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„Mobile Payments in Austria: Is Mobile Banking Paving
the Way for Mobile Payments?“

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1 Introduction

There are two undeniable facts about the society we live in. It is dominated by services and consumerism. In the developed countries, services are now the lead contributor in the GDP. Along with their importance for the economy, the notion of fostering “the process of servitization in many companies” (Zolnowski, Weiss, & Bohmann, 2014, p. 718) no matter which industry they belong to have raised as well. Services are not only an economic activity upon which a business model is being based, but also for many companies they represent “a key differentiator and therefore a source of sustainable and competitive advantage” (Fasnacht, 2009, p. 8). With the advancement of the technology, consumers on the one hand have been included in the early stages of the value creation process. In order to increase the value proposition, many companies now offer their customers additional services such as customization and personalization. You can nowadays design your T-shirt or even equip your BMW based upon your needs and wishes. On the other hand, the access to a certain service is being automated. By the means of technology, consumers at the same time initiate, use and benefit from using the service (the rise of self-service technology (SST)).

Furthermore, through technology advances, the access to a certain service is now completely being automated. “The Internet and the commercial development of the World Wide Web” (Hilton, Hughes, Little, & Marandi, 2013, p. 3), have an enormous impact on the behavior of the people. Nowadays we, the consumers of this world, have the luxury to be at home sitting on the sofa and buy our favorite book, a custom garment or book our holiday. And all of this thanks to the Internet and to the advancement of the technology. Empowered with “the device” of the contemporary history, the smartphone, it has become even easier to purchase goods or services being just a fingertip away of it.

Every trade exchange (of goods or services) has its monetary value, meaning that it is required to be paid for. Money is generally accepted means of payment. “It serves as a means of exchange, value preservation and measurement” (Lerner, 2013, p. 1). Due to technology advancement money undergone a change in its form of existence. The history of money chronicle a “dematerialization from metal money to e-money” (Kumbhar, 2013, p. 66). Money (same as many other goods and services) were being digitized and its value over time was being transferred to plastic card and lately mobile phones (PPP (paper – plastic – phone) evolution of

money). With the advancement of the technologies (as one of the most important triggers according to my opinion), the society strives for a cashless economy.

Banking is “a major service category” (Oliveira & von Hippel, 2011, p. 806) of the financial services family, dealing with payments and accounts as one of its core business activities. Though it seems rather conservative industry, banks are very much impacted by the developments in technology and over the years banks have adopted a vast amount of SST – from ATM to Internet banking to mobile banking. But, what is next?

When I have started the “university education” chapter of my life I was being told that in a foreseeable future technology will change the banking industry as a whole and that the money will not exist in its physical form. Is it the future now? During my studies I begun experiencing this foreseen (r)evolution and now at the end of my studies I want try and foresee other potential developments and advancements of the current situation in the banking industry. The latest trend in the banking industry is the mobile banking, as a complementary service distribution channel to the online and offline (bricks-and-mortar) banking and as a way of improving the value proposition to the customers. On the other hand, in a world “where money is increasingly more digitized” (Lukies, 2012, p. 41) there is a great plenty of other players (non-banking institutions) directly competing with the banks “on multiple fronts for the ownership of the customer transaction, customer relationship and customer experience” (ibid). And yet there is no bank playing the same game. Is mobile banking paving the way for successful mobile payment service offered by the banks? Are banks waiting to catch the right wave?

Due to high data sensitivity and an anticipated little chance of big banks revealing their strategy, this thesis will represent the current occurrences in the banking industry based on a numerous scientific papers as well as case studies and reports, published by prestigious consulting companies. The focus is set on Austria, for couple of reasons; it is a developed country with a relative conservative banking culture and a birthplace of innovative phenomenons. By means of strategic management tools, such as the Rosenzweig’s four types of decisions and Bower and Christensen’s model for disruptive technologies, it will attempt to conclude and to suggest whether mobile banking is paving the way for a mobile payment service and whether banks in this way are going to extend and defend their role in the payment industry.

2 Self-service technology

“The only constant is change” – Heraclitus

As discussed by Neu and Brown (2008), “increasing global competition, advances in technology, and the search for attractive market opportunities foster a process of servitization in many industries” (as cited in Zolnowski, Weiss, & Bohmann, 2014, p. 718). The advancement in information and communication technologies (ICT) and their ubiquitous character have brought the customers and goods producers / service providers together in a way that they both participate in the value creation process. This has impacted (and it still does) to a greater extent the service industry, so that the line between the customers and service providers has become blurred – the customers are at the same time initiate, use and benefit from the service (self-service technology (SST)). In this chapter the relationship between and the dependence between services and technology will be discussed, emphasizing the financial services as a distinctive category among the services.

2.1 Services. Financial Services.

It may though sound straight-forward and everyone would promptly say that they know what a service is. However it has obviously made quite difficulties for many scholars and researchers to give a uniform definition for the term *service* and “the definition of services has never reached consensus” (Parry, Newnes, & Huang, 2011, p. 20). The catalogue of services includes a wide range of activities. From transportation and storage through accommodation and food service activities, information and communication to activities of extraterritorial organizations and bodies (ISIC, [United Nations Statistics Division - Classifications Registry](#)). Imagine if we have a banker, an hotelier, a store manager, an IT and so on, sitting on the same table. The term service will certainly have a different meaning for every one of them (in terms of whom & how is the service being delivered).

The economy has survived the shift from an industry-driven to a service-driven economy. It is inevitable to admit the fact that we are living in a service society. “Services are a strategically

important business activity and a key differentiator and therefore have become the source of sustainable and competitive advantage in a global financial market” (Fasnacht, 2009, p. 8). Predominantly in the developed countries the service sector is the main contributor to the GDP. Austria is one of those countries where the tertiary sector counts for about 70% of the GDP (as of end of 2013; see Figure 1). This number is roughly the same compared with the whole EU area and the other highly developed economies (US and Japan), where the service sector has the largest share of the total output (73.5%, 79.7% & 75.0% respectively) (ECB, n.d.).

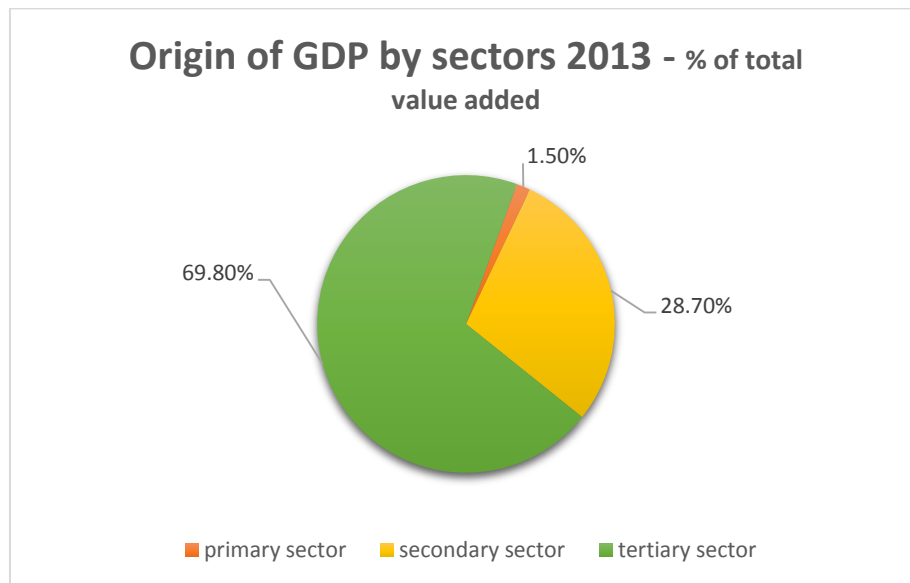


Figure 1: Origin of GDP by sectors 2013 - % of total value added¹

According to the aforementioned shift, “the distinction between products and services has a long history in marketing and other disciplines” (Araujo and Spring, 2006, p. 798). Comparing the both economic outputs helped many academics and scholars to make distinction between them and to find their appropriate definitions depicted in Figure 2. Additionally, the discipline of “economics has traditionally assumed that there is a distinction between products and services” (Dhaliwal, Macintyre, & Parry, 2011, p. 1).

¹ Own representation based on Wirtschaftskammer Österreich (WKO) (2014)

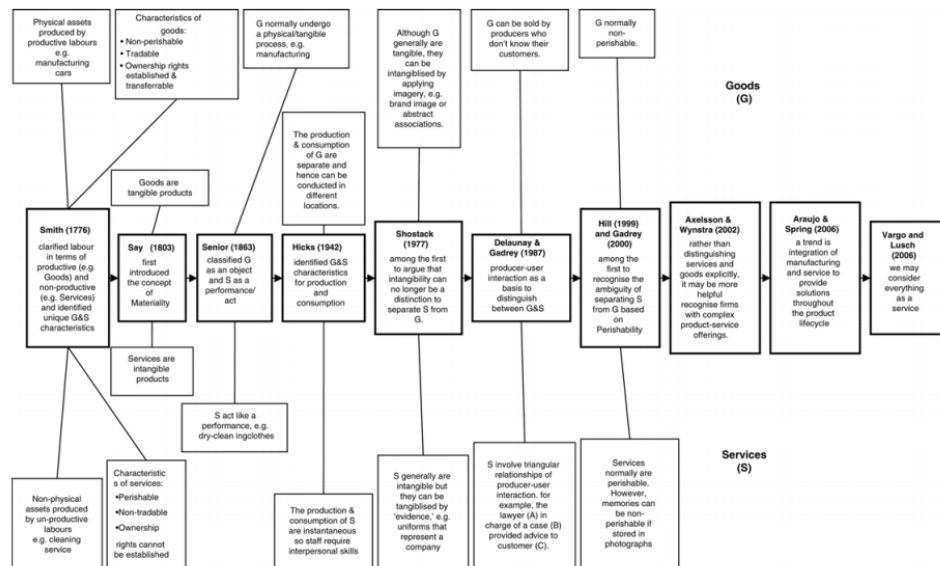


Figure 2: Defining goods and service: over 230 years and counting²

For the sake of brevity, the following definition is intentionally chosen:

Service is a type of economic activity that is intangible, is not stored and does not result in ownership ([What is Service? definition and meaning](#)).

It consists three of the IHIP (intangible, heterogeneous, inseparable, and perishable) characteristics of the services. Namely, the IHIP characteristics “have formed the basis of a consensus in most of the marketing literature” (Parry et al., 2011, p. 21).

According to Pine & Gilmore (1998, p. 97) there are four categories of economic offerings: commodities, goods, services, and experience. If we for a moment exclude the last category, experience (suggesting that “the value of experience is a significant intangible characteristic (perishable) of the service itself” (Parry et al., p. 23)), we can state that concerning the nature of the offering the intangibility is a feature that distinguishes the services from the commodities and goods (beside the fungibility moment, commodities are yet of tangible nature). And exactly this, the intangibility feature or to be more precise the way of how the service is being delivered, is an important (if not the most important) factor in the value creation process in the service economy. The consumer³ is a very crucial piece of the service value chain puzzle (See 2.2), due to the fact that the production coincides with the consumption of the service (inseparable) and

² As depicted in Parry, Newnes, & Huang, 2011, p. 27

³ Beside the substantial difference between the terms *customer* and *consumer*, both terms will be used synonymously throughout the whole thesis.

the fact that a same service is being differently perceived by every single consumer (heterogeneous) (Horn, 2009, p. 14).

Services are heterogeneous per se. ISIC (International Standard Industrial Classification of All Economic Activities) among the other economic activities classifies the services into 14 different sub-categories (ISIC H-U or 50-99, [United Nations Statistics Division - Classifications Registry](#)). A more clear classification of the service sector was proposed by D’Agostino, Serafini, & Ward-Warmedinger (2006, p. 9). They have differentiate the services into four sub-categories: “wholesale, retail trade, restaurants and hotels; transport, storage and communication; finance, insurance, real estate and business services; community, social and personal services. In both ways, banking services fall within the category of financial service industry” (ibid).

“The financial service industry is one of the central pillars of a national economy, in particular for countries in which it makes an important contribution to the gross domestic product” (Fasnacht, 2009, p.6). Fasnacht (ibid) emphasizes the importance of the financial services by stating that “within the last 25 years, firms belonging to the financial services have raised to top global companies, among which the banking industry has the biggest presence out of the global 2,000 largest companies (as of March 2008 according to Forbes)”. In order to demonstrate the significance and the importance of the banking services as a representative of the financial services family, two measures significant for the well-being of the economy (GDP – as an indicator of a country's economy health ([What is GDP and why is it so important?](#)), employees – as contributors to the GDP) will be pointed out:

	EU-27	Austria
Banking assets as % of GDP	284 ⁴	~400 ⁵
Number of bank employee (million)	3 ³	0.237 ⁶

Table 1: Comparing EU and Austria values

⁴ EBF, [International Comparison of Banking Sectors: Data sets for the European Union, euro area, United Kingdom, United States and Japan](#), as of 2011

⁵ Borgioli, Gouveia, Labanca, 2013, p. 15

⁶ Own calculation based on OeNB Statistic; due to consistency 2011 is taken as a comparison year

The focus in this thesis is the private banking sector, as “a pure service industry in which the service is performed almost entirely in the presence of the customer” (Horn, & Rudolf, 2011, p. 173). In particular, it deals with retail banking activities that class among private banking.

„Retail Banking ist ein auf den Massenmarkt fokussiertes Privatkundengeschäft. Dieses umfasst den Verkauf standardisierte Finanzprodukte und Finanzdienstleistungen an nicht bis weniger vermögende Kunden, die nur einen geringen bis gar keinen Beratungsbedarf haben. Dabei stehen Basisdienstleistungen wie die Abwicklung des Zahlungsverkehrs, Sparprodukte, Fonds, Kredite, Bausparen und Versicherungen im Vordergrund“ (Horn, 2009, p. 6).

As clear as the afore-stated definition is, the retail banking includes standardized financial products and services brought on a mass market serving not to less wealthy individuals. If we assumed that not to less wealthy customers are representatives of the younger population that do not dispose of their own financial resources, engaging them into the retail banking as early as possible can lead to a long-term commitment. However, higher customer segments are not excluded from the retail banking services (Horn, 2009, p. 6). And as standardized as they could be, the services in their inborn nature poses the heterogenic characteristic.

Following, we will see how and to which extent technology impacts the services, improves customer experience and with that reinforces the heterogeneity.

2.2 Services + Technology = Self-Service Technology (SST)

Referring to the shift of the economy (from industry-driven to service-driven), the thesis continues in the same manner comparing the productive processes of goods vs. services according to Dhaliwal et al. (2011, p. 2&3; see Figure 3 & 4). Both figures differ in respect to the stage at which the customer is being involved in the process. Though the illustrations are quite helpful, in the course of time with the advancement of the technology the things have changed. Not only in the sense of process by engaging with customers at a much earlier stage in the productive process of goods, “often through using the advantages of automation offered by the Internet” (Dhaliwali, 2011, p. 2; think of customized products), technology has also blurred the lines between *tangible* products and *intangible* services (think of digitalized products).

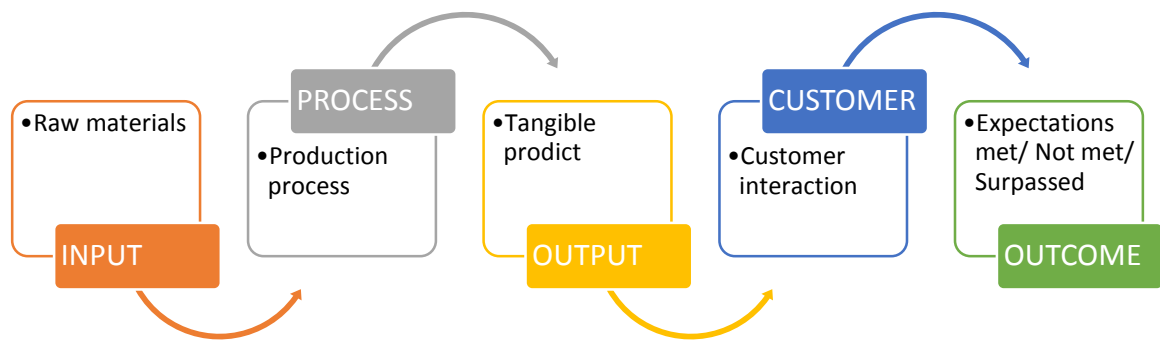


Figure 3: Productive process of goods⁷

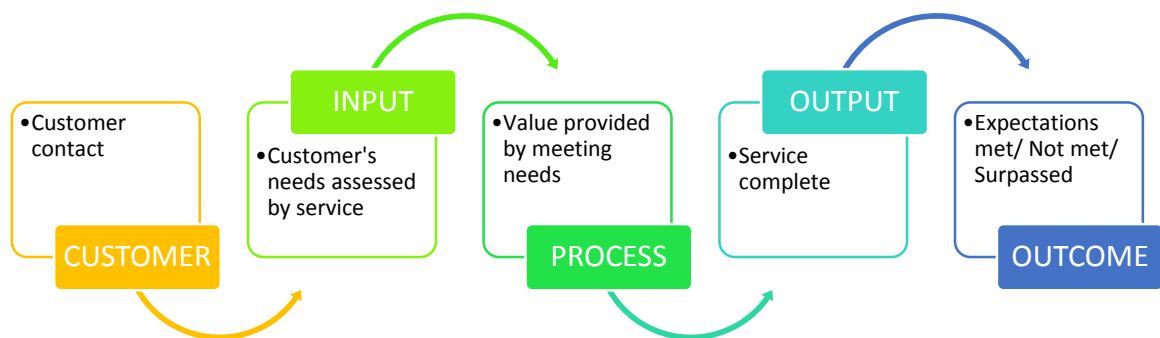


Figure 4: Productive process of services⁸

In the process of service delivery there are usually two parties involved: a service user (“firms or individuals that expect to benefit from using a service” (Oliveira & von Hippel, 2011, p. 806)) and a service producer (“firms or individuals that expect to benefit from selling a service” (Oliveira & von Hippel, 2011, p. 806)). The advancement in the information technologies (IT),

⁷ Own representation based on Dhaliwal et al. (2011, p. 2)

⁸ Own representation based on Dhaliwal et al. (2011, p. 3)

with an emphasis on “the Internet and the commercial development of the World Wide Web” (Hilton, Hughes, Little, & Marandi, 2013, p. 3), has brought further enhancement in the service delivery process and has “revolutionized the service landscape” (Lin & Hsieh, 2011, p. 194) by increasing the participation of the users themselves. As to that, Vargo & Lusch refer to the term as “the application of specialized competences (knowledge and skills) through deeds, processes, and performances for the benefit of another entity or the entity itself” (2004a, p. 2). According to Meuter et al. (2000, p. 50) “self-service technologies (SST) are technological interfaces that enable customers to produce a service independent of direct employee involvement” (as cited in Lin & Hsieh, 2011, p. 194). Service-Dominant Logic introduced by Vargo & Lusch (2004a) have already suggested the significant role of the consumer of the service in the process of value co-creation, referring at the same time to the inseparable feature of the services (consumer as the initiator and the user of the service) and to “the impact upon customer’s perception of whole service experience” (Hilton et al., 2013, p. 3).

Self-service is not something new. It has long existed – “think of do-it-yourself homeowners doing the work of professional contractors, or placing a call by dialing a telephone instead of using telephone operator” (Castro, Atkinson, & Ezell, 2010, p. 1 & 4). Hsieh (2005, p. 78) and Meuter, Ostrom, Roundtree and Bitner (2000, p. 52) categorize the self-service technologies into four groups based on the technology used for the service delivery:

1. *“Telephone & interactive voice response (IVR) systems* - Many companies utilize this form of SST for customer orders, customer billing inquiries, and customer surveys. Credit card companies, insurance companies, pizza restaurants, and even universities have taken advantage of these” (Hsieh, 2005, p. 78).
2. *“Interactive freestanding kiosks* - Many malls and retail outlets offer these both inside and outside their stores as a way to help you determine availability of a product, as well as to where to locate it in their facility. Some even print coupons. Large discount chains use kiosks in each store to help you determine what size battery or windshield wiper to put on your car, for example. You will also find kiosks at airports and hotels that print airline tickets and allow for quick checkout, and at movie theaters and malls that print movie tickets” (ibid).
3. *“Internet based or other on-line connection systems* - ATM's and pay-at-the-pump gas stations are two widely used examples of on-line technologies. Internet banking and bill management services are also becoming quite popular. Package delivery services also allow you to track packages 24 hours a day now” (ibid).

4. *“Video/DVD/CD based technologies* - This type of SST is typically used for educational purposes. Corporate entities use this media to train their employees, to familiarize sales representatives with new products, and to introduce new products to consumers. Universities have also gotten into the act in the last decade, providing undergraduate, graduate, and continuing education classes by video and CD formats” (ibid).

Castro et al.’s categorization (2010, p. 7) differs slightly from the one mentioned above. However, there are four categories as well, electronic kiosks, the Internet, mobile devices (including smart phones and smart cards), and the telephone, among which the video/DVD/CD based technologies are not being mentioned. In the same context (being used mainly for educational purposes), no wonder, they were being assimilated into the Internet applications. From Online Health, through Online Banking to access to government services, Internet application gave the self-services a new dimension and “have equipped consumers to take on new roles” (Castro et al., 2010, p. 18) in the service process.

2.3 SSTs among banking services

“The financial services industry is changing rapidly” (Abdullah, Suhaimi, Saban, & Hamali, 2011, p. 542). Many researchers argued about the fact that financial institutions, in our cases banks, are in flux (Arguedas, Pra, & Reina, 2014; Oliveira & von Hippel, 2011; Wessels, & Drennan, 2010; Fasnacht, 2009). Another inevitable fact is that “the growth of self-service provision is dependent upon technology” (Hilton & Hughes, 2013, p. 863). Banks are very much impacted by the developments in technology, so they count among the heaviest investors in ICT (Fasnacht, 2009, p. 8; Arguedas et al., 2014, p. 165; Mai, 2012, p. 2). But, not only technological advances has contributed “to a rapid growth in IT-enabled self-services” (Castro et al., 2010, p. 3). An increase in labor costs, turbulent market and regulatory environments, customer structure, their sophistication etc., have over two decades mutually influenced each other and are continuously “forcing financial service institutions to re-evaluate their current business practices” (Hanzaee, & Mirvaisi, 2011, p. 130). Customer Orientation of Service Employees: A Case Study of Iranian Islamic Banking (Based on COSE Model). International Journal of Marketing Studies, 3(4), p130. and to “re-examine how they are meeting their customer’s needs today and in the future” (Abdullah et al., 2011, p. 542).

As big its importance and significance for the economy, as big is the power of the banking industry to turn over the economy. (With great power comes great responsibility – Stan Lee) Banking industry has been considered as a rather conservative and resistant to change. “It used to be a moderate dynamic market for decades due to the stable industry structure, defined boundaries, clear business models, and identifiable players that made change linear and predictable in the past” (Fasnacht, 2009, p. 8). *Panta rhei*. Over the last 20 years things have changed. Stable industry structure with defined boundaries turned into “an industry with ambiguous structure and blurred boundaries” (ibid), where neither the suppliers’ (vast numbers of new market entrants) nor the demanders’ action and/or reaction to the new challenges can be easily predictable.

Martins, Oliveira, & Popovič argue that “organizations can now profit from the evolution of new technologies and adapt to the emerging ways of interacting with their clients” (2014, p. 2). As a source for profitable growth (Fasnacht, 2009, p. 8), innovations are considered as a reasonable response to the fast changing environment. According to Judt (2006, p. 21) there are “sichtbare” (visible) and “fühlbare” (tangible/noticeable) innovations in the banking industry, that do not always have to be attached to the product or process itself. Thus, he points out innovations referring to “the establishment of new delivery channel (e.g. bank shops), development of a new transaction process (e.g. e-Banking) or launch of a new price system (e.g. all inclusive account) etc.” (Judt, 2006, p. 21). The other elements of the marketing mix (product, price, place, promotion, people, process, physical evidence alias 7Ps according to Magrath (1986)) are affected as well. Independent from the type of innovation, Chakravorti, & Kobor (2005, p. 12) suggest an innovation timeline (see Figure 5). Investing in an innovation “may occur at different points in the evolution of the innovation to commoditized product” (ibid). Depending on the phase companies invest in, different profit margins can be expected. While in the early phases margins are high, investments in new proprietary technology (being a first mover) are high as well. As the innovation matures and “succumbs to commoditization” (ibid), the profit margins decrease and companies can rely on economies of scale (ibid, p. 16).

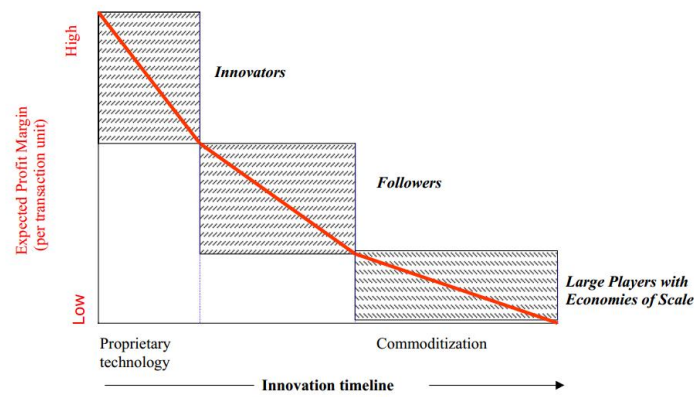


Figure 5: The innovation timeline⁹

Dapp (2012, p. 1) argues about the “increasing pressure in one of the financial sector’s core business segments: accounts and payments”. Their importance hides in the answer of the question: “What is actually a bank?”. According to Macho, Pater & Seyffertitz (1994, p. 31) the monetary intermediation services (taking deposits and granting credits) comprise the core service provision functions. And the only way to provide them is by simply having an accounts and by making a payment. Accounts and payments fall into the group of retail banking services. Exactly in this group of services since many years there have been introduced different types of SSTs although with a smaller amount of IT-enabled self-service at the beginning. ATMs and financial (debit and credit) cards are established and well-known examples after the pioneers of the cashless payments were introduced, such as the check, remittance and direct debits. And they are enormously being used nowadays.

As it was already mentioned (See [2.2](#)), IT advancement, with an emphasis on “the Internet and the commercial development of the World Wide Web” (Hilton et al., 2013, p. 3), “has further enhanced self-service delivery and revolutionized the service landscape, allowing companies to use variety of SSTs that increase customer participation” (Lin & Hsieh, 2011, p. 194). Therefore, many banks has extended their service portfolio by “adding clicks to bricks” (Fernández-Sabiote and Román, 2012). Nowadays, “SSTs can be accessed by customers in situ within the operating sites of organizations, ..., or remotely, for example through the Internet (Hilton et al., 2013, p. 3) or more recently through their mobile (smart)phones. “Since the mid-1990s, there has been a fundamental shift in banking delivery channels toward using self-service channels such as online banking services” (Pikkarainen, Pikkarainen, Karjaluo, & Pahnla, 2004, p. 224).

⁹ As depicted in Chakravorti, & Kobor (2005, p. 32)

Online banking is another example of a (r)evolution respective the account access or making payment. “Online banking (OLB)¹⁰ provides consumers with a set of information-related benefits, including easy access, responsive systems and the opportunity for the user to control bank account at any time and place and access customized information content enabling customers to make investment and finance-related decisions” (Loureiro, Kaufmann, & Rabino, 2014, p. 187). Thus, OLB is “an Internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments” (Pikkarainen et al., 2004, p. 224) “without any interaction with, or assistance from, bank employees” (Loureiro et al., 2014, p. 187).

Eistert, Gordon, Deighton, Ullrich, & Marcu in their study argue that digital banking is not a “hot” topic among the bankers around the world; “it is a necessary part of every bank’s agenda as a way to overcome outdated approaches and mismanaged customer relationships” (2013, p. 1). Out of this study it can be concluded that among the top to high rated countries according to Digital Banking Readiness Index (DiBRix) most of them are from the old continent. DiBRix refers not to “just having the appetite for digital banking” (ibid, p. 16). It comprises the entire banking environment, technology developments, competitive challenges (market dynamics), customer demands, and regulations (ibid, p. 16). Austria is on the 9th place, before Switzerland, France and Germany (its closest neighbors). Based on the data of Statistik Austria, we can see that besides the other purposes of using the Internet ([STATISTIK AUSTRIA - IKT-Einsatz in Haushalten](#)), there is an evident increasing tendency of the OLB usage among Austrians (see Figure 6).

¹⁰ Online banking, Internet banking or electronic banking are used as a synonyms throughout the whole thesis.

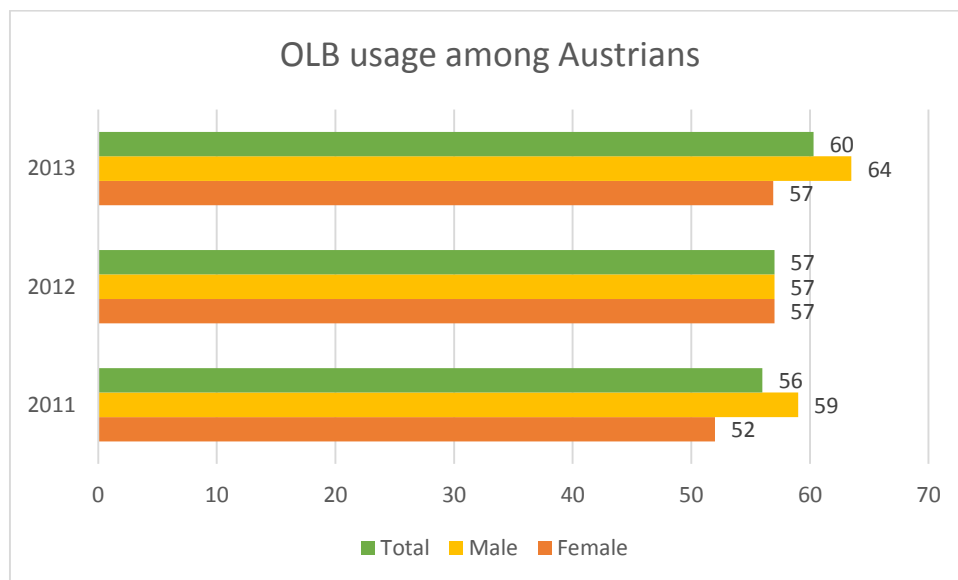


Figure 6: OLB usage among Austrians¹¹

Innovations are considered not only as a source for profitable growth (Fasnacht, 2009, p. 8), but as a source of gaining a competitive advantage and long-term survival on the market (Judt, 2006, p. 19). By digitizing the banking services, the banks themselves can easily trace (via data mining tools) and quickly respond to the specific customer wants and needs.

The latest innovation after the evident success of OLB introduction is the mobile banking, as “an emerging facet of electronic banking” (Wessels, & Drennan, 2010, p. 547). “Mobile banking facility removes the space and time limitations from banking services such as checking account balances or transferring money from one account to another” (Rao, 2013, p. 593) meaning that a consumer’s account is as mobile as the consumer her-/himself. (More about mobile banking in Chapter 3)

As it was mentioned above, the banking industry turned into “an industry with ambiguous structure and blurred boundaries” (Fasnacht, 2009, p. 8), where the barriers to entry the market are significantly lower than 20 years ago and where neither the suppliers’ (vast numbers of new market entrants) nor the demanders’ action and/or reaction to the new challenges can be easily predictable. “As Bar (2005) notes, technology evolves in ways not anticipated by its designers and new applications often result from the accumulated experience of users themselves” (as cited in Maurer, 2012, p. 590). Various kinds of competitors are confronting traditional bank with the help of technological developments and web based applications (Dapp, 2012, p. 1) offering

¹¹ Own representation based on Statistik Austria data from the last three years.

alternative banking solutions. Oliveria & von Hippel's "central finding is that user firms often develop and self-provide computerized versions of the services earlier than banks or other types of financial service producers begin to offer them" (2011, p. 806). This raises the question *which of the current alternative payment possibilities will be commercialized by the banks?* Banks should truly consider to extend the horizon of perceiving the smartphones as another service distribution channel (as Gupta, (2013, p. 3) suggests) and properly make use of its potential.

3 The power of the letter “m”

Evolution or revolution? The essential element that helps us distinguish the one term from the other is TIME. If the change occurs slower and more gradual it is an evolution (Guedeney, 2012, p. 6). If quick, sudden and abrupt we are talking about a revolution (ibid). With the introduction of the Internet our everyday lives have been revolutionized in many aspects. The way of communication, the way of how information can be acquired and the way of buying and selling products and services have been transformed. Everything has moved to the virtual environment and the constraints of time and place have been removed. Along with the technological advances and the socio-demographic shifts has come to an extension to the ubiquitous characteristic of the Internet. Thus, to the “anytime, anywhere” paradigm “on any device” has been added due to the high penetration rate and acceptance of the smartphones – the key component of the chain of the next generation of the digital mobility. In this chapter it will be discussed the extension of and “the next logical stage in the evolution of the World Wide Web” (Dapp, 2013, p. 1) environment.

3.1 “m” stands for Mobile

The advancement in the information technologies (IT), with an emphasis on “the Internet and the commercial development of the World Wide Web” (Hilton et al., 2013, p. 3) have resulted in significant progress towards strategies, requirements, and development of e-commerce applications (Varshney, & Vetter, 2002, p. 185). The Internet itself has transformed the way people interact with each other, the way they search for information, how they acquire products and services and so on. In addition to that, “the wide-ranging economic developments, e.g. the integration of world economies, have made a significant impact towards increasing the mobility of the people” (Tiwari, Buse, and Herstatt, 2007, p. 3).

During the dot-com fever (late 90s and the beginning of the new millennium) many companies have changed their priorities and strategies by “adding clicks to the bricks”. Many others have recognized the potential of the Internet environment and took the challenge of operating and being present only virtually (think of eBay or Amazon for example). In this context, the need of defining the term of eCommerce is evident. “In its broadest sense, electronic commerce refers

to the use of electronic means and technologies to conduct commerce, including within-business, business-to-business, and business-to-consumer interactions” (Choi, Stahl, & Whinston, 1997, p. 13). Therefore, every action conducted online (including “searching for product information, ordering products, paying for goods and services, customer service, whereas noncommercial activities such as entertainment, communication, filing and paying taxes, managing personal finance, research, and education” (ibid, p. 9 & 13)) with the help of an Internet connection (“the principal vehicle of eCommerce” (Zwass, 1996, p. 5)) and a computer is counted in the group of eCommerce activities.

(As the time goes by and as our society develops) The nature and the structure of the current dynamic fast-changing environment, makes us (people) more aware of everything that is happening around us. On one hand we are flooded with information that we want to process as fast as possible and at the end make use of. On the other hand, the time itself is becoming a scarce resource, so what people strive for nowadays is agility, flexibility, quick responsiveness from every point of view. Along with the technological advances and the socio-demographic shifts has come to an extension to the ubiquitous characteristic of the Internet. Thus, to the “anytime, anywhere” paradigm “on any device” has been added.

The next new and big thing in the eCommerce is the mCommerce. Tiwari et al. refer to it as “an extension of Electronic Commerce to wireless mediums” (2007, p. 3). In its broadest sense mCommerce includes “any transaction with a monetary value – either direct or indirect – that is conducted via a wireless telecommunication network” (Barnes, 2002, p. 92). mCommerce is not a new concept. After the wireless telephone was introduced to the world, many scholars and researchers (for over a decade) discussed its importance and potential (Barnes, 2002; Tiwari et al., 2007).

But, the cornerstone of the mCommerce is the proliferation of the smartphones (not long ago). Smartphones are becoming an indispensable part of our everyday lives. The telephone itself has long ago exceeded its function of being a device for making a simple phone call. Nowadays when speaking about phones, we think of a device which can literally replace our PC & camera; capable of multitasking; able to connect to the Internet; sending e-mails etc. According to NIST’s definition a smart phone is “*a full-featured mobile phone that provides users with personal computer like functionality by incorporating PIM (personal information manager) applications, enhanced Internet connectivity and email operating over an Operating System supported by*

accelerated processing and larger storage capacity compared with present cellular phones” (NIST, 2010, p. 4). Thus, smartphones being equipped with a sophisticated and an advanced technology (larger storage capacity, faster processors, longer battery life etc.), can literally replace the computers and laptops and “open lucrative opportunities to merchants and service providers” (Dahlberg, Mallat, Ondrus, & Zmijewska, 2008, p. 165).

According to ITU (International Telecommunication Union) “the number of mobile-cellular subscriptions worldwide is approaching the number of people on earth” (ITU, 2014, p. 3). With so high penetration rate (worldwide 96%; *ibid*, p. 4) and customer acceptance of the smartphones, there cannot be any doubt that mobile commerce is increasingly gaining attention not only by the scholars and researchers, but among the marketers as well. What once was the eCommerce is nowadays the mCommerce; a new playground with huge potential for conducting business and another step closer to the customers.

“Going “mobile” can be considered as one of the main global trends of the 21st century” (Höhler, 2012, p. 5). However scary it may seem, the minute by minute rapid advance in technology is undoubtedly making businesses dependent today on technological advances only made available just years ago. This notion of inter dependency between business and technology is stirring up an essential need to always stay vigilant of new things. Hence, the financial industry is not an exclusion and as the other industries is affected by as well and cannot remain immune of it. “Mobile Commerce services in the financial sector are generally known as mobile financial services (MFS) and they comprise of two applications, “Mobile Payment” and “Mobile Banking”” (Tiwari et al., 2007, p. 3).

3.2 Mobile Banking

The banking industry as one of the heaviest investors in information technology has been over the decades using the benefits of the IT. “Not only to run the internal business activities and to promote products, but also to dematerialize the customer relationships” (Martins et al., 2014, p. 2) (in other words to introduce and make full use of SST). On top of it, banks are cutting down on operating expenses and can “act and fight” on different fronts serving and reaching different customer segments through diverse distribution channels.

In an evidently uncertain and fast changing environment innovations are considered as a reasonable response to it (as stated [above](#)). And as it has been argued (Anyasi, & Otubu, 2009; Chen, 2013; Accenture, 2013a) financial institutions failing to introduce innovations or to adapt to and be in step with the new technology trends have less chance to differentiate their products and services and retain their competitive advantage. In the context of new trends and as a result of the technological advances, the importance of the bank branches “as reference points in the distribution process” (Arguedas et al., 2014, p. 167) has been diminished. Consequently, new distribution channels, “such as telephone banking, ATMs, Internet, and mobile phones have become more firmly established” (ibid). And exactly distribution channels and customer interfaces are on the agenda of many bank executives from US and Europe as the main focus areas for innovation, as reported by Sullivan, Garvey, Alcocer, & Eldridge (2014, p. 35).

“Internet banking or online banking (OLB) has emerged as one of the most profitable eCommerce applications over the last two decades” (Lee, 2009, p. 130). According to Aladwani (2001) and Yiu et al. (2007) “Internet banking is defined as the use of banking services through the computer network (the Internet), offering a wider range of potential benefits to financial institutions due to more accessibility and user friendly use of the technology” (as cited in Martins et al., 2014, p. 2). As it was already discussed above (See [2.3](#)), “OLB provides consumers with a set of information-related benefits, including easy access, responsive systems and the opportunity for the user to control bank accounts” (Loureiro et al., p. 187) by removing the time and space constraints characteristic for the “offline” (in branch) banking.

Advancement of the ICT; mobility as one of the main global trends of the 21st century (as stated above); high penetration rate and acceptance of the smartphones; mixed altogether they trigger the digital mobility as “the next logical stage in the evolution of the World Wide Web” (Dapp, 2013, p. 1). “Technological developments especially in the field of telecommunication have made it possible to offer innovative, location-sensitive services on ubiquitous (“anytime, anywhere”) basis to customers on the move” (Tiwari et al., 2007, p. 3). The mobile technology has enriched the “anytime, anywhere” paradigm and “on any device” moment has been added to it. “The exponential growth of wireless and mobile networks has brought vast changes in mobile devices, middleware development, standards and network implementation, and user acceptance” (Varshney, Vetter, & Kalakota, 2000, p. 32).

Translated in banking context, along with the technology advances new opportunities have arisen for both banking service users and providers. Thus, besides one of the most established examples of alternative banking the ATM (upgraded with additional functions such as cash recycling) and OLB, “users are nowadays being able to conduct banking services at anyplace and at any time and to connect banking service easily and quickly with mobile devices” (Gu, Lee, & Suh, 2009, p. 11605). Given that, mobile banking (mBanking) was born and it has joined the family of alternative¹² banking. Tiwari and Buse (2006) define mBanking as following:

“Mobile Banking refers to provision and availment of banking and financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market transactions, to administer accounts and to access customized information” (as cited in Tiwari et al., 2007, p.3).

mBanking is being usually offered in form of an mobile application downloadable in the App Stores available for different operating systems (e.g. Andorid or iOS). In Austria all of the established and well-known banks (UniCredit Bank Austria, Erste Bank, Raiffeisen Bank, BAWAG etc.) have their own mobile banking application. mBanking differentiates itself from its closely related alternative banking methods, telephone banking and mBanking as provided at its infancy (banking via SMS), by being completely autonomous SST and by excluding a direct or an indirect bank employee involvement.

Currently the mBanking, as it is consumed and configured, is being perceived as an additional channel of providing the usual services offered in OLB and is adding value to the service delivery process. As argued by Pousttchi and Schurig (2004), “the simultaneous and increasing diffusion of mobile phones and especially WAP¹³-enabled devices has made the transformation of banking applications to mobile devices a logical development in electronic banking” (Laukkanen, 2007, p. 789). The only difference is the fact that the banking services can be retrieved on the mobile device on the go, and therefore a consumer’s account is as mobile as the consumer her-/himself.

As discussed by many information systems (IS) researchers (Herzberg, 2003; Kleijnen et al., 2004; Laukkanen, 2007; Laukkanen and Lauronen, 2005) it has been proposed that “mobile banking can be considered as one of the most significant technological innovation, which is

¹² Alternative banking as a way of conducting banking services outside a branch.

¹³ Wireless Application Protocol (WAP) – A standard that defines the way in which Internet communications and other advanced services are provided on wireless mobile devices. (NIST, 2013, p. 214)

emerging as a key platform for expanding access to banking transactions via mobile or handheld devices, and operating wireless communication technologies” (as cited in Lin, 2011, p. 252).

“In the development of mobile banking, banks enable users to access account balances, pay bills, and transfer funds through cell phone or other mobile device, instead of visiting banks and internet banking based on computer” (Gu, Lee, & Suh, 2009, p. 11605). Summed up, “the term mobile banking usually refers to the following three basic applications: mobile account, mobile brokerage (purchase and sale of securities) and mobile financial information services (account balance, securities deposit account, current stock prices, stock alerts, etc.)” (Lerner, 2013, p. 4). According to the latest ING International Survey (2014) on how people in Europe are using mobile banking, Austria counts among the top 5 countries (Turkey, Netherlands, Poland and Spain) with the highest mobile banking usage (43% (2014)) and shows a positive tendency in this regard compared to previous year (see Figure 7).

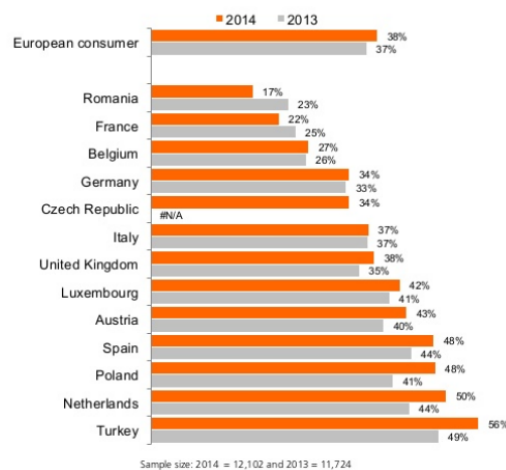


Figure 7: Do you use mobile banking?¹⁴

Among the Austrians (as of ING International Survey (2013)) the most used mobile banking service is checking account balance (see Figure 8).

¹⁴ EU figures based on the ING International Survey “exploring how people in Europe are using mobile banking and new ways to pay” (ING International Survey (2014)).

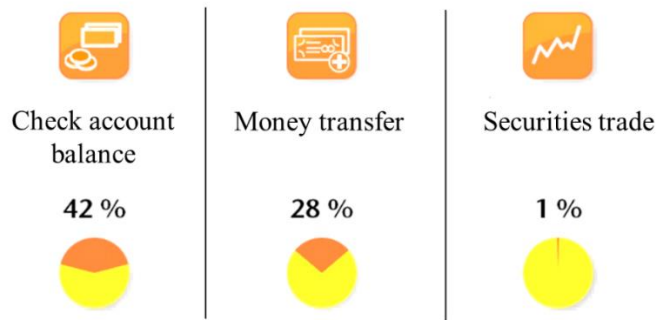


Figure 8: Mobile banking - usage purposes¹⁵

In this era of omni-channel service distribution, in which they are “rather complementary and not mutually exclusive” (Arguedas, Pra, & Reina, 2014, p. 167), every channel has its own chance. It is a matter of time which one will conquer the other one(s). Undoubtedly, mBanking is gaining more on importance and attractiveness among the users and banks on the one hand and the researchers and scholars on the other. As discussed by Anckar and D’Incau (2002) and Luarn and Lin (2005) mBanking “provides value for consumers, above other banking channels, through ubiquitous access, time convenience, and mobility” (as cited in Wessels, & Drennan, 2010, p. 548).

Due to the high penetration rate and acceptance of the smartphones, banks can use their potential and “retain existing banking users in providing a new system (mobile banking) into the existing systems and have an opportunity to convert cell phone users into banking users” (Gu, Lee, & Suh, 2009, p. 11605). It is inevitable to state that the “digital technology and rapid-fire changes in customer preferences are threatening to weigh down those full-service banks that limit themselves to products and services that get primarily distributed through physical channels” (i.e. branches) (Accenture, 2013a, p. 3).

“You can't do today's job with yesterday's methods and be in business tomorrow” – George W. Bush

¹⁵ Source: ING International Survey (2013)

3.3 Mobile Payments

As it was stated above (See [2.3](#)) accounts and payments fall into the group of retail banking services. “Both channels are positively correlated because accounts and payment services often serve as anchor product and there is cross-selling potential” (Dapp, 2012, p. 3). In Austria according to figures of OeNB¹⁶ from April 2014 there were 8.2 million transferable overnight deposit accounts, whereas “almost 90% of the Austrian citizens (from the age 15 up) have payment cards” (OeNB, 2013, p. 1). Retail payment services are perceived as “stable sources of income, contributing with the fees from payment services (or bank account management) to the non-interest income and helping to attract deposits (and thereby add to interest income)” (Dapp, 2012, p. 3).

We live in a consumer society. We buy products, acquire services, and devote ourselves to leisure activities. And for all that it is normally required to pay (the essence of trade¹⁷), because every trade exchange (of goods or services) has its monetary value. With the advancement of the technologies (as one of the most important triggers according to my opinion), the society strives for a cashless economy. The latest World Payments Report 2013 issued by Capgemini and The Royal Bank of Scotland (RBS) confirms the global trend of cashless payments (see Figure 9).

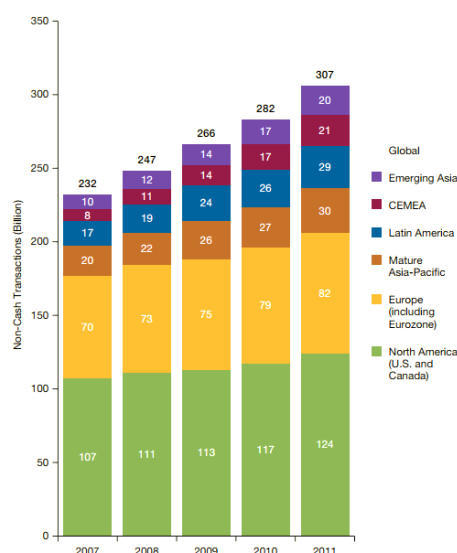


Figure 9: Number of Worldwide Non-Cash Transactions by Region (Billion), 2007–11¹⁸

¹⁶ Oesterreichische Nationalbank = National bank of Austria

¹⁷ A basic economic concept that involves multiple parties participating in the voluntary negotiation and then the exchange of one's goods and services for desired goods and services that someone else possesses. The advent of money as a medium of exchange has allowed trade to be conducted in a manner that is much simpler and effective compared to earlier forms of trade, such as bartering. (Source: [Trade Definition | Investopedia](#))

¹⁸ As depicted in World Payments Report 2013 (Capgemini and The Royal Bank of Scotland (RBS), 2013, p. 7)

The history of money chronicle a “dematerialization from metal money to e-money” (Kumbhar, 2013, p. 66). The being of the paper money (initially introduced as paper currency in China in 900 A.D., as depicted by Lerner (2013, p. 3)) and its value were being transferred to plastic card and lately mobile phones (PPP (paper – plastic – phone) evolution). Put it differently, money (same as many other goods and services) were being digitized. And exactly this phenomenon opens opportunities for new participants (other than banks) on the (cashless) payment market.

Among the different types of cashless payments (such as check, remittance and direct debits as the pioneers), ATMs and financial (debit and credit) cards are comprised in this group of payment methods. Financial card market (with the first credit card being introduced in 1958 (according to Lerner (2013, p. 3), more than a half a century ago) besides its high maturity still takes the biggest piece of the non-cash market’s pie (Capgemini and The Royal Bank of Scotland (RBS), 2013, p. 10). In the course of time, with the commercialization of the Internet (eCommerce; recently mCommerce as well) not only the way of how we buy has changed, but along with that (mutually dependent) the way of how we pay has also changed. Thus, though slowly but surely (not as anticipated), the cashless market opens space for new entrants and financial cards (as mostly accepted payment method) will fight on the same front with new competitors – electronic and mobile (e-/m-)payments.

Analogous to the fact that mCommerce is “an extension of eCommerce to a wireless mediums” (Tiwari et al., 2007, p. 3), “m-payments are a natural evolution of e-payments” (Kim, Mirusmonov, & Lee, 2010, p. 310). “E-payments are payments made over the internet, usually in one of these three ways:

1. Making a remote payment card transaction through the internet.
2. Online-banking based credit transfers or direct debits under which the payer uses an online banking portal for authentication (currently only operational at domestic level; e.g. Sofortüberweisung or EPS)
3. Payments through e-payment providers, with which the consumer has set up an individual account. Accounts can be funded through ‘traditional’ payment methods, for example bank transfers or credit card payments” (European Commission, 2012, p. 4).

As argued by Ondrus & Pigneur (2006), with the increase in popularity of mCommerce, “m-payment will continue to facilitate secure electronic commercial transactions between

organizations or individuals” (as cited in Kim et al., 2010, p. 310). Figure 10 & 11 speak in favor of the new payment methods.

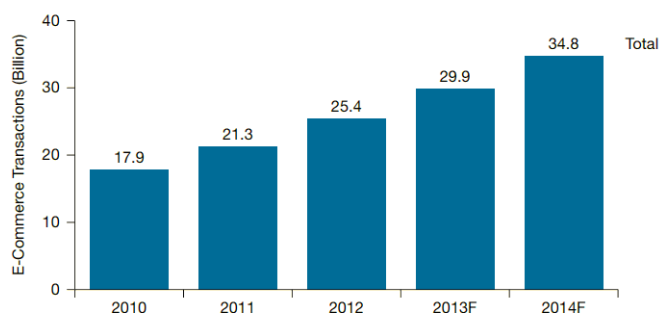


Figure 10: Number of Global E-Commerce Transactions (Billion), 2010–2014F¹⁹

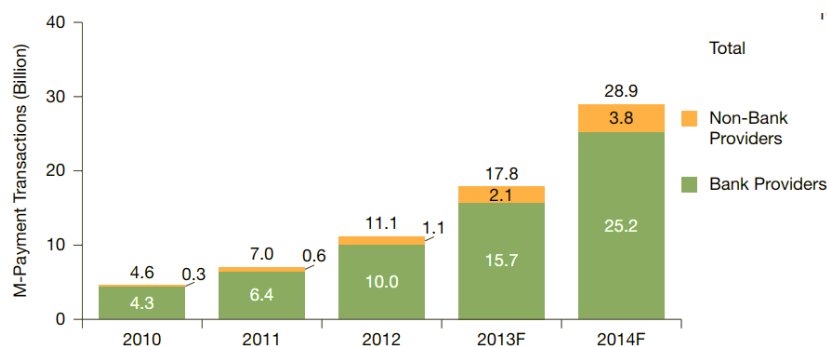


Figure 11: Number of Global M-Payments Transactions (Billion), 2010–2014F²⁰

In Figure 11 two categories have been differentiated – bank and non-bank providers. Exactly this captures the essential difference between mBanking and m-payment (both as sub-groups of the MFS), due to the fact that “(m-)payment constitutes an independent business field that does not necessarily involve banks” (Tiwari et al., 2007, p. 3). The category of payment service providers (other than banks) include payment information or cash processing providers, transaction processing service providers for payment cards and payment terminals (Burger, Habacht, Oppitz, Pammer, Pieber, Radakovits, & Schneeberger, 2009, p. 14; see Figure 12).

¹⁹ As depicted in World Payments Report 2013 (Capgemini and The Royal Bank of Scotland (RBS), 2013, p. 15)

²⁰ As depicted in World Payments Report 2013 (Capgemini and The Royal Bank of Scotland (RBS), 2013, p. 15)

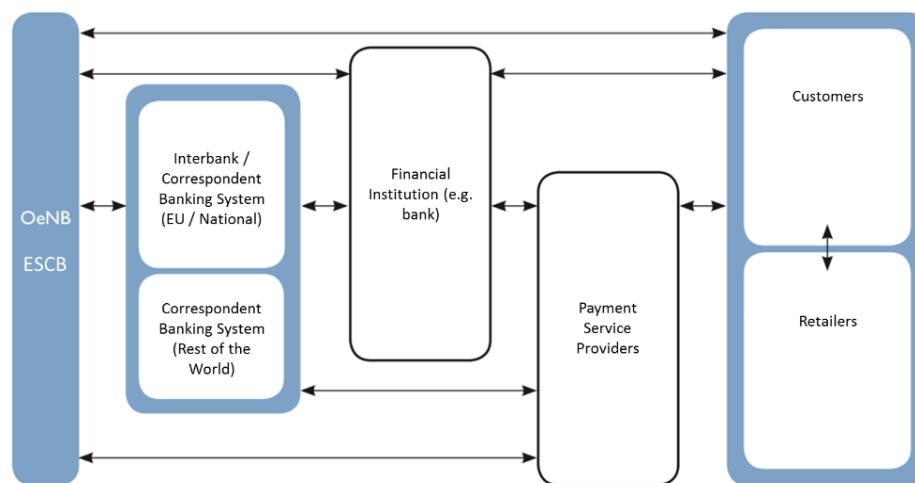


Figure 12: Payment market participants²¹

Moreover, the definition of m-payments (see below) comprises “mobile payment transactions (remote m-payments) conducted via mobile banking systems” (Mallat, 2006, p. 2). This raises the need for making a clear distinction between two concepts of MFS. “Mobile banking services are based on banks’ own legacy systems and offered for the banks’ own customers” (ibid). “Mobile payments, on the other hand, are offered as a new payment service to a retail market, which is characterized by 1) a multitude of competing providers such as banks and telecom operators, 2) two different and demanding groups of adopters; consumers and merchants, and 3) challenges regarding standardization and compatibility of different payment systems” (ibid).

Same as services, many have tried to define m-payments (Ondrus, 2003; Dahlberg et al., 2008; Kim et al., 2010). Still there is not any commonly accepted definition of mobile payment (as straight-forward as the name suggests). Due to its importance and reputation, the following definition and classification given by the European Commission was chosen:

“M-payments are payments for which the payment data and the payment instruction are initiated, transmitted or confirmed via a mobile phone or device. This can apply to online or offline purchases of services, digital or physical goods. Mobile payments can be classified into two main categories (see Figure 13):

1. *Remote m-payments mostly take place through internet/WAP or through premium SMS services which are billed to the payer through the Mobile Network Operator (MNO). Most remote m-payments through the Internet are currently based on card payment schemes. Other solutions, based on credit transfers or direct debits, are technically*

²¹ As depicted in Burger, Habacht, Oppitz, Pammer, Pieber, Radakovits, & Schneeberger (2009, p. 14)

feasible and possibly as secure, efficient and competitive, but seem to have difficulties entering the market.

2. *Proximity payments generally take place directly at the point of sale. Using Near Field Communication (NFC), the leading proximity technology at this stage, payments require specifically equipped phones which can be recognised when put near a reader module at the point of sale (e.g. stores, public transport, parking spaces)” (European Commission, 2012, p. 5).*

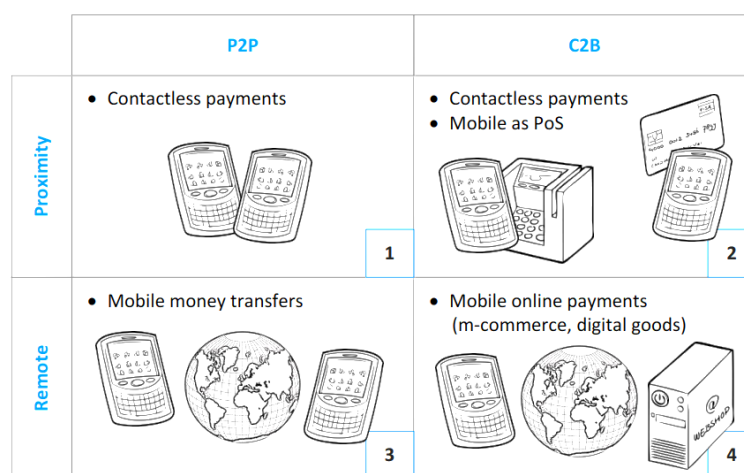


Figure 13: Mobile payment categories²²

The definition and classification of mobile payments show the complex nature of the mobile payments ecosystem, containing various m-payment market participants (including “mobile network operators (MNO’s), financial institutions, handset manufacturers or technology providers) providing the payment service through numerous enabling technologies (such as SMS or Unstructured Supplementary Service Data (USSD), NFC, and mobile Internet”) depending on “the distance and relation between buyers” (de Bel & Gaza, 2011, p. 16-19). In addition to that, over the last years different viable economic models develop in parallel around the world, i.e.:

- “Bank centric model: a bank is the central node of the model, manages the transactions and distributes the property rights.
- Operator centric model: the same scenario with the operator in the strategic role.
- Collaborative model: financial intermediaries and telephonic operators collaborate in the managing tasks and share cooperatively the proprietary rights.
- Independent service provider (ISP) model: in this model, a third party of confidence operates as an independent and “neutral” intermediary between financial agents and

²² As depicted in [Innopay \(2012\)](#) report (de Bel & Gaza, 2011, p. 14)

operators. Google or PayPal are the ISP the most frequently associated to this model (handset manufacturers are not excluded)” (Chaix & Torre, 2011, p. 2 & 4).

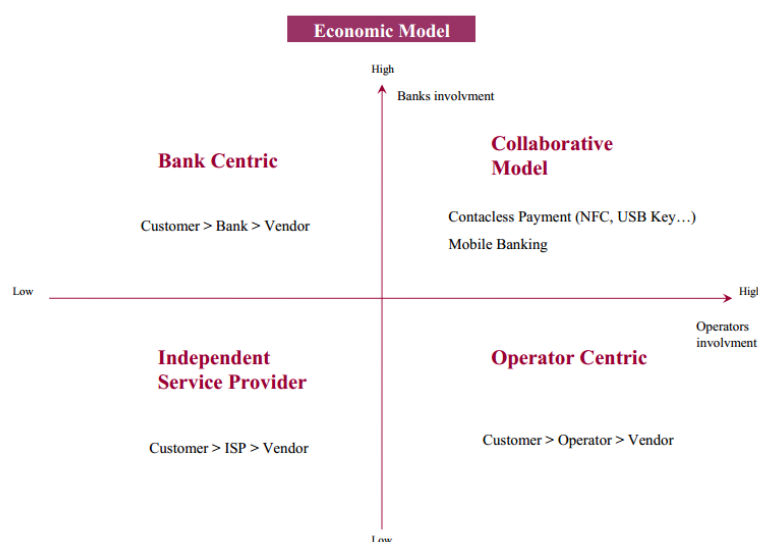


Figure 14: The four models and the level of implication of partners²³

If we compare both definitions, the one for the e-payments and the one for m-payments (highlighting remote payments), the similarity between them could be noticed, since both use the Internet as distribution channel. The other key player in the mobile payment scenario is the mobile device itself. Thus, “mobile devices can be used in a variety of payment scenarios, such as payment for digital content (e.g., ring tones, logos, news, music, or games), tickets, parking fees and transport fares, or to access electronic payment services to pay bills and invoices” (Dahlberg et al., 2008, p. 165 & 166). “Payments for physical goods are also possible, both at vending and ticketing machines, and at manned point-of-sale (POS) terminals” (ibid, p. 166).

“The proliferation of smartphones, which enable both connection to the Internet and the installation of third-party apps to access new content and services” (Arguedas et al., 2014, p. 175) is opening two horizons for the mBanking; one as a new banking channel (see [3.1](#)) and the other as a direct payment method. Mobile payment is an area with high potential and growth. The emergence of new players in the payment market are shaking the ground and are threatening the banks on their core financial services. However, one thing is for sure and it is been discussed among many researchers and scholars (Abdullah et al., 2011; Horn, & Rudolf, 2011; Parry, Newnes, & Huang, 2011; Keltner, Finegold, & Team, 2012): service quality. “Quality in

²³ As depicted in Chaix & Torre (2011, p. 4)

providing payment means quick, reliable and cost-efficient processing of client orders” (Macho, Pater & Seyffertitz, 1994, p. 202). In this context the following questions have arisen:

How banks are going to keep the service quality and retain their position on the market?

Are the stakeholders in the banking/payment industry going to remain the same? (change of paradigm)

What are the future prospects of payment industry?

Is mobile banking paving the way for successful mobile payment service offered by the banks?

Are banks waiting to catch the right wave?

4 Alternative payment methods

Money is generally accepted means of payment. Lerner (2013, p. 1) refers to money “as a good with a number of special properties and basic functions”. “It serves as a means of exchange, value preservation and measurement” (ibid). As it was discussed in the previous chapter (see [3.2](#)), money undergo a change in its form of existence due to the technology advancement, customers’ behavioral shifts and the change of their needs. This have triggered the change of how people make a payment. According to Karnouskos & Fokus, 2004 “payments fall broadly into two categories; payments for purchases and payments of bills/inovices” (as cited in Kim et al., 2010, p. 312). This categorization further on suggests if alternative payments act as a complementary to or compete on the same fronts with already established payment methods. In this chapter couple of alternative²⁴ (cashless) payment methods will be presented. Methods, which by their existence, improve the quality of the payment process and establish new innovative ways of making payments and are becoming serious threat to the conventional payment services offered by financial institution.

4.1 Focus: Austria

“The enduringly high and stable intensity of cash usage may simply be a remnant of the past, where cash was the sole means of payment to carry out retail transactions” (von Kalckreuth, Schmidt, & Stix, 2014, p. 1). Nowadays, as previously discussed, we, the people, have several ways of conducting a payment. We can pay with cash or non-cash (with a card or (to a limited extent) with our (smart)phone). According to World Payments Report 2013, Austria counts among the top ten European non-cash payments markets (Capgemini and The Royal Bank of Scotland (RBS), 2013, p. 9). But, compared to the Scandinavian countries, Austria is still considered conservative. Euromonitor International’s report (2014a, p. 1) claims that “cash transactions are by far the most common payment method in Austria up to 2013”. On the other side, however, as it was already mentioned in Chapter [2.3](#), Austria counts among the top 10 high rated countries according to the DiBRix.

²⁴ Alternative to cash payments and in sense of being offered outside the banking industry.

In Austria there are two examples of alternative payment methods that are worthwhile mentioning; namely paybox and VeroPay. At the same time they are both representatives of the group of m-payments; paybox belonging to remote, while VeroPay to proximity payments. Almost a decade and a half ago, in 2000, “paybox introduced the first mobile service worldwide for a simple, user-friendly and safe payment via a mobile phone” (Punzet, 2006, p. 221). paybox’s origins come from Germany. One year after its introduction, paybox was launched in Austria (see Figure 15). “From its outset paybox was designed as an open payment platform and regardless of its ownership structure its service is available for the customers of all Austrian mobile network operators (MNOs)” (ibid). The crucial element in the payment process is the phone number. After entering / specifying the mobile number the user get an automatic call (PIN²⁵ Call) and he/she is being required to enter a 4-digit PIN and press the # key on the keyboard of the phone. Subsequently, the amount for the purchased product or service will be directly debited from the user’s bank account ([paybox - Zahl's mit dem Handy. - So bezahlen Sie mit paybox](#)).

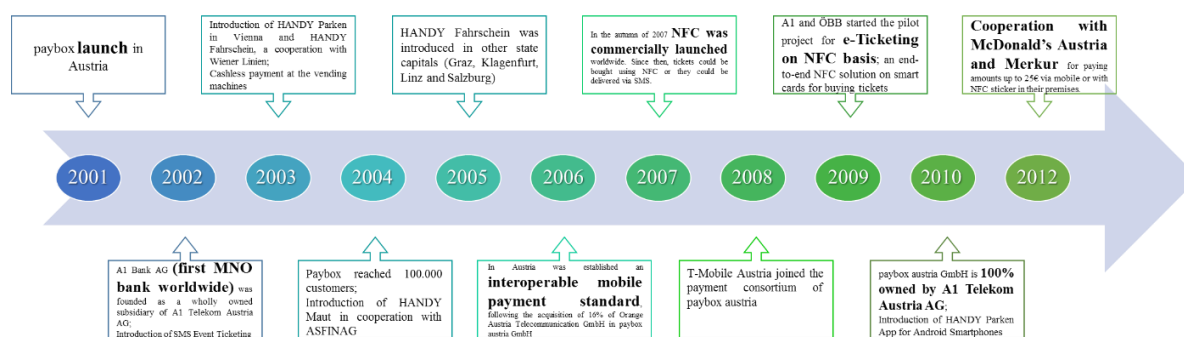


Figure 15: paybox timeline²⁶

“Over the years through the cooperation with attractive partners of the domestic economy (such as the municipality of Vienna, ÖBB, ASFINAG, Austrian lotteries, large retail chains etc.), paybox could achieve high market penetration within a few years and with that could expand its offer introducing innovative services” (Punzet, 2006, p. 233). paybox customers could pay in online shops, in stores, in taxi and even at the vending machine purchasing parking tickets, tickets for the public transport and for concerts and other events, snacks and drinks, lotto tips and books using their mobile phones ([paybox - Zahl's mit dem Handy. - paybox macht Ihr Handy zur Geldbörse](#)).

²⁵ PIN=Personal Identification Number

²⁶ Own representation based on [paybox - Zahl's mit dem Handy. - M-Commerce und Mobile Payment in Österreich](#)

In Austria, in 2006, an inter-operable mobile payment standard was established, following the acquisition of 16% of Orange Austria Telecommunication GmbH in paybox Austria GmbH ([paybox - Zahl's mit dem Handy. - M-Commerce und Mobile Payment in Österreich](#)). Two years later “T-Mobile Austria joined the payment consortium of paybox Austria and from that moment, the four largest Austrian mobile operators - mobilkom Austria (currently A1 Telekom Austria AG), ONE (currently Orange Austria Telecommunication GmbH), T-Mobile and tele.ring – rely on paybox as the standard for payment by mobile phone in Austria” ([paybox Bank AG | Informationen rund um die paybox Bank AG, die A1 Visa Karte, Paybox und mehr](#)).

There are two crucial milestones in the history of paybox. “After it passed into 100% ownership of A1Telekom Austria AG in 2010, in 2011 paybox Austria GmbH and A1 Bank AG (founded in 2002 as a 100% subsidiary of A1 Telekom Austria) merged into paybox Bank AG” (ibid). The intention of the merger was in order to enable one-stop processing of the financial services and the m-payment services for Austrian mobile operator and other partners (ibid). Thus, according to Chaix & Torre’s classification (2011, p. 2 & 4; see [3.3](#)) the business model of paybox Bank AG can be classified as collaborative (financial intermediaries and telephonic operators collaborate in the managing tasks and share cooperatively the proprietary rights).

paybox Austria as a pioneer paved the way for mobile payments in Austria. And better later than never, in September 2012 SECURE PAYMENT TECHNOLOGIES GmbH (founded in 2011) introduced an App, called VeroPay, for mobile payment ([VeroPay - Über uns](#)). The App allows payments at POS scanner using Blue Code technology on the smartphone. The Blue Code is actually generated by the App in form of a barcode after entering a PIN code, which is defined by the user itself for accessing the App. The Blue Code does not contain sensitive and personal data. At the POS “the Blue Code is being scanned and then transferred from the supermarket to the Secure Shopping datacenter” ([VeroPay - Presse Archiv 1](#)). “Subsequently, the bank transfers the amount from the checking account of the customer to the merchant” (ibid).

VeroPay was initially being offered for customers which have a bank account at Hypo Tirol Bank and buy in the supermarket chain MPREIS, both from the federal province of Tyrol. A year later, after its success at local level, VeroPay was available for customers of any Austrian bank. Following the example of paybox, VeroPay started cooperation with prominent retail chains, such as Billa, Merkur and Hartlauer ([VeroPay - Händler](#)). Depending on the provider, a VeroPay user can make purchases of up to 150 euros per day ([VeroPay: Bezahl-App aus Tirol](#)

[startet in ganz Österreich - futurezone.at](#)). Going through the same procedure, VeroPay business model belongs to the group of independent service provider (ISP) model (see [3.3](#)).

Among the other requirements (age limit: over 18 year old and EU citizenship), the users of both m-payment services need to have a valid and an active bank account in Austria. VeroPay and paybox are financial intermediaries and per se are part of the payment system in Austria. “As a rule, payment systems are categorized as follows:

- Large-value payment systems
- Clearing systems
- Correspondent banking arrangements” ([Payment Systems - Oesterreichische Nationalbank \(OeNB\)](#)).

The handling of retail payments counts in the category of clearing systems. “Consumers or companies initiate such retail payments, and banks send files (compilations of payments) to the clearing house, which collects the transactions and, at particular cutoff times, compiles each bank’s net settlement position” ([Payment Systems - Oesterreichische Nationalbank \(OeNB\)](#)). **“In any event, settlement must be performed by a bank or central bank across whose books the transfers between the participants take place (settlement agent)”** (ibid). “In contrast to banks, payment institutions (like VeroPay and paybox) do not have direct access to clearing and settlement systems and are obliged to use the services of a bank to settle payments” (European Commission, 2012, p. 10).

4.2 “e-“ paving the way for “m-“

A snapshot of the US market at the end of the 90’s:

The e-commerce came along with the boom of the Internet. The ubiquitous character of the Internet and thus of the e-commerce, has opened possibilities for “trade between private person” (think of eBay; Feller, 2006, p. 237). “The success of the e-commerce is destined by the security, the speed and the ease of use, as the crucial determinants of the systems that support it” (ibid). This new channel of trading required new payment methods that are appropriate for the medium and that need to be adapted to the requirements of the users (ibid). The trade per se has its monetary value and therefore it has to be paid. As discussed by Feller (2006), although credit cards were widely accepted, they were not always an option as a mean of payment in the e-

commerce (ibid). “Especially not for many private individuals and small traders, due to the fact that they cannot get from the banks the possibility to directly accept credit cards” (ibid).

The lack of a convenient and an appropriate payment method on the market at that time was recognized by the developers of the PayPal, Peter Thiel and Max Levchin. “They came up with the idea of combining two extremely popular and widely used technologies – the credit card network and the e-mail” (Prashanth, 2004, p. 3). “Initially, PayPal was developed as a software for secure money transfer between Palm²⁷ devices” (Feller, 2006, p. 238). Within short time PayPal attracted the attention of prominent investors (Nokia Ventures, Deutsche Bank and Goldman, Sachs & Co.), which financially contributed in the development of PayPal or more precisely in its changeover into an Internet-based payment system (ibid) and in November 1999 was introduced on the market ([History - PayPal](#)). The Internet spread at a lightning speed and along with its spread came along the rapid popularity and acceptance of PayPal. Within short period of time, in 2000, PayPal reached 1 million users (ibid). “In 2002 eBay Inc. acquired PayPal, combining the strength of the world's largest online marketplace with the web's leading payment system” (ibid).

Nowadays:

“PayPal make life better for over 152 million active registered accounts by helping people and businesses receive and make payments in more than 100 currencies in 203 markets. As an eBay Inc. (Nasdaq: EBAY) company, PayPal is the faster, safer way to pay and get paid. Giving people simpler ways to send money without sharing financial information, and with the flexibility to pay using their account balances, bank accounts or credit cards, PayPal processes 9.3 million payments everyday for its customers” ([About PayPal - PayPal](#)).

PayPal is being an established e-payment method. However, if we for a moment go by the fact that mCommerce is “an extension of eCommerce to a wireless mediums” (Tiwari et al., 2007, p. 3), analogously “m-payments are a natural evolution of e-payments” (Kim et al., 2010, p. 310). Thus, “in restructuring its future business, PayPal is guided by two principles: simplicity and mobile first” (Accenture, 2014b, p. 6). After introducing on the US market, PayPal should be brought in Europe as well ([PayPal Beacon startet Anfang 2014 in den USA - futurezone.at](#))

²⁷ Personal Digital Assistance (PDA) developed by Palm Inc. ([PDA \(handheld computer\) -- Encyclopedia Britannica](#))

In its recent study, Accenture (2014a) surveyed retail banking customers in the US and Canada. Among the other findings, many of the interviewees have declared, that they are willing to bank with a non-financial institution with which they do business and PayPal found between them (ibid, p. 5).

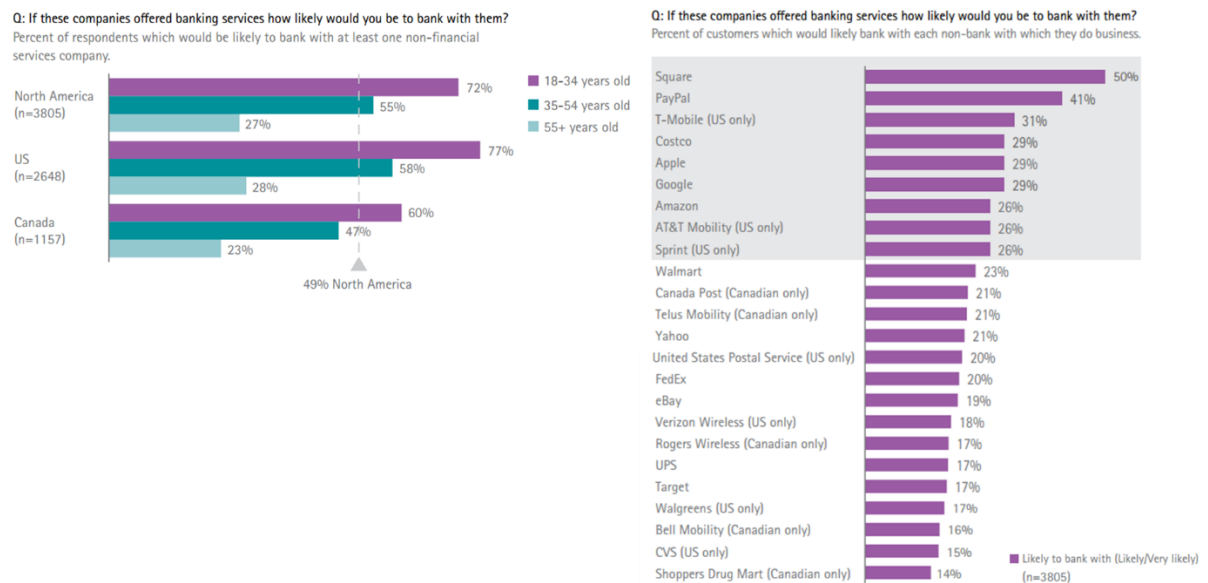


Figure 16: The likelihood of banking with non-financial institutions (US and Canada)²⁸

According to the latest Euromonitor (2014d, p. 2) report “fewer than 10% of internet shoppers pay for their goods using mobile payment schemes or services such as PayPal”. Though cultural and lifestyle differences do have an influence on the social habits regarding the acceptance of mobile payments, it is however a very crucial moment in the Internet (and along with that in the mobile) environment is reaching the critical mass – network externalities (as mentioned in Chapter 5.1). My point is to stress the fact which suggests that if PayPal is so widely accepted as a convenient and trustworthy payment method, it could become a serious threat and a direct and nearest competitor to the financial institutions.

4.3 NFC - The promising technology

It is inevitable to accept the fact that nowadays we have the luxury to be at home sitting on the sofa and buy our favorite book, a custom garment or book our holiday. And all of this thanks to the Internet and to the advancement of the technology. Empowered with “the device” of the

²⁸ As depicted in Accenture (2014a, p. 5)

contemporary history, the smartphone, it has become even easier to purchase goods or services being just a fingertip away of it. “The rapid growth in digital commerce – both online and mobile – is driving wholesale renewal in merchant acquiring technology and operating models” (Accenture, 2012, p. 20). On the other side, “as mobile technology becomes more sophisticated, new forms of payment have since emerged within the mobile payment theme” (Tan, Ooi, Chong, & Hew, 2014, p. 292).

In Chapter [3.3](#) and in the introductory part of this chapter different categorization of mobile payments were shown, depending on the distance and relation between buyers, on the enabled technologies and on the purpose of the payment. Regarding this, a new payment method can act as a complementary to or compete on the same fronts with already established payment methods. “The innovation within m-payment has grown rapidly over the last decade with the introduction of various payment methods such as Wireless Application Protocol (WAP), Unstructured Supplementary Service Data, SMS, and General Packet Radio Service (GPRS)” (ibid). In the course of time, “with the advancement in short-range wireless technologies such as Near Field Communication (NFC), Bluetooth, Infrared Data Association (IrDA) and Radio Frequency Identification (RFID)” (Leong, Hew, Tan, & Ooi, 2013, p. 5604) and the looking for a more flexible, more convenient and more user-friendly payment method, brought all the technologies together and integrate into the mobile phones. In this way, it is easier to facilitate the uptake of m-payment due to the fact that they are already “installed in the current customer base” (Ondrus, & Pigneur, 2007, p. 43) and they can be used promptly by the users themselves.

“Payments via NFC are an increasingly important area of m-payments” (Accenture, 2012, p. 10). “Totally unknown just a few years ago, NFC is now increasingly establishing itself as one of the most promising forward- looking technologies for wireless data exchange over short distances” (Lamedschwandner, & Bammer, 2013, p. 189). “NFC technology enables simple and safe two-way interactions between electronic devices (usually at a distance of 4 cm or less), allowing consumers to perform contactless transactions, access digital content, and connect electronic devices with a single touch” ([About the Technology | NFC Forum](#)). A contactless payment transaction “does not require a physical connection between the consumer payment device and the POS terminal” (Pasquet, Reynaud, & Rosenberger, 2008, p. 121). “Contactless payment was firstly developed on credit cards and an important implementation of that type of contactless payment is the PayPass program of VISA and MasterCard” (ibid).

“NFC’s “birthplace” is in Austria (in the town of Gratkorn near Graz) and it is being invented by chip manufacturers NXP Semiconductors and Sony in 2002” (Lamedschwandner, & Bammer, 2013, p. 190). After several pilot projects, the extensive market introduction of contactless payment in Austria happened mid-2013 ([Card Payments - Current-Trends - Oesterreichische Nationalbank \(OeNB\)](#)) and ever since then several large Austrian banks (in chronological order: Erste Bank und Sparkasse, Volksbank, Raiffeisen Bank, UniCredit Bank Austria and BAWAG (upon customer request)) ([Kontaktloses Zahlen: Banken starten NFC Bankomatkarten - Telekom - derStandard.at > Web](#)) issue debit cards in the wake of the general exchange cards with contactless technology. “At the same time began the roll-out of the corresponding terminals at major retail chains” ([Card Payments - Current-Trends - Oesterreichische Nationalbank \(OeNB\)](#)). Exactly this moment, “the infrastructure constraints in terms of handset and acceptance, have kept developments slow” (Pratz, Bloos, Engebretsen, & Gawinecki, 2013, p. 8).

“At the end of 2013 there were approximately three million of these cards were in circulation, and almost the same amount of NFC enabled cards should be issued by the end of 2014” ([Kontaktlos bezahlen, kontaktlos stehlen << DiePresse.com](#)). “By the end of 2015, the entire ATM card stock in Austria will be equipped with the new function” (ibid). NFC enabled card are a fast and convenient way of payment for purchases below certain amount (up to 25 euros) without any authorization requirements (PIN code or card holder’s signature), whereas for all other payments exceeding the certain amount an authorization is required (Pasquet, Reynaud, & Rosenberger, 2008, p. 122). According to the latest OeNB’s survey about the means of payment in Austria from the 3rd quarter in 2013 (2013, p. 2) it has been shown that 58% from the respondents do not know about the NFC function. The information asymmetry increases with age and the level of education (ibid).

However, the potential of the NFC technology is being recognized by the big players in the payment industry in Austria. On the one side, “in September 2013 companies such as Austria Card, Card Complete, Drei, Erste Bank und Sparkassen, First Data Austria, MasterCard, Nexperis, PayLife Bank, T-Mobile and Visa with joint forces have created the “Mobile Wallet Initiative Austria”” ([Startschuss für nationale NFC-Initiative - futurezone.at](#)). Though coming from different industries, initiative’s common goal is to create “an open nationwide standard for NFC mobile wallets” ([Austrian companies plan national NFC wallet standard - NFC World](#)). As being reported, with the launch and the distribution by the MNOs of a “special NFC-enabled SIM card” (ibid) the highest security on the mobile phone will be ensured when making

contactless payments. On the other side, “domestic banks in Austria want to make more and more use of the NFC enabled cards and thus plan to introduce NFC-ATM for more convenient and faster cash withdrawal” ([Banken planen Einführung von NFC-Bankomaten - Innovationen - derStandard.at > Web](#)).

“Making contactless payments via mobile phones or smart cards is widespread in the U.S.A. and in Asia compared to Europe, where it has not been introduced on a large scale” ([Card Payments - Current-Trends - Oesterreichische Nationalbank \(OeNB\)](#)). “The combination between the global popularity of mobile devices and the speed and ease of NFC applications (whether they are used for payments, transit or access control) has the potential to significantly expand the already wide range handsets’ capabilities” (de Bel & Gaza, 2011, p. 28). “Growing numbers of manufacturers are starting to produce NFC-enabled phones, and major NFC payments propositions - such as Google Wallet – are being introduced” (Accenture, 2012, p. 10). The fusion of the ubiquitous character of the mobile phone (exceeding its function of being just a device for making a simple phone call), its wide acceptance and the convenience of the NFC technology making possible offering “additional features, such as loyalty programs, couponing and targeted marketing” (de Bel & Gaza, 2011, p. 9), could bring bright future for making payments using the NFC technology.

5 Environment

As it was discussed in the previous chapters, the financial service industry is changing rapidly and new innovations and technologies are constantly being introduced. “Payment services are a special market with strong network effects, specific roles, niches and rules” (Hartmann, 2006, p. 8). “It is also highly regulated, since closely related with money and finance” (ibid). “In general, adoption of mobile financial services is context-driven; this means that a “one size fits all” approach does not work” (de Bel & Gaza, 2011, p. 10). Put it differently, mobile payment service providers shall consider many aspects containing “the context” when introducing new service. In context of contingency theory²⁹ and as suggested by Dahlberg et al. (2008) in this chapter three typical contingency factors will be discussed: technological, legal and social. “These contingency factors have significant impacts on the mobile payment services market, but are outside of the influence and control of the market” (Dahlberg et al., 2008, p. 169) itself.

5.1 Technology and technological environment

As a source for profitable growth (Fasnacht, 2009, p. 8), innovations are considered as a reasonable response to the fast changing environment. Another common metric measuring the innovation performance is an increase in customer satisfaction (Efma and Infosys, 2013, p. 17). As argued by Edgar Dunn and Company (2007), “companies in the mobile payment business perceive consumer acceptance as the greatest barrier to mobile payment adoption” (as cited in Mallat, 2007, p. 414). Accordingly, customer-centricity is on any market participant’s agenda.

Technology advancement has a huge influence on our needs, wants and on our habits. Thus, launching any new product or service on the market “demands deep knowledge of individuals to enhance the customer experience” (Capgemini and Efma, 2013, p. 20) and to warrant (to a certain extent) its acceptance.

²⁹ Contingency theory suggests that “an organizational outcome is the consequence of a fit or match between two or more factors” (Van de Ven, & Drazin, 1984). In other words “there is no single best way to manage or organize or make a decision” (Dahlberg et al., 2008, p. 167) and many factor should be taken into consideration.

Two crucial elements in the mobile payment process are the mobile device (e.g. smartphone) and the mobile payment enabling technologies. The proliferation of m-payments and their importance in today's society is mainly due to the high penetration rates of mobile (smart)phones (96% worldwide; 82%³⁰ in Austria) and the customer acceptance. Inductively, all that is possible due to the advancement of the technology and its application (in diverse fields) in our everyday life. M-payments are not a novelty on the payment market (see Chapter 4). But, still their acceptance rate is not at the level at it was anticipated by many.

Many researchers and scholars have invested in proposing common theories and models in order to somehow predict the acceptance of new technologies. A very well-known and the most cited model for predicting IT acceptance is the Technology Acceptance Model (TAM) suggested by Davis (1989), "in which perceived usefulness and perceived ease of use are the main determinants of the attitudes" (as cited in Martins et al., 2014, p. 2). The model "predicts end-user acceptance of information systems within organizations" (Mallat, 2007, p. 415). According to Mallat (ibid), the diffusion of innovations theory introduced by Rogers (1995) is more suitable when it comes to m-payments acceptance, since the end-users are consumers. "The theory determines five innovation characteristics that affect adoption: relative advantage, complexity, compatibility, trialability, and observability" (ibid). As argued by Tornatzky and Klein (1982) only three of them (relative advantage, complexity, compatibility) "provide the most consistent explanation for the adoption of information system" (as cited in ibid). Mallat (ibid) expands the model "with constructs of network externalities (Economides, 1996; Van Hove, 1999), trust and security (Gefan et al., 2003; Jarvenpaa et al., 2000) and situational factors (I. Lee et al., 2005)" for the purposes of her study.

While the continuous advancement of (mobile) technology per se contains the three above mentioned constraints, trust and security will always be the main concerns for the consumers (especially in the early stages of a new technology introduction). Dewan and Chen (2005) discussed about "consumers' concerns about the privacy and security of mobile payments, which are commonly related to authentication and confidentiality issues as well as to concerns about secondary use and unauthorized access to payments and user data" (as cited in ibid, p. 417). In mobile payment context these concerns prevail due to the data sensitivity (e.g. personal financial data, credit card number etc.).

³⁰ According to the latest Mobile Communications Report 2014 from the Mobile Marketing Association Austria (2014, p. 24).

Various technologies, such as SMS or USSD, NFC, and mobile Internet, enable the mobile payment process. Depending on the distance and the relation between buyers (see Figure 12) different technology has been used. As stated in the definition of m-payments (see 3.3), remote m-payments mostly take place through internet/WAP or through premium SMS services which are billed to the payer through the Mobile Network Operator (MNO). SMS as a technology is well-known, mature and highly accepted. Over time the Internet as a technology has changed. If once upon a time surfing the Internet meant sitting in front of the computer and using broadband connection, nowadays we can access the Internet with our smartphones anytime and anywhere we want. Along with the technological advances and the socio-demographic shifts, it has come to an extension to the ubiquitous characteristic of the Internet. Thus, to the “anytime, anywhere” paradigm “on any device” has been added.

“The Austrian mobile segment is one of the most advanced in Western Europe, with the highest household mobile penetration in the region” (Euromonitor International, 2014b, p. 1). “In March 2012, A1 Telekom Austria became the first telecom operator to launch 4G LTE in major urban centers including Vienna, Bregenz and Eisenstadt and in 2013 expanded its 4G services to a number of rural regions, which were not covered either by 3G or 4G networks” (ibid, p. 3). The number of mobile Internet subscriptions shows a positive trend since 2008 according to the latest numbers delivered by Euromonitor (2014c).

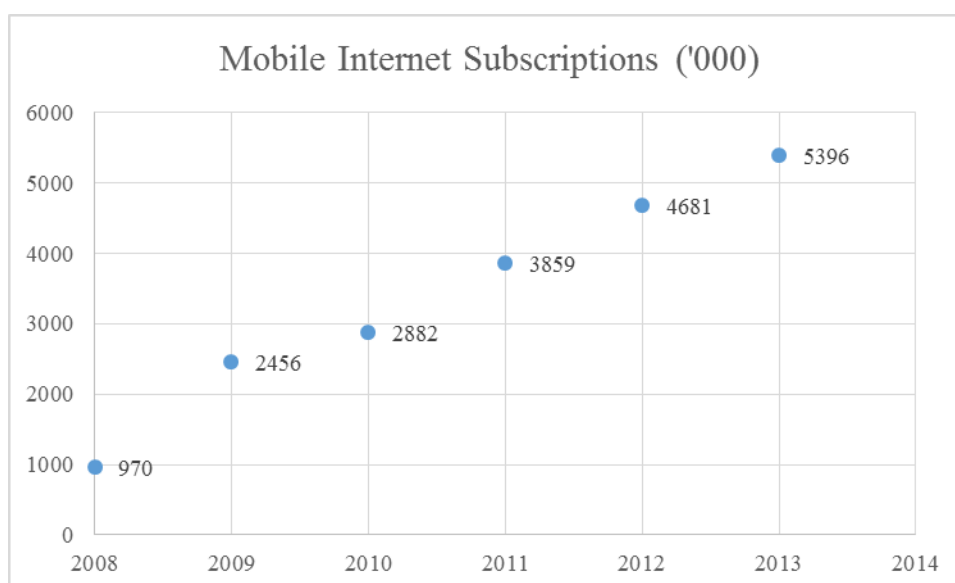


Figure 17: Mobile Internet subscriptions in Austria ('000)³¹

³¹ Own representation based on Euromonitor (2014c)

The recent report of the Mobile Marketing Association Austria (Mobile Communications Report 2014) gives interesting facts about the users' behavior of mobile phones in Austria. Among the facts it is of essential importance to mention that a huge amount of the interviewees (79.3%, see Figure 18) surf the Internet at home, even though they probably dispose of another device (such as PC or laptop) with a bigger screen.

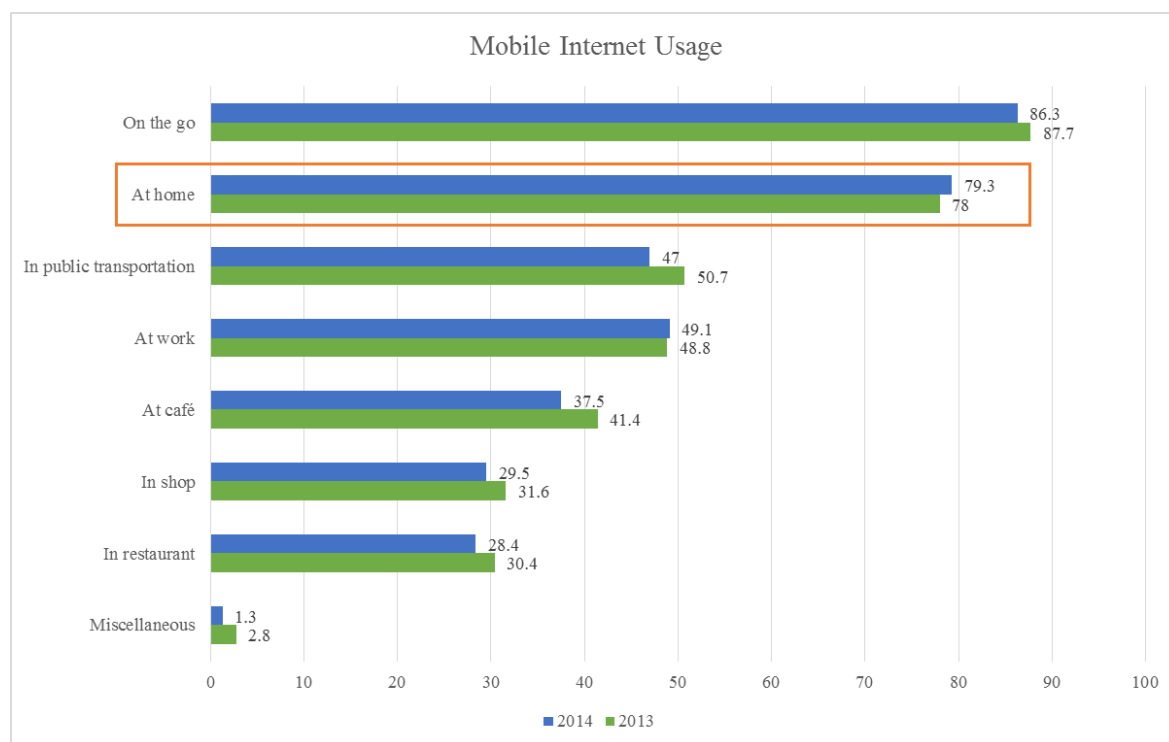


Figure 18: Mobile Internet usage in Austria³²

Payment services are a special market with strong network effects (Hartmann, 2006, p. 8), “because payment technologies exhibit indirect network externalities” (Economides, 1996; Van Hove, 1999; as cited in Mallat, 2007, p. 417). This applies for both mobile payment categories: remote and proximity payments. “A consumer’s decision to adopt the network is significantly affected by the amount of merchants using it, since that amount determines the opportunities for consumers to use the new payment service” (ibid). “New consumers adopting the network indirectly increase the value of the network for all consumers because they attract new merchants to join the network” (ibid).

³² Own representation based on Mobile Communications Report 2014 (Mobile Marketing Association Austria, 2014, p. 55)

With a high penetration rate of smartphones, their huge acceptance among the consumers and a technically advanced environment we can predict a bright future for a successful implementation and growth of mobile payments in Austria.

5.2 Legal environment

“Economic growth and stability are two very important aspects in the development of every national economy” (Huch, 2013, p. 141). And in a world, which is to a large extent dependent on a continuous technological advancements and thus on people’s behavioral shifts, “the promotion and the nurturing of these both aspects can be induced by regulatory driven transformation” (ibid). As already discussed, financial sector (with an emphasis on the banking sector) as one of the main contributors to the national GDP is being highly impacted by the IT advancement and lately it is being put under increasing pressure in one of the financial sector’s core business segments: accounts and payments. “Payment services, since closely related with money and finance, are highly regulated” (Hartmann, 2006, p. 8).

Technology and legal environment are mutually dependent. As technology evolved it has contributed (and it still does) to the “dematerialization from metal money to e-money” (Kumbhar, 2013, p. 66). This phenomenon has further on attracted the attention of the policy makers. And as soon as the market is being regulated, the basis for further technical and legal improvements is being established. As argued by Huch (2013, p. 141), a sustainable growth and stability can be also reached by reducing the heterogeneity and establishing less fragmented, but highly standardized market.

“Market observers regard Europe as the market with the greatest potential for m-payments from the year 2015” (Lerner, 2013, p. 15). Compared with the other markets, such as US, Japan or even one of the developing markets, “market penetration of m-payments in the EU still has considerable unrealized potential” (European Commission, 2012, p. 6). The issue for “the slower market take-up in Europe is being addressed to the highly fragmented mobile payment market” (ibid). But, European legislation does not stay passive in solving this problem. There is a series of directives and acts that regulate the payment services across European Union (EU). In this context, some crucial milestones of the EU legislative are going to be discussed. Each one of these contributes in the establishment of an integrated Single Market for payment services.

The emergence of the Internet has attracted the attention of the policymakers and in 1997 the European Commission with the [97/489/EC: Commission Recommendation](#) has started discussing the increased importance “concerning transactions by electronic payment instruments and in particular the relationship between issuer and holder”. Out of the Recommendation were born the both Directives, [Directive 2000/28/EC](#) and [Directive 2000/46/EC](#), dealing with the phenomenon of electronic money (“its issuing and the establishment of a technology-neutral legal framework that harmonizes the prudential supervision of electronic money institutions (EMIs)”). Besides credit institutions, EMI include non-banks companies for which the issuance of electronic money is the sole business as well as mobile operators (European Commission, 2004, p. 5). Later on, alongside with the technology advancement, [Directive 2000/46/EC](#) was repealed by the [Directive 2009/110/EC](#). The new E-Money Directive ([2009/110/EC](#)) (EMD) on the taking up, “pursuit and prudential supervision of the business of electronic money institutions, aims to:

- enable new, innovative and secure electronic money services to be designed
- provide market access to new companies
- foster real and effective competition between all market participants” ([E-money - European Commission](#)).

The last, but the most important milestone of the payment market integration process is the Single European Payment Area (SEPA) project. “The introduction of the euro in 2002 as the single currency triggered the common effort to create a single payment area covering cashless payments as well” ([STUZZA - About SEPA](#)). “The SEPA project covers the key retail payment instruments: credit transfers, direct debits and payment cards and is considered as a springboard to creating a competitive and innovative European payments market in two ways” (European Commission, 2012, p. 2). “The first concerns the ever-growing proportion of on-line or internet payments (e-payments) and mobile payments (m-payments)” (ibid). “Secondly, the existing standards and rules developed under SEPA could be re-applied to payment instruments in non-euro currencies, thereby taking the boundaries of a Single Market for payments beyond euro-denominated transactions” (ibid). In order to be in tune with the payment innovations, “the Eurosystem sees a genuine need for secure and efficient online and mobile payment solutions to be offered throughout SEPA” ([eSEPA - Oesterreichische Nationalbank \(OeNB\)](#)). The innovative payment solutions “that are currently available have a purely national focus and eSEPA naturally envisages SEPA-wide innovative solutions” (ibid). eSEPA concept includes innovative payment-related services that are being provided by advanced information and communication technology (e.g. Internet and mobile technology).

The legal foundation for the SEPA is the Directive on Payments Services (PSD). “The PSD aims at establishing a modern and comprehensive set of rules applicable to all payment services in the European Union and seeks to improve competition by opening up payment markets to new entrants, thus fostering greater efficiency and cost-reduction” ([Directive on Payment Services \(PSD\) - European Commission](#)). As stated in SEPA Regulation [EC 260/2012](#), “the success of SEPA is very important economically and politically”. “SEPA is fully in line with the Europe 2020 strategy which aims at a smarter economy in which prosperity results from innovation and from the more efficient use of available resources” (ibid).

Due to the fact that the EU law is a supranational law ([European law -- Encyclopedia Britannica](#)), Austria’s national law (as a member state) is being harmonized in compliance with the EU directives and regulations. “The transposition of the PSD into the Austria’s national law (Zahlungsdienstegesetz ZaDiG)” took place in July 2009 ([STUZZA - About SEPA](#)). “In March 2013 Regulation No 260/2012 came into effect establishing technical and business requirements for credit transfers and direct debits in euro and stipulated 1st February 2014 as the end date for migration to SEPA credit transfers and SEPA direct debits in the euro area” (ibid). EMD was adopted in December 2010 (E-Geldgesetz 2010).

The mobile payments ecosystem is complex due to the fact that various participants coming from different industries with different interests act on the same market and thus it is of a great importance “where and how each of the participants fit into the ecosystem” (Kemp, 2013, p. 176). “The lack of a concrete European framework addressing main concerns, such as technical standards, security, inter-operability, and the cooperation between market participants, risks perpetuating a fragmented m-payments market in Europe” (European Commission, 2012, p. 6). “Furthermore for both e- and m-payments, (potential) market participants seem reluctant to invest as long as the legal situation regarding scope for applying collective fee arrangements, such as for payment cards, has not been settled” (ibid). Additionally, “the right legislative framework must be in place to encourage development, especially when we refer to a global payment service” (Karnouskos, 2004, p. 55).

5.3 Cultural and demographic environment

Human intelligence is defined as a mental quality that consists of the abilities to learn from experience, adapt to new situations, understand and handle abstract concepts, and use knowledge to manipulate one's environment ([human intelligence \(psychology\) -- Encyclopedia Britannica](#)). Newell & Simon (1972) define human intelligence as “the adaptive system that can shape them into environment”. Thus, our intelligence and reasoning differentiate us humans from the other species and that makes us adaptive and responsive to new circumstances.

“Mobile is a vibrant and evolving industry at the heart of everyday life for a growing proportion of the world's population” (GSMA & A. T. Kearney, 2013, p. 4). As stated above (see [3.1](#)), “going “mobile” can be considered as one of the main global trends of the 21st century” (Höhler, 2012, p. 5). As the ubiquity of mobile phones grows and as their multifunctional capabilities expand, grows the appetite of the consumers. “Empowered by smartphones and tablets, savvy consumers have come to expect immediacy at their fingertips – they want everything, everywhere, now” (Accenture, 2013b, p. 14).

As discussed by Dahlberg et al. (2008, p. 170) there are “distinguishable payment cultures in various countries”. In this context, I found two works from Loureiro, Kaufmann, & Rabino (2014) and Yang (2007). Though at first impression they deal with issues in two different areas (online banking and mobile payment, respectively), there is something that connects both. Comparing two different markets, it can be concluded that depending on the demography (e.g. technophilia³³) as well as on the technological environment there are different behavioral (from user perspective) and implementation (from provider perspective) intentions for introducing innovative services.

The mobile-cellular penetration in developing countries is significantly lower than the one in the developed (90% & 121%, respectively; ITU, 2014, p. 3). On the other side, there is a “low penetration of formal financial services” (Capgemini and The Royal Bank of Scotland (RBS), 2013, p. 13). Coupled this things together, inspire the governments in the developing countries (led by Middle East and Africa countries) to force mobile payments in order to “increase bank reach to rural areas” (ibid, p. 29). “The adoption rates of mobile payments in the emerging (developing) markets is far greater than those in most mature (developed) markets” as reported

³³ Enthusiasm for new technology ([technophilia - definition of technophilia by The Free Dictionary](#))

by Accenture (2013b, p. 11). As previously discussed (see 5.2), market penetration of m-payments in the EU still has “considerable unrealized potential” (European Commission, 2012, p. 6), but it is considered “as the market with the greatest potential for m-payments from the year 2015” (Lerner, 2013, p. 15).

Demography and lifestyle characteristics have an impact of the adoption of m-payments (Dahlberg et al., 2008, p. 170). “The growth of smartphones alongside the enhancements of their capabilities makes people more open towards mobile payments” (de Bel & Gaza, 2011, p. 26). Generation Y, or often referred to it as Millennials or Digital Natives as well, is the generation born in the late 80s and early 90s. Among the common characteristics of this Generation count their tech-savviness, Internet dependency (24/7) and their mobile lifestyle. It is very often argued that the introduction of new technologies is being dependent of the user’s age, due to the familiarity factor. In other words, the sooner the user is being confronted and used to a new technology, the more confident and familiar she or he become in using it.

But, the more the various technologies are becoming indispensable part of our everyday lives, the higher is the notion of their acceptance by everyone (not only the new generation). The Mobile Marketing Association Austria in their latest report classify the users in three groups, depending on their Internet usage frequency on their mobile phones (see Figure 19). Subsequently, in Figure 20 we can see that different age groups are included in every categorization.

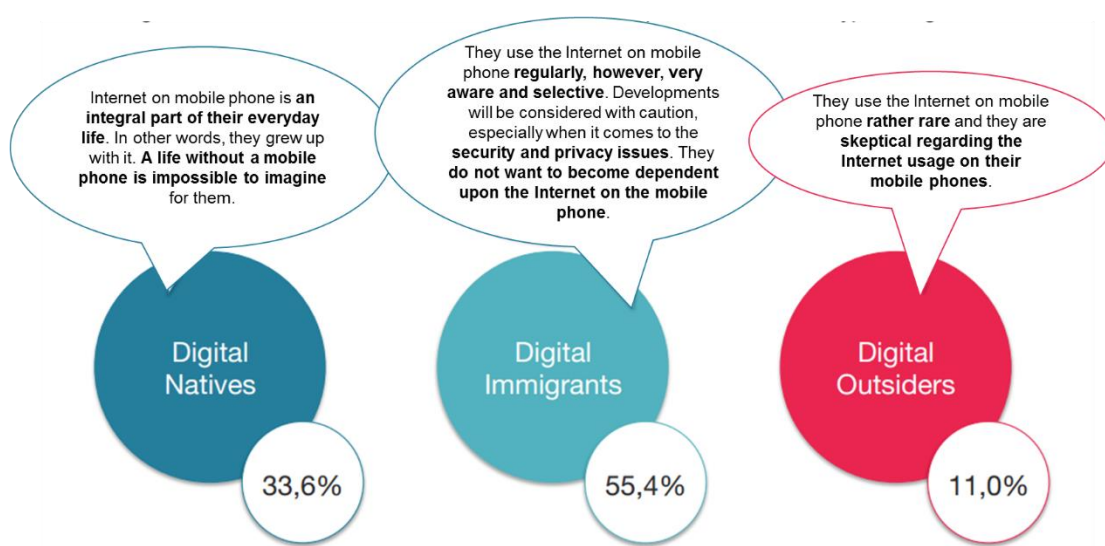


Figure 19: Types of mobile Internet users - descriptive³⁴

³⁴ As depicted in Mobile Communications Report 2014 (Mobile Marketing Association Austria, 2014, p. 49)

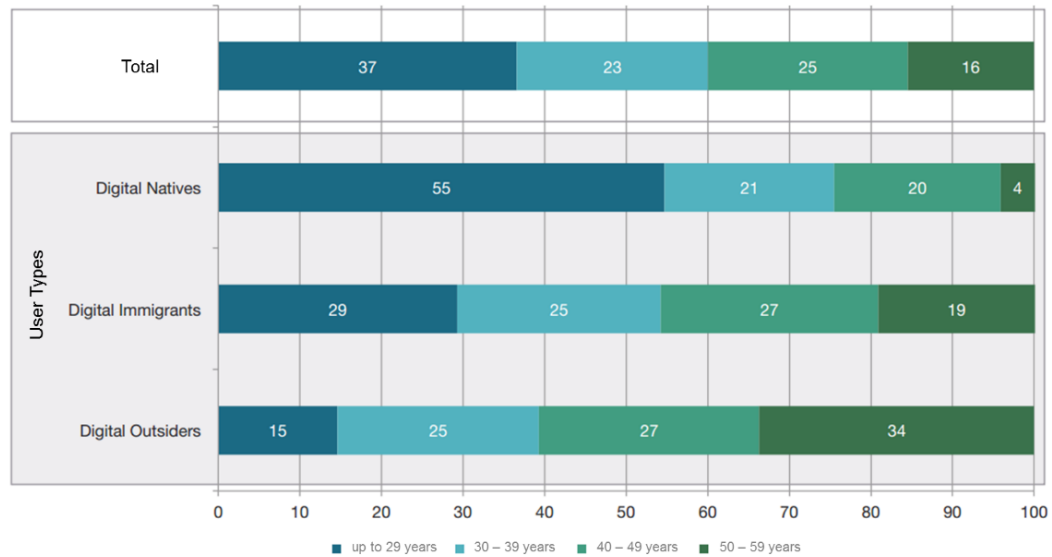


Figure 20: Types of mobile Internet users - statistically³⁵

Panta rhei, and we, people, are gifted with the ability to adapt and to respond to the new circumstances and face challenges. If we for a moment (in the context of the thesis) regard the current circumstances, we can say that there is an increased familiarity with and usage of mobile technologies. On the other side, new payment methods mature, are becoming widely accepted and bring advantages to the consumers. Under these circumstances it could be foreseen a bright future for the mobile payments in Austria. But, still, we should never forget the only certain and most probable constant in the whole equation (our environment) – the change.

³⁵ As depicted in Mobile Communications Report 2014 (Mobile Marketing Association Austria, 2014, p. 51)

6 Conclusion

We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next 10. Don't let yourself be lulled into inaction.

– Bill Gates

In life, whether private or business, we are daily confronted with making decisions. Depending on the situation the approach of making a decision is surely different. Rosenzweig (2013) suggests four types of decisions varying along two dimensions: “control and performance” (see Figure 21). Control refers to our ability to reshape the situation when we are making decisions in terms of are we choosing among options already available, or we shape those options and what happens once we have chosen the options (ibid). Performance measures our decision-making differing between our aim to do well, no matter what anyone else does (absolute), or our aim to do better than others (relative) (ibid).



Figure 21: Four Types of Decisions³⁶

In the thesis it was mainly and heavily discussed how banks' core business segments, payments and accounts, are being put under pressure due to coincidence of factors. “Banks worldwide are on the move” (Eistert et al., 2013, p. 13). The advances of (mobile) technology and the loosen entry boundaries in the banking industry has opened possibilities for non-financial service

³⁶ As depicted in Rosenzweig (2013)

providers to fight on the same front (payments) with the banks and with it the position of the banks on the payment market is threatened. Although banks continue to control the settlement process, “profit opportunities are shifting to value-added services allowing nonbanks to provide payment solutions” (Chakravorti, & Kobor, 2005, p. 2). In Chapter [3.3](#) (as argued by Chaix & Torre, 2011, p. 2 & 4) we saw that over the last years different viable economic models develop in parallel around the world. In this way, not only banks can have a piece of the payment pie. Offering innovative payment solutions and identifying market segments (not or not properly served by the banks), “these emerging competitors operate and adapt more quickly than banks, creating new tools and services that quickly become the industry standard” (Accenture, 2013a, p. 5). MNOs can benefit by creating additional revenue streams, while ISPs – by using their startup position as a first mover.

On the other side, banking services and technology are highly correlated. Banking industry has been considered as a rather conservative and resistant to change. It used to be a moderate dynamic market for decades due to the stable industry structure. However over the last 20 years things have changed. Stable industry structure with defined boundaries turned into “an industry with ambiguous structure and blurred boundaries” (Fasnacht, 2009, p. 8), where neither the suppliers’ (vast numbers of new market entrants) nor the demanders’ action and/or reaction to the new challenges can be easily predictable. Innovation is considered as “the single most important factor driving sustainable top- and bottom-line growth in banking” (Sullivan, Garvey, Alcocer, & Eldridge, 2014, p. 35) and as a logical answer to the changing environment in which banks operate. It has been also argued that “companies that fail to innovate and adjust to industry disruptions will miss key opportunities for growth” (Accenture, 2013a, p. 5) and survival on the market. Over the years, banks have established new distribution channels for providing their core services (payments and accounts) such as telephone banking, ATMs, Internet, and mobile banking as a way to sustain their competitive advantage and position on the market and as way to improve the service quality (as discussed “quality in providing payment means quick, reliable and cost-efficient processing of client orders” (Macho, Pater & Seyffertitz, 1994, p. 202)).

In Chapter [2.3](#) the innovation timeline introduced by Chakravorti, & Kobor (2005, pp. 12-16) was presented. In this sense, banks have three possibilities when making decisions regarding extending their payment service portfolio:

- they can lead the market by heavily investing in new payment innovations and expecting high profit margins and insecurity whether the innovation is going to be accepted or not;

- they can follow and invest in a proven technology (ibid, p. 14), that sooner or later has the chance to become a standard in the industry and needed to be implemented by other players on the market;
- or wait until a new technology succumbs to commoditization and use their (still) superior position and acquire companies providing the new technology and adopt and implement it in their existing service portfolio (big fish eats little fish).

If we take into consideration the four categories of decisions suggested by Rosenzweig (2013), the decisions that banks need to make belong in the upper part of the diagram. Placing competitive bets introduces a competitive dimension in the decision-making process, meaning that decision-maker's success depends on and is determined by the decisions of the others (ibid). "The terms of the game" in such decision-making environment are predetermined and cannot be changed by the "players". If we translate this to what it was discussed in this thesis, we can argue the following: The contingency factors discussed in Chapter 5 – technological, legal, cultural and demographic environment – have significant impacts on the mobile payment services market, but are outside of the influence and control of the market itself. There are other players that compete with and try to outperform banks in the payment services. Thus, the banks in Austria when making decisions should observe and anticipate the moves of their competitors (in our case paybox and VeroPay) and recognize the right time to grab the chance of introducing their own mobile payment service.

In this context the model for disruptive technologies introduced by Bower and Christiansen (1995) should also be mentioned, as commonly accepted model in strategic innovation theories. In a nutshell, the model deals with the way of how already established leading companies fail "to stay at the top of their industries when technologies or markets change" (ibid). The main message this model delivers is "catching the right wave" – when it is the right time to let the mainstream business die and focus on doing something new or join the ones that have already introduced it, because "if the corporation does not kill the old-fashioned business itself, competitors will" (ibid). In the payment industry it is not about introducing disruptive innovations. Long time we are witnessing a coexistence of different payment methods (cash, financial cards, e- and m-payments) complementary to each other. In the first chapter it was also argued, that many firms often "develop and self-provide computerized versions of the services earlier than banks or other types of financial service producers begin to offer them" (Oliveria & von Hippel, 2011, p. 806). In the case of VeroPay, there is a strong connection with the Tyrolean bank – Hypo Tirol Bank. Assumably, the application pave the way for extending the bank's

service portfolio with its own mobile payment application and test the acceptance among the customers. “Reaching a wide enough initial adopter base of consumers and merchants (a critical mass) is a crucial success factor for m-payments” (Mallat, 2006, p. 3), due to the fact that “payment systems exhibit network externalities” (ibid; see [5.1](#)).

With the advancement of the mobile technology new players aggressively enter the payment market. However payment service providers other than banks are still “unable to compete with banks on an equal basis as they are obliged to use the services of a bank to settle payments” (European Commission, 2012, p. 10). Additional strategic asset of the banks are the bank accounts. “Bank accounts can be plugged and integrated directly with the payment solutions in order to facilitate the settlement of payment” (Gaur & Ondrus, 2012, p. 174). As discussed in Chapter 4, the presented alternative payment method examples were directly connected with the user’s bank account. “Bank accounts are specific and cannot be easily replicated by other players in the mobile payment ecosystem” (ibid). Having this privilege and luxury of still holding a unique position in the mobile payment ecosystem, banks should use their strategic assets by sustaining their competitive advantage.

Holding this position and having an ace up their sleeve (controlling and owning the key element in the payment process – accounts), banks should seriously consider their future moves. In this manner we are moving upwards in the upper right corner of the Rosenzweig’s diagram. Managing for strategic success means that the outcome of the decision made can be influenced by the decision maker her-/himself and with it the rivals can be outperformed. In our case scenario, though the environment remains volatile and out of control, banks can rely on their long banking experience and presence on the market and can “take advantage of their large and diverse customer base and the breadth of the products that they offer” (Chakravorti, & Kobor, 2005, p. 9). In terms of banking, an increase in customer satisfaction can be achieved by the enhancement of the customer experience through the enhancement of the quality of the provided services and products. The evolution of the mobile channel contributes in the enhancement of the customer experience. This has been confirmed in the Capgemini and Efma’s (2013) World Retail Banking Report.

In order to sustain their competitive advantage and enhance service quality and with it the customer experience, banks in Austria should consider providing mobile payment services. The terrain is prepared. Although the cash is still the most preferable means of payment among the

Austrians, we saw that there is positive tendency and consumers' willingness to use mobile banking functionalities (see [3.2](#)). Policymakers are creating the laws in favor of cashless payments and big players in Austria (such as Austria Card, Card Complete, Drei, Erste Bank und Sparkassen, First Data Austria, MasterCard, Nexperis, PayLife Bank, T-Mobile and Visa) have recognized the potential of the technologies that enable m-payments. Moreover the smartphone acceptance (the device through which the payment is conducted) in Austria is high (see [5.1](#)). By going this way, banks should truly consider to extend the horizon of perceiving the smartphones as just another service distribution channel (as Gupta, (2013, p. 3) suggests) and properly make use of its potential.

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Appendix A

Abstract (German)

Die Master-These schließt in sich drei Aspekte unserer zeitgenössischen Gesellschaft ein: die Bedeutung des tertiären Wirtschaftssektors – Dienstleistungen in den entwickelten Ländern, die Entwicklung neuer (mobilen) Technologien und die hohe Penetrationsrate und Akzeptanz von „dem Gerät“ der neueren Geschichte – das Smartphone. Das Ziel dieser Arbeit ist es, diese drei Aspekte in den Bankdienstleistungssektor in Österreich (mit Schwerpunkt auf dem Zahlungsverkehr) zu übertragen. Der Dienstleistungssektor steht im engen Zusammenhang mit den Technologieentwicklungen und demzufolge werden den Zugang, das Erbringen und den Verbrauch von Dienstleistungen optimiert. Die Bankenbranche ist keine Ausnahme davon. Sie wurde davon stark geprägt und versucht sich neuen Herausforderungen stellen zu können und damit sich weiterzuentwickeln. Besonders betroffen und unter Druck gesetzt sind die Bankkerngeschäfte – Konten und Zahlungsverkehr. Deren zentrales Element ist das Geld, das eine Änderung in seiner Form der Existenz im Laufe der Zeit erlebt hat. Geld (wie viele andere Waren und Dienstleistungen) wurde digitalisiert und dessen Wert wurde auf Plastikkarte und in letzter Zeit auf Mobiltelefone übertragen (PPP-Evolution (Paper - Plastic - Phone) des Geldes). Zusammen mit dem technologischen Fortschritt kommt einerseits zu sozio-demographischen Verschiebungen und Veränderungen in dem rechtlichen Umfeld. Andererseits eröffnen sich Chancen für neue Teilnehmer (außer Banken) auf dem (bargeldlosen) Zahlungsmarkt und damit ist die Position von den Banken auf ihre Kernfinanzdienstleistungen gedroht. Da die Banken sehr stark von den Technologieentwicklungen beeinflusst sind und sie zu den schwersten Investoren in der Informationstechnologie zählen, die Master-These wird einen wertvollen Einblick geben, wie die Banken die neue (mobile) Technologien und das Smartphone umsetzen bzw. umsetzen könnten.

Appendix B

Abstract (English)

The Master's thesis comprises three aspects of our contemporary society: the importance of the tertiary sector of the economy - services in the developed countries, the development of new (mobile) technologies and the high penetration rate and acceptance of “the device” of the contemporary history - the smartphone. The aim of this work is to translate these three aspects into the banking service sector in Austria (with a focus on the payments). The service sector is closely related with the technology developments and consequently the access to services, their provision and consumption are optimized. The banking industry is no exception to it. It is strongly influenced by technology developments and tries to meet new challenges and thus to develop further itself. Particularly affected and being put under increasing pressure are the core banking businesses – accounts and payments. Their central element are the money that has experienced a change in its form of existence over time. Money (same as many other goods and services) were being digitized and its value were being transferred to plastic card and lately mobile phones (PPP (paper – plastic – phone) evolution of money). Along with the technological developments comes both to socio-demographic shifts and changes in the legal environment. On the other hand, opportunities for new participants (other than banks) on the (cashless) payment market are opening up and with it the position of the banks on the payment market is threatened. Due to the fact that banks are very much impacted by the developments in technology and they count among the heaviest investors in information technology, the Master's thesis will attempt to provide valuable insight into how the banks implement or could implement the new (mobile) technologies and the smartphone.

Appendix C

Curriculum Vitae

PERSÖNLICHE DATEN

Name **Katerina Markoska**

Staatsbürgerschaft **Mazedonisch**

AUSBILDUNG

Seit 03/2012 **Universität Wien, Fakultät für Wirtschaftswissenschaften**

Studienrichtung **BWL (Master)**

Schwerpunkte **eBusiness und Finanzdienstleistungen**

03/2006 – 02/2012 **Universität Wien, Fakultät für Wirtschaftswissenschaften**

Studienrichtung **BWL (Bachelor)**

Schwerpunkte **Personalmanagement, Produktionsmanagement und Rechnungslegung**

09/2001 – 06/2005 **Gymnasium „Nikola Karev“ – Skopje, Mazedonien**

Schwerpunkte **Mathematik und Sozialwissenschaften**

BERUFSERFAHRUNG

09/2013 – 10/2013 **UniCredit Bank Austria AG**

Funktion **Praktikantin (Premium Internship / Cross-divisional Praktikum)**

04/2013 – 07/2013 **UniCredit Bank Austria AG**

Funktion **Praktikantin (Strategic HR Management)**

10/2012 – 12/2012 **UniCredit Bank Austria AG**

Funktion **Praktikantin (Strategic HR Management)**

08/2012 – 08/2012 **UniCredit Bank Austria AG**

Funktion	Praktikantin (CC Business Partner)
07/2011 – 08/2011	UniCredit Bank Austria AG
Funktion	Praktikantin (Small Business; Service Model Business Clients)
02/2009 – 05/2009	UniCredit Bank Austria AG
Funktion	Praktikantin (Corporate Sales; CEE Retail)
10/2008 – 01/2009	Agentur für Ausländische Investitionen der Republik Mazedonien, Botschaft der Republik Mazedonien – Wien
Funktion	Research Assistentin
07/2007 – 09/2007	DEAL-Consulting, Skopje, Mazedonien
Funktion	Accounting Assistentin

SPRACHEN

Mazedonisch	Muttersprache
Englisch	verhandlungssicher
Deutsch	verhandlungssicher
Bulgarisch	verhandlungssicher
Serbokroatisch	verhandlungssicher
Italienisch	Grundkenntnisse