase. Among the principal inhibitor factors, there is the trust and security concern. In fact 20% of companies consider the low level of trust on the online payment system the biggest inhibitor to conversion³⁶³. This is surely a sign of lack of trust of the Italian e-shoppers regarding the present payment providers. The latter represents a big possibility for a player as MasterCard who is already known and appreciated in Italy for a correlated business, where it carries an excellent reputation and a strong brand. Moreover, considering the positive trend of e-commerce revenues and the three digit growth rates registered in the last years for what concern the m-commerce (+255% in 2012), the Italian market appears attractive, with a big potential to exploit.

Finally, another opportunity to consider emerges from the analysis of the Italian online payment system. The following graph, taken from Casaleggio Associati report, clearly represents the most used online payment methods in Italy³⁶⁴.

³⁶³ Casaleggio Associati, 2013, *E-commerce in Italia*, available at: <http://www.casaleggio.it/e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

³⁶⁴ Casaleggio Associati, 2013, *E-commerce in Italia*, available at: <http://www.casaleggio.it/e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

Figure 173: Most used online payment methods in Italy - Source: Casaleggio Associati³⁶⁵



Credit Card still represents the most used online payment method in Italy. The same is true in the other regions of the world, as we have already discussed in the precedent chapters of the paper. In the specific, in our peninsula 43% of total online purchases are conducted inserting the credit card details in the online page of the merchant's website³⁶⁶. This percentage has experimented a strong reduction, if compared to 2013, when it represented the 70% of the total³⁶⁷. One of the cause of the latter reduction can be attributed to the entrance of new forms of online payment, as the e-wallet case, who is gaining market share at detriment of these traditional sectors. A confirm of that comes from PayPal, who has increased its share, gaining 18% in 2014, 6% more than 2013 level³⁶⁸. The biggest increase has to be attributed to the bank transfer segment, who gained 17% of market share in 2014, a big jump if

³⁶⁵ Casaleggio Associati, 2013, *E-commerce in Italia*, available at: <http://www.casaleggio.it//e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

³⁶⁶ Casaleggio Associati, 2013, *E-commerce in Italia*, available at: <http://www.casaleggio.it//e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

³⁶⁷ Casaleggio Associati, 2013, *E-commerce in Italia*, available at: <http://www.casaleggio.it//e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

³⁶⁸ Casaleggio Associati, 2013, *E-commerce in Italia*, available at: <http://www.casaleggio.it//e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

compared to 2013 level, when it represented just the 6%³⁶⁹. The merit of such success has to be recognized to the new revolutionary wire transfer system, My Bank, with its simple customer experience and its pan-European approach³⁷⁰. For what concerns the COD system, cash at delivery, it still has 16% of the market³⁷¹. This traditional and uncomfortable online payment method still have an important weight in terms of revenues of the Italian e-commerce market. It still represents the share of e-shoppers who are not comfortable with the online world. Mistrust, lack of experience and confidence are the main drivers of this sector, who will necessarily disappear once e-commerce will became part of the everyday life of everyone. Under an opportunity assessment view, there is still a 16% of the market who can be gained, convincing people to trust and get used to a specific payment method. Finally, we find a 1% of mobile payments³⁷². This is the first year that this new form of payment appears in the online payment chart and as we have already discussed before, this sector represent the future. It is already showing three digit growth rates, sign of a huge potential.

After having drawn a general overview of the Italian markets, some important findings have to be extracted in order to understand the strategic choice made by MasterCard in the first quarter of 2014. The Italian e-commerce market is steadily growing, the mobile industry on his side show vertiginous growing rates and positive sign of acceptance on the consumer side. Mobile penetration in Italy is among the highest in Europe, reaching 150% of the population³⁷³. The result is that both the e-commerce and m-commerce sectors have a huge potential and represents a profitable opportunity to exploit. Moreover since the industry is evolving, the demand is changing too, showing different necessities who are not still addressed by the current

³⁶⁹ Casaleggio Associati, 2013, *E-commerce in Italia*, available at: <http://www.casaleggio.it//e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

³⁷⁰ Casaleggio Associati, 2013, *E-commerce in Italia*, available at: <http://www.casaleggio.it//e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

³⁷¹ Casaleggio Associati, 2013, *E-commerce in Italia*, available at: <http://www.casaleggio.it//e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

³⁷² Casaleggio Associati, 2013, *E-commerce in Italia*, available at: <http://www.casaleggio.it//e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

³⁷³ The Paypers, *Cross-Border Ecommerce Report – Critical facts and insight for international expansion*, Ecommerce Europe, available at: <http://www.thepayers.com/cross-border-ecommerce>

offer in the market. There is a remarkable mismatch between the demand, who is evolving and is asking for new, simple and secure online payment methods and the offer, who is still anchored to old systems and business models. The opportunity arise from a growing demand with specific necessities, not still addressed by a particular offer. Consumers life is requiring them to do everything “on-the-go”, to be able to finalize a purchase from their mobile if necessary, with the same simplicity found from their Pc at home or in their office. The future success in the online payment industry depends on few factors. It depends on the ability to build an offer who is able to address three principal customer requests: convergence, simplicity and security. The first one has just been address, while simplicity refers to the customer experience. Market data are showing increasing investments in this sense: private companies in the field have understood the importance of “making it easy, simple and convenient” for the customer. An user-friendly experience is fundamental to gain the customer satisfaction and drive up the revenues stream. Finally, the last necessity to address is the security concern. As we have seen, security is still the highest barrier to conversion. Italian customers still do not trust the online systems, its operators: they are still not confident in the security measures adopted in this industry. As we have already mentioned before, this gap represents a huge opportunity for a player as MasterCard.

MasterCard’s offer, launched in the first quarter of 2014 address specifically and individually all the three customer’s requests. It represents the network operator attempt to exploit the market opportunities just underlined. MasterPass represents the revolutionary offer for the online world. The product has been designed for purchases concluded in stores, online or on the go. According to McLaughlin, chief emerging payments officer for MasterCard, MasterPass is " a foundation for moving to a world beyond plastic. We're in a generational shift from the physical to the connected digital."³⁷⁴ The brand new MasterCard product has been designed and conceived to respond to the necessity of convergence, to unify all transactions under one system. During the 2013 Mobile World Congress Conference held in Barcelona,

³⁷⁴ R.Chen, February 2013, *How MasterCard plans to transform mobile purchases*, C-net [online magazine], available at: <http://www.cnet.com/news/how-mastercard-plans-to-transform-mobile-purchases/> [Accessed 26 August 2014]

Mc Laughlin clearly represent the company's vision on the future of facilitating payments: "There's no e-commerce or m-commerce, there's just commerce"³⁷⁵.

We have just seen how MasterPass has completely centered part of its value proposition on one of the three strategic characteristics emerged from our quick market analysis: convergence. In the occasion of MasterPass commercial launch press conference, Giuliano Noci, Professor of Marketing at Politecnico of Milan, is underling MasterCard's sensibility on convergence needs: "The figures from our latest report on multi-channel purchasing clearly show how we're moving away from the idea of general e-commerce towards the more fitting concept of "everywhere commerce". We're seeing a sharp rise in the number of multi-channel of "Hyper reloaded" consumers, now standing at 9.7 million. This is now the largest consumer sector, with significant year-on-year growth of 28%, confirming how ordinary users are maturing and migrating towards the more advanced cluster by a natural process of evolution. A service providing a quicker, simpler shopping experience from all devices is a real advantage for consumers and retailers alike."³⁷⁶ From the latter quote, it emerges how simplicity is the other priority for MasterCard's digital wallet. MasterPass has been presented as the solution for online payment, who is reinventing and enhancing the online shopping experience³⁷⁷. "MasterPass is making online shopping fast simple and secure". The service simplify the online shopping since it requires the consumer to register once all its payment cards details, shipping information, loyalty cards, while signing up at the service. Then the online purchase will be easy as clicking a button: "Buy with MasterPass". The button will make the customer lands on its digital wallet page and It will be sufficient to login to finalize the purchase. The following process eliminate the necessity of inserting anytime the cards details who has huge implications on the quality of the customer experience,

³⁷⁵ R.Chen, February 2013, *How MasterCard plans to transform mobile purchases*, C-net [online magazine], available at: <http://www.cnet.com/news/how-mastercard-plans-to-transform-mobile-purchases/> [Accessed 26 August 2014]

³⁷⁶ Payment Card and Mobile in E-commerce, 2014, *MasterCard launches MasterPass in Italy*, available at: <http://www.paymentscardsandmobile.com/mastercard-launches-masterpass-italy/> [Accessed 26 August 2014]

³⁷⁷ MasterCard, 2014, *MasterCard MasterPass arrives in Italy*, available at: <http://www.paymentscardsandmobile.com/mastercard-launches-masterpass-italy/> [Accessed 26 August 2014]

decreasing drastically the conversion rate. On the merchant site, MasterPass drastically eliminates the number of carts abandoned during shopping, caused by a “too-long and complicated checkout process” and on the other side gives the possibility for consumer to shop online without taking out from their bags their physical wallet – using just a username and password³⁷⁸. As McLaughlin said “For the first time, the act of paying could potentially become both easier and more secure. With traditional plastic credit cards, any effort to make things convenient often resulted in higher risks for the consumer.”³⁷⁹ It seems then that digital wallet could be the solution for the online payment method dilemma, who made payment providers struggle to choose among security or easiness of use. MasterPass enhances the level of security for the consumer without compromising the shopping experience³⁸⁰. First of all, MasterPass requires the user to choose a security question, who together with username and password represents a two-level of identification security measure³⁸¹. For what concern the data transfer, all the user information are transferred to the identified merchants, who are part of the MasterPass platform, through a secured encrypted channel³⁸². Finally MasterPass provides other additional security measures that the digital wallet owner can choose, inside their own account page. One of this is the SMS alert: at checkout, before finalizing the purchase, the system sends a message to the wallet owner, containing a four-digit code who has to be inserted in the checkout page to authorize the payment³⁸³. In this way, in case the wallet credentials have been stolen, no purchase can be done via wallet by an

³⁷⁸ MasterCard, 2014, *MasterCard MasterPass arrives in Italy*, available at: <http://www.paymentscardsandmobile.com/mastercard-launches-masterpass-italy/> [Accessed 26 August 2014]

³⁷⁹ R.Chen, February 2013, *How MasterCard plans to transform mobile purchases*, C-net [online magazine], available at: <http://www.cnet.com/news/how-mastercard-plans-to-transform-mobile-purchases/> [Accessed 26 August 2014]

³⁸⁰ BPM MasterPass, available at: <https://masterpass.com/Wallet/bpm/Home> [Accessed 27 August 2014]

³⁸¹ BPM MasterPass, available at: <https://masterpass.com/Wallet/bpm/Home> [Accessed 27 August 2014]

³⁸² BPM MasterPass, available at: <https://masterpass.com/Wallet/bpm/Home> [Accessed 27 August 2014]

³⁸³ BPM MasterPass, available at: <https://masterpass.com/Wallet/bpm/Home> [Accessed 27 August 2014]

unauthorized user³⁸⁴. Moreover MasterPass gives the possibility to the user to exploit his or her PC protection technology, in the specific the IPT – Intel identity Protection Technology who with a multilayer security measure protect from unauthorized accesses³⁸⁵.

The security concern, who represents the third strategic pillar who a digital wallet should bet on, is not just a matter of technical security measure, just presented. As we have just seen, MasterPass has enhanced the security system with many protocols and technical features who will never be deeply understood by the users. For this reason, it is fundamental that together with the technical security measure, a digital wallet combines the “trust” and “reputation” of the wallet provider. We have seen how one of the opportunity highlighted in the market analysis was represented by the low trust level of consumers to the online payment provides. It means that the Italian consumers still not trust 100% the current players in the market. On the other side Carlise & Callagher study has revealed how the “Banks are at risk of losing market share to a new group of competitors in the mobile wallet arena...Consumers who are interested in mobile wallets would consider using alternative players to their primary bank for mobile wallets and for banking services.”³⁸⁶ The study clearly represent the current situation of major financial institutions; they are losing a profitable new market in their own sector, by new players, as for example alternative payment providers as PayPal or OTT (Over-the-top content providers) as Google, or merchants as Amazon. On the other side, the study reveals also another important finding: “Nearly half, 46% of respondents trust their primary banks to provide services in their mobile wallets. PayPal takes second place with 30% of respondents’ trust. Credit Card companies finish third with 14%.”³⁸⁷ In conclusion, Financial

³⁸⁴ BPM MasterPass, available at: <https://masterpass.com/Wallet/bpm/Home> [Accessed 27 August 2014]

³⁸⁵ BPM MasterPass, available at: <https://masterpass.com/Wallet/bpm/Home> [Accessed 27 August 2014]

³⁸⁶ Carlise & Gallagher Consulting Group, 2013, *Mobile Wallet Reality Check: How will you sty top of Wallet? – A CG Study finds banks at risk of losing market share as new mobile wallet competitors emerge*, available at:

https://www.cginc.com/sites/default/files/pdf/CG_Research_Paper_Mobile_Wallet_072512.pdf

³⁸⁷ Carlise & Gallagher Consulting Group, 2013, *Mobile Wallet Reality Check: How will you sty top of Wallet? – A CG Study finds banks at risk of losing market share as new mobile wallet competitors*

institutions have all the potential of becoming leader in the e-wallet industry, since they have a huge competitive advantage: the consumers' trust, third strategic pillar of a successful e-wallet proposition. Moreover we should also consider that until financial institutions do not innovate and still rely on old business models, the trust gap will exist in the Italian market, until a new operator will totally gain the consumer confidence, excluding forever financial institutions from the highly profitable pie of online transactions. MasterCard, who has 14% of the market trust, the competences and the force of innovation, launched a product who could assure the company a place in the e-wallet industry, and who solved the problem just exposed, related to financial institutions. In Italy MasterPass has been launched in cooperation with Financial Institutions, via the Banks' channel³⁸⁸. The product represents a turn-key solution for banks, to enter the e-wallet market with a valuable product and value proposition, who carries the name of a trusted network as MasterCard. On the other side, consumer will have access to the wallet through their banks channels, perceiving MasterPass has a service guaranteed by his or her own financial institution. In this way, the banks' competitive advantage of trust has not been wasted. In fact MasterPass has been launched by MasterCard in US, Australia, Canada and UK. Finally it was landed in Italy too, but with a different format. In all other countries, the product has been launched in the market both as the MasterCard e-wallet solution, in its "pure format" and in its "turn-key solution" for banks, carrying MasterPass and the name of the financial institution providing the service³⁸⁹. In Italy, this pure format of MasterPass is not live in the market, since the strategy behind is completely different. PayPal has already reached a big share of the market, with a strong value proposition. MasterCard had to exploit the fear of the financial institutions, who were losing the opportunity to step-in in this industry and its strict relation with all major Italian banks. Moreover we should add the "trust" competitive advantage who could be exploited just via a collaboration among the two

emerge, available at:

https://www.cgcginc.com/sites/default/files/pdf/CG_Research_Paper_Mobile_Wallet_072512.pdf

³⁸⁸ MasterCard website, MasterPass page available at:

<http://www.mastercard.com/it/privati/index.html>

³⁸⁹ A. Moretti, *MasterPass sbarca anche in Italia*, Techgenius, available at:

<http://www.techgenius.it/123693/masterpass-sbarca-in-italia/>

players. For the moment, the Italian banks providing MasterPass to their clients are BPM - Banca Popolare di Milano³⁹⁰, BG- Banca Generali³⁹¹ and BNL- Banca Nazionale del Lavoro³⁹². Nowadays MasterPass represents a piece of banks' offer and it is perceived by consumers as an innovative banking services, trusted and innovative as the consumer is acceding his wallet through his own banking portal. MasterPass will be soon launched by other Italian banks, who started moving on the innovation path, searching the collaboration of a partner as MasterCard.

The product has now been launched as digital wallet, as simplifier and accelerator of online commerce. Soon, all the features designed for MasterPass will be implemented, making it land in the offline world. It will be more than “click-and-pay” solution, since it will implement many services as the real time alert, the account balance and track of the previous transactions, as many offers and discounts³⁹³. Once completed, MasterPass will completely replace the physical wallet, making every transaction, both online and offline easy, fast and secure. The path to such a radical change is never easy to achieve, but in this case is even harder, considering the cultural barriers and technology obstacles to overcome. MasterPass launch in Italy represents a first big step in the right direction, starting with the preside of the online world.

3.3.2 “The e-wallet” Italian Market landscape – MaterPass’ main competitors

In the following paragraph, we will conclude the analysis of MasterPass launch in Italy by considering the main competitors in the market. For the purposes of the analysis, we will also consider a specific category of competitors, those who are not currently present in the market but that will sooner make their appearance. This is the case of Visa and Google who are not already live in Italy, but that MasterPass will have to deal with it sooner. Considering first the already live players, the main names

³⁹⁰ BPM MasterPass, available at: <https://masterpass.com/Wallet/bpm/Home>

³⁹¹ BG MasterPass, available at: <https://www.bancagenerali.it/site/home/conti/carte/bg-masterpass-e-wallet.html>

³⁹² YouPass BNL MasterPass, available at: <https://masterpass.com/Wallet/BNLWallet/Home>

³⁹³ G. Petrucciani, *Tra MasterPass e PayPal è partita la sfida, il sole 24 ore*, available at: <http://www.ilsole24ore.com/>

to consider are PayPal, MyBank, Sofort Banking and the main mobile wallets launched in the first quarter of 2014 respectively by Vodafone and Telecom Italia.

MasterPass value proposition and positioning in the Italian market, just exposed in the precedent paragraph, can be better understood at the light of PayPal positioning in Italy and worldwide. PayPal entered the e-commerce sector in 1998³⁹⁴. In 2000 the US company is acquired by eBay its current parent company; in the same year, the company already reached 1 million of subscribers³⁹⁵. Later in 2005, the company makes its appearance in the Italian market³⁹⁶. Nowadays PayPal counts 143 million users worldwide, surpassing its parent company eBay for number of subscriptions (128 million eBay's accounts) and revenues growing rates³⁹⁷. Among these, over 5 million accounts are owned by Italian users, making PayPal the first and most preferred online payment method of the peninsula³⁹⁸. It has gained success thanks to its easiness of use and simplicity. Anyone can open an account, deciding whether to use the PayPal account or to store the customers own credit, debit or prepaid cards in the wallet. The convenience consists also in the possibility for customers to keep track of their transactions and withdraw money from their accounts. Moreover the system permits the user to send money to other accounts and to pay for online purchases, all without the necessity of disclosing the financial details³⁹⁹. The security measure comes from the business model operating underneath: the independent business model⁴⁰⁰. The following picture well represents how the independent business model works.

³⁹⁴ PayPal website, *History page*, available at: <https://www.paypal-media.com/history> [Accessed 29 August 2014]

³⁹⁵ PayPal website, *History page*, available at: <https://www.paypal-media.com/history> [Accessed 29 August 2014]

³⁹⁶ PayPal website, *History page*, available at: <https://www.paypal-media.com/history> [Accessed 29 August 2014]

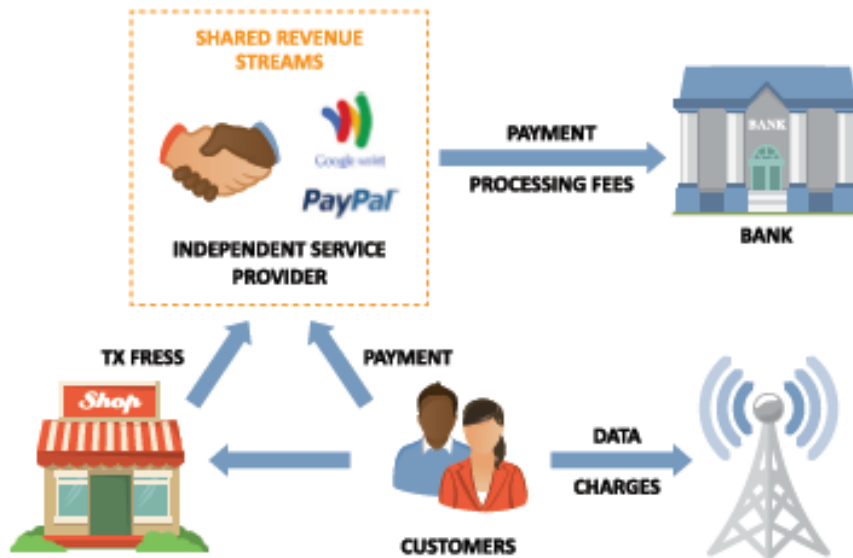
³⁹⁷ A. Cave, February 2014, *PayPal chief fends off calls for demerger from eBay*, The Sunday Telegraph, available at: <http://www.telegraph.co.uk/>

³⁹⁸ Ne.W.S.- Web e comunicazione website, *PayPal in breve*, available at: <http://www.newesolutions.com/paypal-partner/> [Accessed 29 August 2014]

³⁹⁹ PayPal website, *Come funziona*, available at: <https://www.paypal.com/it/webapps/mpp/pay-online> [Accessed 29 August 2014]

⁴⁰⁰ Payment eye, *The Changing Face of Mobile Payments – An overview of the mobile revolution*, available at: <http://www.paymenteye.com/>

Figure 2418: Independent Service Provider Model - Source: Payment eye⁴⁰¹



In this model, an independent Service Provider, in the specific case PayPal (but as we can see from the picture, Google Wallet has the same structure), interact as intermediary with all the principal actors of the system. PayPal plays the role of intermediary among banks, customers, merchants and other operators⁴⁰². The transactions are performed without using the same processing networks of wire transfer or bank cards. As a consequence in the following model, the role of banks is drastically reduced and consequently the potential revenue stream that comes with it⁴⁰³. As we can understand from the picture before, PayPal receive the payment details from the customer, does not transfer them to the merchant since it simply transfers the amount to be paid to the merchant. Then, it transfers a payment processing fee to the banks issuing the card used in the wallet. The system has

⁴⁰¹ Payment eye, The Changing Face of Mobile Payments – An overview of the mobile revolution, available at: <http://www.paymenteye.com/>

⁴⁰² Payment eye, The Changing Face of Mobile Payments – An overview of the mobile revolution, available at: <http://www.paymenteye.com/>

⁴⁰³ Payment eye, The Changing Face of Mobile Payments – An overview of the mobile revolution, available at: <http://www.paymenteye.com/>

clearly many cons for banks, who are left apart and excluded from a profitable sector.

The main difference between MaterPass and PayPal can be underlined in the operating model behind and of consequence in the different positioning in the market. MasterPass model can be defined as a Bank- Financial Institution Led Model⁴⁰⁴. MasterCard, as payment processing network built a wallet system who works using the same infrastructure of card payments. In this case, a MasterPass transaction, under a technical perspective is not so different to a card payment. The card details are securely stored in the wallet, who encrypts the payment information and guarantee maximum security in all the payment phases. The user has access to its account via his own bank channel, carrying with it all the highly secure measures of his bank⁴⁰⁵. The user trust MasterPass since it is perceived highly protected and familiar; it is distributed by its bank and has a multilayer system of authentication⁴⁰⁶. Moreover the card details stored in the wallet are transmitted encrypted to the merchant, who to be part of MasterPass platform had to normalize its system to MasterCard rules and principles⁴⁰⁷. Differently to the PayPal structure, banks still have a principal role in the system, capturing the revenue stream deriving from these transactions. We can derive that MasterPass positioning in Italy is highly connected to its underneath model. MasterPass had to differentiate from PayPal under a business model perspective, since the following had already a strong positioning in the market. MasterCard on his side could exploit other possibilities, such as the loosing role of banks in the digital wallet industry, the still high confidence and trust of users in their own banks and finally, the wide network that MasterCard has established with all major Italian banks during the years.

⁴⁰⁴ Payment eye, The Changing Face of Mobile Payments – An overview of the mobile revolution, available at: <http://www.paymenteye.com/>

⁴⁰⁵ MasterCard website, MasterPass page available at: <http://www.mastercard.com/it/privati/index.html> [Accessed 30 August 2014]

⁴⁰⁶ MasterCard website, MasterPass page available at: <http://www.mastercard.com/it/privati/index.html> [Accessed 30 August 2014]

⁴⁰⁷ MasterPass website, *Potenzia il tuo business online*, available at: <https://masterpass.com/SP/Merchant/Home> [Accessed 30 August 2014]

The third major competitors that MasterCard had to consider are two players in the category of online wire transfer: Sofort Banking and MyBank. We have already introduced in chapter two MyBank, as it is part of a pan-European project aimed to align and facilitate the online payment through the member of the European Union. The system underneath is the same. Both Sofort and MyBank are online instruments who facilitate the online wire transfer. The user selects MyBank or Sofort among the payment method offered in the payment page of an e-merchant site. Both systems will require the user to login into the Sofort or MyBank account where the user bank has been registered⁴⁰⁸. The login credentials to insert would be the same of the user's home banking account. Finally, the user authorizes the wire transfer that has been automatically filled with the merchants credential by the system and the payment will be automatically performed. Both the e-merchant and e-customer will receive an immediate notification of the authorized transaction⁴⁰⁹. Those systems represent a real challenge for all digital wallet in the market since they are making easier and quicker an already familiar instrument for the consumer: the wire transfer. We have already analyzed in chapter two this form of payment, its cons and pros for the merchant and for the user. With those systems some of the cons traditionally recognized to the wire transfer disappear, as the long timings to process or the necessity to fill with the merchant credentials a long and complicated format in the online banking website. With Sofort and MyBank, the wire transfer is automatically filled and for what concern the timings, once the payment has been authorized, the e-merchant receive a notification who permits him to proceed with the order⁴¹⁰. In conclusion, the success of these forms of payment depends on the widening of the acceptance. Since both of them have been just launched in the Italian market, they are still on a first critical phase of "building the acceptance". The success will mostly depends on that, so it is still too early to draw any type of conclusion. We will better

⁴⁰⁸ Sofort Banking Homepage, available at: <https://www.sofort.com/ita-IT/acquirenti/sb/bonifico-online-diretto-con-sofort-banking/> [Accessed 30 August 2014]

⁴⁰⁹ My Bank Homepage, available at: <https://www.mybank.eu/> [Accessed 09 August 2014]

⁴¹⁰ Sofort Banking Homepage, available at: <https://www.sofort.com/ita-IT/acquirenti/sb/bonifico-online-diretto-con-sofort-banking/> [Accessed 30 August 2014]

understand the strategic role that acceptance plays in the success of an online payment system in the fourth chapter of the paper.

Concluding the analysis of the already live MasterPass competitors in the Italian market, we should deal with another category, that of mobile wallets. We have already introduced such distinction, at the beginning of the current chapter. In Italian specific case, the difference between a digital wallet and a mobile wallet is more remarked. This is mainly due by the positioning of such new services, decided by their providers. In fact as we have already introduced, a mobile wallet is “the e-wallet service” on a smart phone who permits the user to perform payments both online and offline, via the NFC technology. In Italy, we can underline the following situation: mobile wallet providers are strictly positioning such products on the offline world, still not providing the possibility to use such wallets for online purchases. In the meanwhile, digital wallet providers, such as PayPal, MasterPass and Amazon, are focusing principally on the online commerce who could be performed from any device (they provides mobile app to perform mobile payments) but they are still not jet launching an offline solution to integrate the current online offer. This is probably a result of multiple factors, such as the early times, a still immature market, still high cultural barriers and the difficulty of succeeding in both offline and online solutions. All these obstacles have probably forced the players to concentrate the offer on one of the two sectors, to avoid the dispersion of investments. What is sure is that the two worlds, offline and online transactions performed via a digital wallet, will be unified by a unique solution. This is the future of “the digital wallet”. In line with this perspective, we should then consider in our analysis also those mobile wallets, who has just been launched in the Italian market, and that are mainly positioned in the offline transactions. This is the case of Tim Wallet and Vodafone wallet. The two value propositions and business models are very similar: makes the physical wallet useless, replacing it with your mobile phone who permits the user to perform any transaction easily, quickly and more securely. Both of them are at an early stage, since they have been launched in the last months, first quarter of 2014. Both of them have the same business model underneath, consequently sharing the same issues and problems. We should wait some times before this form of payment will gain a

modest customer base, since as we have already anticipated in chapter two, NFC transactions require the user to have at the same time an NFC mobile, an NFC sim, to download the mobile wallet app and finally to store inside a NFC compatible card. This is currently the highest barrier that mobile operators are trying to overcome. It will surely require time and investments. In conclusion, in the next future, when digital wallets will integrate with the NFC technology and provide the users the possibility to pay for their offline purchases too, they will strongly compete with already stable actors in the market: Vodafone and Tim, who were among the first to invest in this sector in Italy.

The same consideration has to be done on the digital world for those actors who will enter the market in the next future: Visa and Google. For what concerns V.me, the digital wallet distributed by Visa already live in UK, France, Spain and Poland, it will make soon its appearance in the Italian market⁴¹¹. Visa will invest further 200 million euro to support the development of the service, adding as following: “V.me by Visa, will expand to Germany, Ireland, Norway, Sweden and Italy by the end of the year. Pilots will also launch in Greece, the Czech Republic and Slovakia in 2015, taking the total number of markets offering the service to 12”⁴¹². Visa intends positioning its wallet in Italy and the other programmed markets, following the same path as MasterCard. The service will be “bank-branded digital wallet, allowing banks and financial institutions to put their own name and branding on a service that is powered by Visa”⁴¹³. We could expect then that the two leader payment schemes will start a wallet war for providing the digital wallet service to Italian banks, at the end of the current year.

⁴¹¹ Visa website, July 2014, *Visa confirms eight new markets for digital wallet V.me by Visa*, available at: http://www.visaeurope.com/en/newsroom/news/articles/2014/8_new_markets_for_vme_by_visa.aspx [Accessed 30 August 2014]

⁴¹² Visa website, July 2014, *Visa confirms eight new markets for digital wallet V.me by Visa*, available at: http://www.visaeurope.com/en/newsroom/news/articles/2014/8_new_markets_for_vme_by_visa.aspx [Accessed 30 August 2014]

⁴¹³ Visa website, July 2014, *Visa confirms eight new markets for digital wallet V.me by Visa*, available at: http://www.visaeurope.com/en/newsroom/news/articles/2014/8_new_markets_for_vme_by_visa.aspx [Accessed 30 August 2014]

Finally, we should consider Google, who thanks to its Google Wallet is leader in the micro-payment market. Considering that Google is the provider of the Android platform that the majority of the smart phones currently in commerce are using, we could imagine the strong positioning that such player has in this market. In the following platform, there is the possibility to pay for apps with the Google digital wallet service, who permits the user to store payment cards, loyalty cards and shipping addresses. Moreover, it enables the user to control his own expenses, via the transactions history⁴¹⁴. In this way, Google has taken an important revenue stream, that of the profitable micro-transaction industry. Google will combine his digital wallet for the online world, with the NFC technology to enable its customer to pay in the offline world too⁴¹⁵. When the Google wallet will make its appearance in the Italian market, the distinction among offline and online world will be no more useful and every player will be forced to review their current position and strategy.

⁴¹⁴ Google Wallet website, available at:

<https://accounts.google.com/ServiceLogin?service=sierra&continue=https://wallet.google.com/manage/?referer%3Dhttps://www.google.it/&followup=https://wallet.google.com/manage/?referer%3Dhttps://www.google.it/&itmpl=wallet&authuser=0> [Accessed 30 August 2014]

⁴¹⁵ Google Wallet website, available at:

<https://accounts.google.com/ServiceLogin?service=sierra&continue=https://wallet.google.com/manage/?referer%3Dhttps://www.google.it/&followup=https://wallet.google.com/manage/?referer%3Dhttps://www.google.it/&itmpl=wallet&authuser=0> [Accessed 30 August 2014]

Chapter 4: MasterPass' acceptance network – A critical factor to do not underestimate when launching a new online payment method

4.1. Overview of the Italian acceptance network

The following chapter will be focused on the acceptance side, the other fundamental factor for the success of a payment method. Digital wallet as the one distributed by Amazon and Apple had a huge success, thanks to the high strength of the merchant who accepted the following form of payment: the provider of the service itself. In MasterPass case, the provider of the service, MasterCard, had to build an attractive acceptance network who could assure the success of the brand new online payment instrument. The number of subscribers of the services and number of transactions performed via e-wallet will depend on the quality of the acceptance. An acceptance network, to be attractive, should reach a critical mass of merchants, that determines the widespread of the service. Moreover, within this list of acceptance big players' names should be present, those who register the majority of online transaction in Italy. The e-commerce Italian market is in fact highly concentrated. The 69% of the market is dominated by the top 20 e-merchants, as an analysis of following graph is showing for the referring year 2012⁴¹⁶. The first 50 players reach almost the 90% of the market, sign of a difficult market to operate in. The acquisition costs of new clients are very high and especially for new players, the growth depends on the investment capacity. To enter successfully the Italian e-commerce market, the "scale" is fundamental since the negotiating power depends on the ability of being competitive, carrying convenient prices for the consumer and at the same time maintaining reasonable profit margins⁴¹⁷.

⁴¹⁶ ICT executive, 2012, eCommerce in italia ecco i principali player, available at: http://www.ict4executive.it/executive/approfondimenti/ecommerce-in-italia-ecco-i-principali-player_43672151171.htm [Accessed 30 August 2014]

⁴¹⁷ ICT executive, 2012, eCommerce in italia ecco i principali player, available at: http://www.ict4executive.it/executive/approfondimenti/ecommerce-in-italia-ecco-i-principali-player_43672151171.htm [Accessed 31 August 2014]

Figure 2519: The concentration of the offer 2006-2012 - Source: Osservatori.Net⁴¹⁸



The major online retailers in the Italian e-commerce landscape, according to a published e-commerce ranking for 2013, e-Bay dominates the sector, placing in first position. The ranking has been based on estimates of data available on the net; among the useful estimates we find the number of access to the site, the number of brand quotes on other sites, comparators, blogs and forums⁴¹⁹.

The following table is representing the first 20 e-merchants for popularity and number of accesses⁴²⁰. As we have already anticipated, eBay is the first in Italy, followed by Booking and Groupon. The latter belongs to the “couponing category”, who has experienced a real booming in 2011 and it is still dominating the sector placing two big players among the top 20 of the ranking: Groupon as 3rd place and

⁴¹⁸ Osservatori.Net – ICT & Management, *La concentrazione dell’offerta 2006-2012*, available at: http://www.ict4executive.it/executive/approfondimenti/e-commerce-in-italia-ecco-i-principali-player_43672151171.htm

⁴¹⁹ E-commerce Italia-Europa, 30 August 2014, *E-commerce Ranking*, available at: http://www.casaoggio.it/e-commerce/e-commerce_standings.php [Accessed 31 August 2014]

⁴²⁰ E-commerce Italia-Europa, 30 August 2014, *E-commerce Ranking*, available at: http://www.casaoggio.it/e-commerce/e-commerce_standings.php [Accessed 31 August 2014]

Groupalia in the 14th position⁴²¹. Couponing sites success has to be recognized to few marketing principles applied in a common online website: product and prices at affordable prices and promotions sold with an expiration date to create in the user the urgency to do not miss the chance.

Table 4: Italian online retailers ranking - Source: E-commerce Italia⁴²²

POSITION	N°	COMPANY	INDUSTRY	TOTAL	N° OF ACCESSES	POPULARITY
=	1	eBay	Online Retailing	1200	22.000.000	129.000.000
=	2	Booking.com	Tourism	484	6.700.000	116.000.000
=	3	Groupon	Online Retailing	378	8.200.000	3.580.000
-	4	Trenitalia	Tourism	352	7.500.000	7.330.000
-	5	Vodafone	Free Time	308	6.700.000	2.770.000
=	6	Amazon	Online Retailing	303	4.300.000	69.600.000
=	7	Zalando	Fashion	287	6.200.000	3.770.000
-	8	eDreams	Tourism	225	4.600.000	10.700.000
-	9	Expedia	Tourism	205	1.900.000	77.100.000
=	10	Tim	Free Time	195	4.200.000	2.980.000
-	11	Tre	Free Time	172	3.800.000	169.000
-	12	Ryanair	Tourism	158	3.200.000	8.150.000
-	13	lbs.it	Editing	141	2.600.000	14.800.000
-	14	Groupalia	Online Retailing	133	2.900.000	1.030.000
-	15	Wind	Free Time	120	2.600.000	1.270.000
-	16	William Hill	Free Time	119	2.600.000	1.090.000
-	17	Sisal - MatchPoint	Free Time	118	2.600.000	143.000
-	18	MediaWorld	Electronics	116	2.400.000	4.940.000
=	19	iTunes	Editing	103	1.500.000	23.000.000
=	20	Privalia	Online Retailing	102	2.200.000	1.450.000

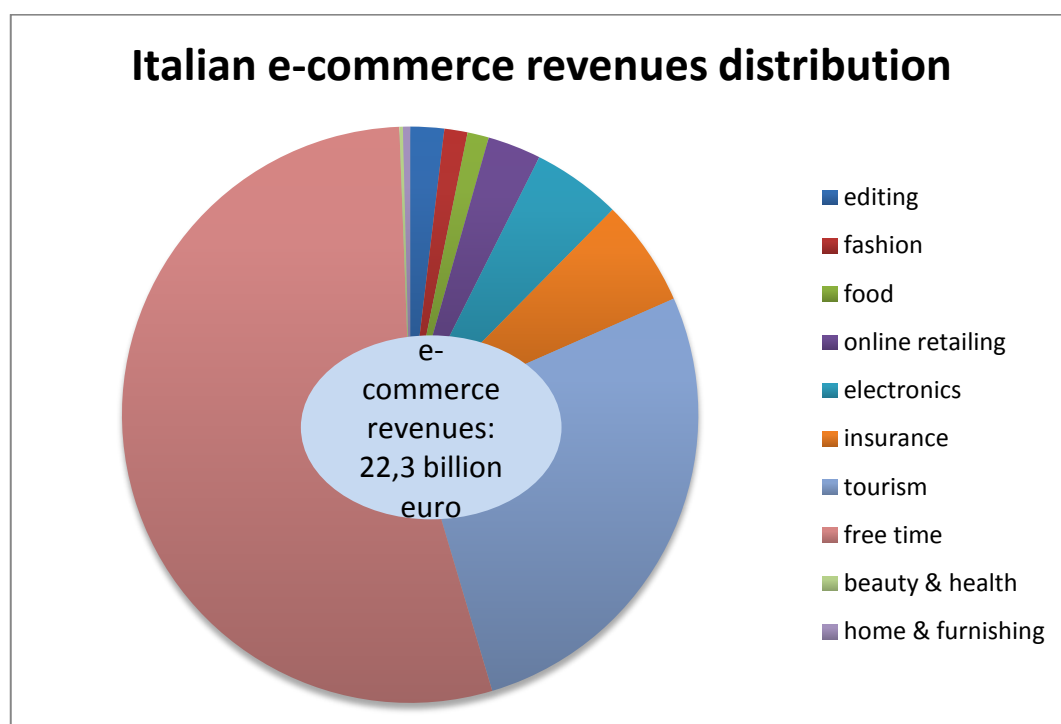
If we look at the ranking under a “category” perspective, we will found out the recurrence of two principal sectors, the most mature. The number of access and

⁴²¹ ICT executive, 2012, eCommerce in italia ecco i principali player, available at: http://www.ict4executive.it/executive/approfondimenti/e-commerce-in-italia-ecco-i-principali-player_43672151171.htm [Accessed 31 August 2014]

⁴²² E-commerce Italia-Europa, 30 August 2014, *E-commerce Ranking*, available at: http://www.casaleggio.it/e-commerce/e-commerce_standings.php [Accessed 31 August 2014]

popularity is usually reflected in higher profitability: it is not a case if the following graph, representing the revenue distribution in 2013, highlight the predominance of the same three categories, respectively free time and tourism⁴²³. The latter worth respectively 54% and 27% of the total Italian online revenues for 2013⁴²⁴.

Figure 2620: Italian e-commerce revenues distribution - Source: Casaleggio associati⁴²⁵



The biggest representative of the most profitable category of free time, whose reached 12 billion euro in 2013, is Vodafone⁴²⁶. The latter has a 5th place in the most known and accessed website ranking. This is also one of the first merchant who accepted MasterCard as payment method. As we have previously anticipated, it is

⁴²³ Casaleggio Associati, 2013, *E-commerce in Italia*, available at: <http://www.casaleggio.it//e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

⁴²⁴ Casaleggio Associati, 2013, *E-commerce in Italia*, available at: <http://www.casaleggio.it//e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

⁴²⁵ Casaleggio Associati, 2013, *E-commerce in Italia*, available at: <http://www.casaleggio.it//e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

⁴²⁶ Casaleggio Associati, 2013, *E-commerce in Italia*, available at: <http://www.casaleggio.it//e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

fundamental to build a critical mass of small-medium merchant who accept the new alternative payment method, but it is even more important to have top category merchants who drive the visibility and respectability of the payment instrument. In this case, Vodafone is the highest representation of the most profitable online category in Italy: a big step in the right direction.

For what concerns the other principal category, tourism, the revenues stream for 2013 reached a level of 6 billion euro, as we can notice from the previous graph⁴²⁷. The biggest representatives of this category are Booking, with its second position and Trenitalia, the first train operator in Italy who is at a 4th place in the ranking list⁴²⁸. Following in the ranking, there are many companies belonging to the category of comparative sites or “research engine” who enable consumer to find the most convenient price for the same product. Booking or the travel agency Expedia are two big names who best represent the category. While the other side of online travel websites is represented by online airlines as eDreams and Ryanair or simply transportation companies as Trenitalia.

Other important categories in terms of captured revenue stream are the insurance and electronic websites who represents respectively 6% and 5% of the market. Finally, the category of online mass retailing has grown in the last year at detriment of other sectors as online publishing, wealth & beauty and electronic⁴²⁹.

For what concern the main actors in the Italian acceptance landscape, we should principally divide two main players: the Payment Service Providers and the Acquiring banks. The first are fundamental for what concern acceptance, since they represent those actors whose function is to integrate different forms of payment method to the e-merchant website⁴³⁰. In other words, the PSP physically implement the online infrastructure of the e-merchant, deciding the checkout flow structure and

⁴²⁷ Casaleggio Associati, 2013, *E-commerce in Italia*, available at: <http://www.casaleggio.it//e-commerce/immagini/e-commerce2014/Focus-E-commerce-2014-Web.pdf>

⁴²⁸ E-commerce Italia-Europa, 30 August 2014, *E-commerce Ranking*, available at: http://www.casaleggio.it/e-commerce/ecommerce_standings.php [Accessed 31 August 2014]

⁴²⁹ E-commerce Italia-Europa, 30 August 2014, *E-commerce Ranking*, available at: http://www.casaleggio.it/e-commerce/ecommerce_standings.php [Accessed 31 August 2014]

⁴³⁰ Web-Merchant website, *Payment Service Provider definition*, available at: <http://www.web-merchant.co.uk/psp.asp> [Accessed 31 August 2014]

enabling different form of payment methods ⁴³¹ . Naturally, the checkout infrastructure has to be connected with the merchant's bank account where it will receive automatically all the payments settled by the customers⁴³². The main Italian payment service providers are⁴³³:

- BNL Positivity - a joint venture between BNL and First Data⁴³⁴;
- CartaSi- a credit card service provider serving 700 banking outlets, 415000 merchants and 7 million customers⁴³⁵;
- Digital River – specialized in global cloud-commerce provides payment solutions for companies in software, consumer electronics and other markets⁴³⁶;
- Sia Group – design creates and manages technology infrastructures and payment solutions for financial institutions⁴³⁷;
- MonetaWeb - Virtual POS Setefi Spa, who is a subsidiary of Intesa San Paolo⁴³⁸;
- PayPal Pro – a PayPal solution who enables merchants to accept credit card transactions ⁴³⁹

These are the main payment service providers in Italy, who are actually servicing the main Italian e-commerce website. The choice of a reliable and competent PSP is fundamental for the e-merchant success, since the payment service provider builds

⁴³¹ Web-Merchant website, *Payment Service Provider definition*, available at: <http://www.web-merchant.co.uk/psp.asp> [Accessed 31 August 2014]

⁴³² Web-Merchant website, *Payment Service Provider definition*, available at: <http://www.web-merchant.co.uk/psp.asp> [Accessed 31 August 2014]

⁴³³ The Payperss, *Cross-Border Ecommerce Report – Critical facts and insight for international expansion*, Ecommerce Europe, available at: <http://www.thepayerss.com/cross-border-ecommerce>

⁴³⁴ BNL positivity, *Homepage*, available at: <http://www.bnlpositivity.it/it/index.html> [Accessed 31 August 2014]

⁴³⁵ CartaSi website, *Homepage*, available at: <http://www.digitalriver.com/> [Accessedd 31 August 2014]

⁴³⁶ Digital River website, *Homepage*, available at: <http://www.digitalriver.com/> [Accessed 31 August 2014]

⁴³⁷ Sia website, *Sia*, available at: <https://www.sia.eu/Engine/RAServePG.php/P/252510010404> [Accessed 31 August 2014]

⁴³⁸ Setefi website, *MonetaWeb*, available at: <https://www.monetaonline.it/monetaweb/authentication> [Accessed 31 August 2014]

⁴³⁹ PayPal website, *PayPal Pro*, available at: <https://www.paypal.com/it/webapps/mpp/hosted> [Accessed 31 August 2014]

the payment infrastructure of the website and it is responsible for the elaboration and transmission of some sensible data belonging to the merchants' clients⁴⁴⁰. For this reason this activity is nowadays strictly regulated by the European Union via the Directive on Payment Service 2007/64/EC⁴⁴¹.

For what concern the acquiring side, we have already introduced and defined in the second Chapter of the paper, the role of an acquirer bank. Below a list of the most active acquirers in Italy⁴⁴²:

- Setefi,
- CartaSi
- Banca Sella
- Banca Monte dei Paschi di Siena
- BNL
- Unicredit
- Intesa San Paolo,
- Iccrea Banca
- Banca Popolare di Sondrio
- Barclays
- Unipol Istituto Centrale delle Banche Popolare Italiane

What we can deduct from the following list is that some of the acquirer banks provide also a PSP service, as is the case of BNL, CartaSi and Intesa San Paolo. In these cases it is more convenient, especially for smaller merchant to have a unique actor, from which rely for both the services.

⁴⁴⁰ Web-Merchant website, *Payment Service Provider definition*, available at: <http://www.web-merchant.co.uk/psp.asp> [Accessed 31 August 2014]

⁴⁴¹ EurLex, November 2007, *Directive 2007/64/EC*, available at: <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32007L0064> [Accessed 31 August 2014]

⁴⁴² The Payperss, *Cross-Border Ecommerce Report – Critical facts and insight for international expansion*, Ecommerce Europe, available at: <http://www.thepayerss.com/cross-border-ecommerce>

4.2 MasterPass acceptance network in Italy – Big merchants vs small merchants' acceptance strategy

“Over 3500 Italian retailers have enrolled for MasterPass to date”⁴⁴³, meaning that today, users buy online via MasterCard digital wallet on a big number of different Italian websites. We have already introduced the two critical factors of success of a new online payment method: first of all, reaching a critical mass and second, reaching the acceptance of big names of Italian e-commerce landscape. MasterPass is doing a great job on both sides. In order to reach a critical size, first of all MasterCard had to forge a strategic alliance with one of the major acquirer bank in Italy, in the specific case Banca Sella⁴⁴⁴. The latter has enabled its clients, Italian online merchants, to accept MasterPass in their online payment page. The synergy with such an important acquirer has permitted MasterCard to reach even the smallest website, otherwise impossible to contact and enable to this new form of payment. Banca Sella vision, matured after many years of experience on the Italian e-commerce market, is well represented by an interview released by the bank's head of online payment, Alessandro Bocca: “Each merchant's online payment page should not be considered a mere page that enables different payment forms, but it should be considered a “channel enabler”. In the first case, the merchant finds sufficient to accept credit cards in its own website. While if the payment page is considered a channel enabler, different and many forms of alternative payment systems are accepted. This is the approach that Banca Sella wants to share with its clients. Banca Sella was in fact the first in Italy to accept PayPal in 2009 and today it is the first to accept the new MasterCard's digital wallet MasterPass. The latter simplifies the checkout experience, making more efficient the customer-merchant relationship.”⁴⁴⁵

⁴⁴³ About Payments.com, March 2014, *3,500 Italian retailers already enrolled for MasterPass acceptance*, available at: <https://www.about-payments.com/>

⁴⁴⁴ Asca, December 2013, BNL: *prima banca in Italia a sperimentare MasterPass*, available at: [http://www.asca.it/news-Bnl_\(Bnp_Paribas\)_prima_banca_in_Italia_a_sperimentare_MasterPass-1348537.html](http://www.asca.it/news-Bnl_(Bnp_Paribas)_prima_banca_in_Italia_a_sperimentare_MasterPass-1348537.html) [Accessed 31 August 2014]

⁴⁴⁵ Alessandro Bocca interview, released for Pagamenti Digitali – innovation in payment & commerce, available at: http://www.pagamentidigitali.it/mobile/128_l-evoluzione-dei-pagamenti-online-secondo-banca-sella.htm [Accessed 31 August 2014]

From Banca Sella vision, we can understand how important is for each merchant to have implemented in their own payment page the button “Pay with MasterPass”. Simplifying the checkout, the conversion rate will increase for the merchant, representing an increase in revenues coming from an optimization of the website. The benefit for the consumer is big, both in terms of time and experience, reflecting automatically in a economic benefit for the merchant. In order to understand in deep what are the benefits for the consumer, we should first of all try, shop and analyze the actual customer experience on the current Italian online retailers.

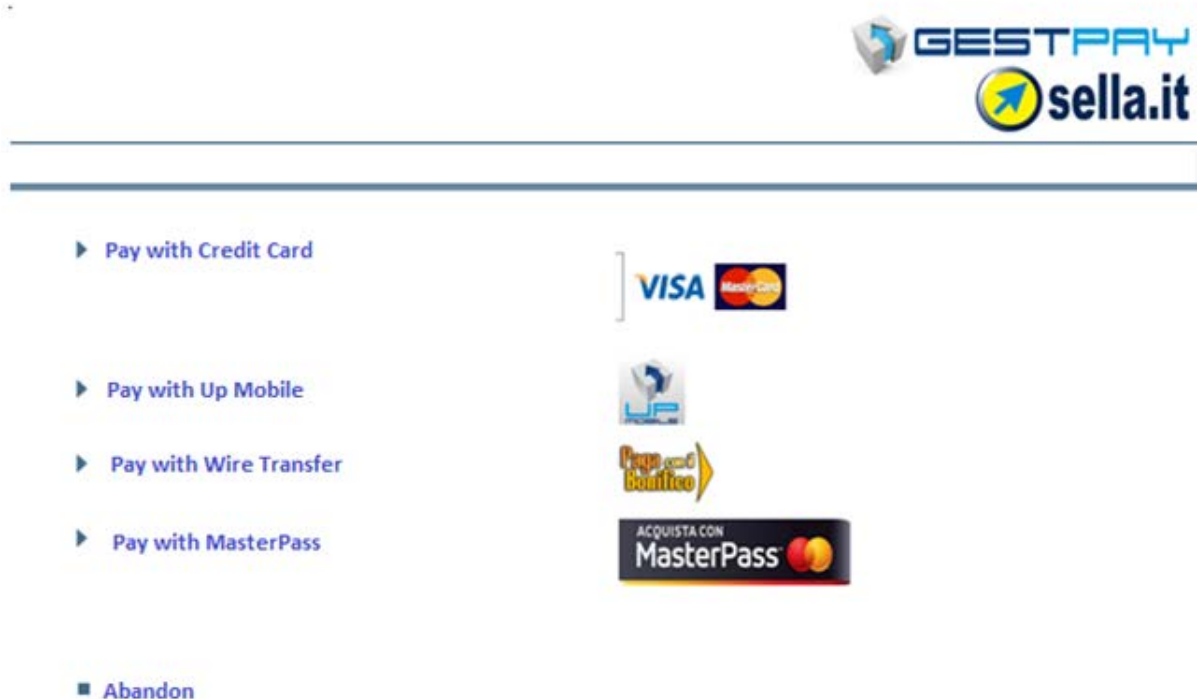
During my six months of internship in MasterCard, where I had the chance to work for the commercial launch of MasterPass, I’ve gained quite a good practical experience on the Italian online retailers. In fact I had to test many times different merchants checkout’s experiences under a consumer perspective. What I found out is a complicated, long and inconvenient customer experience. The majority of websites ask for registration, which can take from 1 to 2 minutes or longer if you do not have all the necessary information with you. A standard registration in fact usually asks for the following information: personal details (as name, surname, date of birth, sex, residence), shipping information and finally an email and password that will be used as login credential for the next access. In worst cases, the user will be forced to provide also other information, such as the billing address (not providing the possibility to check a box who just copy and paste the shipping details, if they are the same) and among the personal data they can require as mandatory, the fiscal code too. In the last case, the registration phase can last many minutes, testing the patience of the customer and his willingness to buy. Moreover, after having completed the registration phase, the customer has to take off his wallet and insert manually the payment details, after having skipped many web pages who are confirming the details just inserted before. If the consumer concludes the payment, he will surely do not remember it as a pleasant experience. Next time, in case he’s not remembering his login credentials, he will surely abandon the cart instead of trying to see what the “forgot your password” process looks like.

Unfortunately, still many websites in Italy have a customer experience very similar to that just exposed. Other have better online infrastructures, who permit the

customer to decide whether to perform the payment as a client (finalizing the registration) or as a host. In the last case, there is no necessity to sign in and the process is quicker for one time purchase. Anyway, in all cases, once reached the payment page, the problem is always the same: ancient and uncomfortable payment methods available. From my experience, matured in these six months, the majority of websites gives their customers the possibility to pay via cash-on-delivery(COD), via the postal service, via wire transfer or through credit card. Just in some cases the merchant has implemented the PayPal button, who is the unique quicker alternative offered to the client. In such a scenario, a digital wallet simplifying the checkout experience is the priority for the Italian e-commerce landscape.

For what concerns the Banca Sella merchants' payment page, the situation is different. As we can see from the following screenshot, taken from one of the merchant belonging to Banca Sella circuit, many alternative forms of payments are provided to the customers.

Figure 2721: Gest Pay Server - Banca Sella Checkout Page⁴⁴⁶



As we can see from the reported example above, Banca Sella provides its merchants with the Gest Pay Server where alternative payment methods are available, among which we can identify the “Acquista con MasterPass” button. The following page represents a great opportunity of all small and medium online retailers where an added payment method reflects in a greater conversion rate.

For what concern the big names on the Italian e-commerce, the logic underneath is different. The number of transactions that the PSP has to managed are much greater, as the complexity of the website infrastructure. This is the case of Vodafone who is the first big merchant who has accepted MasterPass. When dealing with the second factor of success, consisting in carrying on the acceptance platform big merchants, the strategy implemented by the e-wallet provider has to be different. MasterPass is

⁴⁴⁶ Banca Sella checkout page from Alimentari Martini website, Gest Pay Server, available at: <http://www.fratelli-martini.it> [Accessed 31 August 2014]

now accepted by big names as Vodafone, Media World, Esselunga, Monclick, Illumia, Meridiana, Salmoiraghi & Viganò, Venchi, Slow Food, Lush, Miss Blue Marine and many others⁴⁴⁷. Trenitalia will soon accept MasterPas on its platform too⁴⁴⁸. The following merchants do have the concern of providing to their customers always the best experience possible, but they still consider other factors and complications that are typical of a websites with millions of access per day. The consequence is that the complications and considerations underneath the decision of accepting a new form a payment cannot be the same of that a small-medium merchant. First of all, as we have already anticipated, such websites has a very complicated infrastructure, and any new implementation on that will require much a greater investment and work on the platform to be done. Moreover, it is also a matter of reputation: the possibility that a merchant as Amazon will accept a MasterCard's digital wallet is more than remote considering that it would mean leaving space to a competitor in its own website. On the big scale merchants, MasterCard had to build MasterPass acceptance carrying out individual negotiations and alliances. This is a much different approach from that applied to reach the critical mass through smaller online retailer websites. In conclusion, what should be recognized after the following analysis, is the high difficulty of building a strong acceptance, who could sustain the commercial launch of a new online payment method. The great difficulty relies in the combination of small and big merchants to reach in the good timings. Timings are fundamental: having a wide acceptance some months after the commercial launch can completely compromise the future of the new product, resulting in a big loss for the company distributing the digital wallet.

⁴⁴⁷ MasterPass website, available at: <https://shopnow.masterpass.com/it-it> [Accessed 31 August 2014]

⁴⁴⁸ Asca, December 2013, BNL: *prima banca in Italia a sperimentare MasterPass*, available at: [http://www.asca.it/news-Bnl_\(Bnp_Paribas\)_prima_banca_in_Italia_a_sperimentare_MasterPass-1348537.html](http://www.asca.it/news-Bnl_(Bnp_Paribas)_prima_banca_in_Italia_a_sperimentare_MasterPass-1348537.html) [Accessed 31 August 2014]

Conclusions

The deep aim of the following paper was to give a general prospect of the current Italian situation, for what concerns the online payment system and e-commerce development. In specific the paper had the objective of comprehending the strategy hidden underneath the decision made by MasterCard to launch an innovative product as MasterPass in a singular market as the Italian one. We have introduced the different players in such industry, on the e-wallet issuing side and on the acceptance side too. Chapter three tries to comprehend the opportunities assessed from the analysis of the Italian market, who could have taken MasterCard to the decision of investing in such an innovative industry in a peculiar market as the Italian one, who for many aspects still relies on archaic form and business models, still showing clear signs of immaturity. The analysis of the acceptance side, showed the real difficulty underneath a such commercial launch, which takes us to the beginning of chapter three, where the opinions of the most skeptics were reported. They bet on the failure of such innovative payment industry since it is too costly and too complicated to operate. The acceptance issue was one of the cardinal point of their arguments. Building a great acceptance network in synergy with the development of the issuing side, is very hard, even for a multinational company as MasterCard, already eradicated in the Italian market. For the moment, it seems going on the right direction, differently to what the skeptics thought, but just the time will tell us if MasterPass will reach or even overcome the PayPal levels, who still has the primate of most preferred online payment method in Italy.

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