

# Technical and Cultural Impacts on Development of the Telecommunication Services

## The Case of Mobile Payment Market

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**Abstract** — Mobile phones develops increasingly as a significant channel for fundamental banking services in the countries with a low level of material well being (developing countries). Mobile Payment with mobile phones indicates the partial convergence of banking and telecommunication. There are important differences in usage as well as in the acceptance of the M-Payment in developed and developing countries. This paper analysis the reasons for the different popularity of the usage of these telecommunication services in different parts of the world with focus on European Union and Serbia.

**Key words** — Telecommunication Services, Mobile Payment (M-Payment), Mobile Money Transfer, Near Field Communication technology, Culture

### I. CONTEMPORARY USAGE OF MOBILE MONEY TRANSFER SERVICE

Mobile Money Transfer (MMT) is a peer to peer structure of Mobile Payment (M-Payment) System and a project of the Global System for Mobile Communications (GSMA) to catalyze the marketplace for mobile remittances and financial services. As stated by the European Union Information Website EurActive [1] "Using a mobile phone to make direct payments could become the norm in Europe following cooperation announced between the GSM Association (GSMA), which brings together the world's major mobile operators, and the European Payment Council (EPC), the body representing the EU banking sector". European Union made a further step and with its decision-making body European Payments Council signed an agreement with Global Platform, the smart card infrastructure industry association and standards leader to work together to promote smart card technologies in EU [2]. But the reality in Europe regarding Mobile Payment System today differs from the statement and intentions stated above. According to the research made by Linnemüller and Haubold [3] in the European Union nowadays exists low demand for mobile banking solutions. The University of Augsburg [4] made

with its research group *wi-mobil*, the international comparison to the usage of the mobile phones for money transfer. The payment solutions by using of the mobile phones (Mobile Money Transfer) is up to now in Germany, compared with some developing countries like South African or East Asian countries, undeveloped part of the telecommunication services. The emerging spirit of optimism regarding the German M-Payment market in the beginning of the year 2008 does not exist anymore in the year 2009. Reason for the positive resonance and development of the German and European M-Payment market in 2008 have been the Mobile Money Transfer offers of the biggest telecommunication service suppliers like Vodafone and O2 - two biggest mobile services suppliers, Deutsche Telekom biggest fixed line network supplier and with Contoprnto AS specialized M-Payment service provider. Development of the M-Payment market found but insufficient respond an acceptance by the German customers. Both, the procedure "mpass," developed as a result of cooperation of Vodafone and O2 for the sector of the payments in E-Commerce as well as the procedure "Call & Pay flexible " of the Deutsche Telekom according to the payment can be authorized with the mobile phone, but the bill is the part of the fixed line network billing lacks up to now the spread in the German market. Even the simplification of the "Call & Pay flexible" concept, according to only the goods offered in the vending machines can be paid, had not have success. The similar insufficient development of the M-Payment acceptance, has been noticed with the so called "Luupay" procedure of the Contoprnto ACE, according to the payments between end-customers can be made. On the other side there are advanced applications in East-Asia like in Japan or Philippines. Also there are Many Mobile Money Transfer (MMT) solutions in Africa. Japan is the marketplace where payments without contact with the mobile phone work for many years. More as 90 percent of the mobile phones already support quick 3-G-data communication (and 40 percent of the Mobile Network Operator (MNO) turnovers are made with data), and already half of the mobile devices have a so called FeliCa (contactless RFID smart card developed by Sony) - microchip. But also France shows a similar development for some years. Differently than the Japanese, the French market is not dominated by a single telecommunication cellular phone network provider. Hence, the French model

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is based, above all, on collaboration. According to Jeffery [5] in Serbia for example, mobile payments firm Upaid has been in 2007 announced the national begin of its Mobile Payment Service (MPS) marketing operation. Together with all 3 mobile operators (Telekom Serbia (MT:S), Telenor and Vip mobile) and 10 banks in Serbia, the start is an extension to a service started in October 2006 with Serbian mobile operator Mobile Telekom Serbia and Visa International.. As stated by the European Payment Cards Yearbook [6] – Serbia, DinaCard has in cooperation with Telekom Srbija in April 2008 initiate payment via mobile phone. A M-Payment has also been launched for Visa holders of the cards. Founded on the active payment network in use by Telekom Srbija, the service allowed customers to top up their mobile phones using SMS text message, which then allowed payment from a Visa debit or credit card. All clients of Raiffeisen Bank, Banca Intesa, Alpha Bank, NLB Continental Banka with Visa payment cards and MTS prepaid mobile accounts were eligible to sign up to this service [6, p.8]. Together they represent over 75% of card holders, and more banks have applied to join. In-between is Mobile Payment System in Serbia well developed and widely accepted by the customers. Very good acceptance is also noticed in African countries like Kenya, where the MMT is one of the mostly used channels for money transfer. In Kenya, for instance, Safaricom Company slashed its churn rate by about 10 % in the 12 months following the launch of nationwide electronic cash service called M-PESA [7]. The hypothesis is that clients are less about to change operators if their existing service provider offers fiscal services because of the apparent problems in transferring account data. The examples above are only a part of the overview for the dissimilar acceptance and usage of M-Payment in form of MMT in certain countries. More understandable is this development if one takes into account that MMT market has enormous potential for developed countries.

## II. ECONOMIC AND SOCIAL IMPACT OF THE M-PAYMENT

According to the GSM Association [8, p.6] analysis of the Mobile money market “millions of people in developing markets are dependent upon the support of primary wage earners often working far from home in cities and abroad where work opportunities are concentrated” and many of the people supporting them are “working in countries such as Germany, France and the UK, as well as the Nordic bloc”. Similarly, important numbers of people from West Africa are living and working in US. International and the Europe remittances are estimated to be big than aid and foreign direct investment. Thus is the revenue model for MMT very potential business channel for generation of the new revenues because operators get revenues by taking a transactional fee comparable to credit card companies (approximately 3 percent, depending on different factors, i.e. directives and regulations). Worldwide remittances in USD are presented in the figure below.

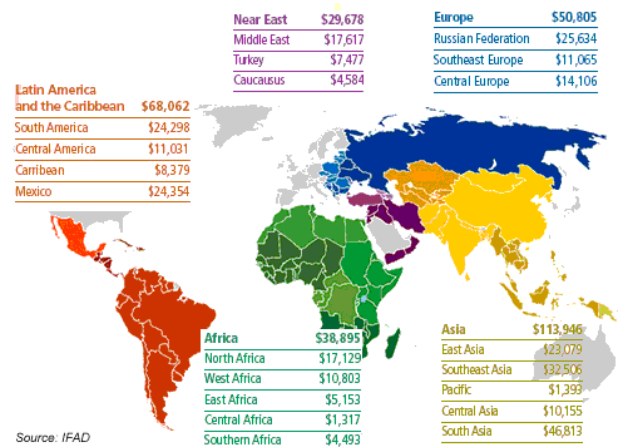


Figure 1. Worldwide Mobile Money Transfer remittances in mio. \$

In Pakistan, for instance, app. 12 million people, and these are 7 percent of the population of the country, are employed in overseas. But only 1 million people in Pakistan hold bank accounts. This is in contrast to a mobile subscriber base of app. 70 million and yearly expansion of approximately 100 percent. Obviously mobile technology has the possibility to considerably increase the application of mobile payment systems in Pakistan and nations worldwide. Linnemüller, A and Haubold, F [3] state that predominantly in rural areas, where traders would have needed to go to urban areas and check for demand and negotiate on price, M-Payment offers significant improvement of the living standards because this business can be conducted on the mobile phone. Particularly in some poor parts of the world people make their living from small business start ups. With right of entry to monetary services they can contribute in national markets. All these have the impact of the GDP growth. For the telecommunication M-Payment providers there are also significant economic advantages like acquisition of the new customers as for example a completely untapped customer base like those without bank account or increased network usage with the consequence of better SMS and data traffic. There are even impacts on the corporate culture of the provider, because due to the positive impacts of the service on society provider can build positive public relations and can show its commitment to the local problems of particularly marketplaces. The examples above don't let us to conclude on one key reason for the different development of the M-Payment even if the business preconditions are good and similar. Especially is interesting why in some developed countries with all technical and financial preconditions the telecommunication service suppliers are not able or willing to implement this new channel of payment. But what are the reasons for such different development of the MMT market?

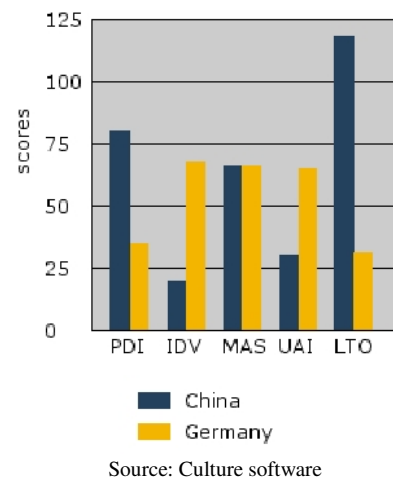
### III. CAUSES FOR DIFFERENT ACCEPTANCE OF M-PAYMENT CHANNELS

Some market researchers as introduced at Conference mobile Communications - technologies and applications MCTA [9] see the reasons for such development in the shift of the interest for the technological development and the delay in the progress of appropriate modus operandi and application solutions. Namely, the main topic in Germany nowadays is Near Field Communication technology (NFC), without to making steps of the development of the M-Payment market by using of the mobile phones. For example, long time was only one NFC capable mobile phone obtainable commercially, 6131 NFC of Nokia. The Finnish manufacturer launched in the third quarter in 2008 with Nokia 6212 another device on the market [10]. In Germany there are started only some pilot projects. The complexity of the M-Payment problem is massively underestimated by banks and telecommunication service providers. Also in nearly all western markets the value added net and the development of the procedures do not follow clear and comprehensive approach. As stated by Pousttchi [11], the attraction for MMT is nowadays in Germany still unbroken for customers and traders - there are only no right and appropriate procedures for it. Linnemüller, A and Haubold, F [3, p.4] see the problem in low demand for mobile banking solutions in European markets due to “the existence of a sophisticated and powerful banking infrastructure and the high penetration of online banking” which “have slowed down the spread of MMT services”. On the contrary, in countries with low or middle levels of GNP per capita a big part of the inhabitants is unbanked, leading telecommunication operators to target this segment for Mobile Money Transfer. The characteristic product is so called virtual wallet in the mobile phone, balanced by a service to deposit cash in a shop connected to a mobile operator. As portable devices and ever-present network access have become very widespread, mobile payment has the probability to become a prime tool for low-value spending instead of cash, particularly in these developing countries. As the researches shows there are developed countries (with similar preconditions) where the acceptance of the M-Payment is high, like in Japan, Nord America etc. and in the same time there is low demand for M-Payment also in developed countries like Germany, UK etc. Also in the new EU or in South Eastern courtiers as well as in Africa the acceptance is high. Thus generalisation of the causes for the different acceptance of M-Payment channels based on powerful banking infrastructure and the high penetration of online banking or on different technological usage as well as the development of the procedures for integration of the system is not possible.

### IV. DISCUSSION

Obviously the differences have the roots also in the generally tendencies of the population for the acceptance of newness and innovation. These tendencies can be

derived from the characteristics of the national behaviour and the adjusted marketing concept. As stated by Steenkamp [12] national culture has a great impact on the shaping of the marketing concept in order to adjust them in that ways that it will be accepted in the certain country. According to research of the Hofstede [13, 14] and other intercultural research data, there are regional cultural groupings and national that affects the behaviour of societies and organization. According to his research the rejection and lack of acceptance for innovation is the typically characteristic for the societies with high Uncertainty Avoidance. Uncertainty Avoidance is one of the five Hofstede’s Cultural Dimensions which enable to define the characteristic of the nation and deals with a society’s tolerance for uncertainty and ambiguity. Comparison of the German’s Cultural Dimension Uncertainty Avoidance with the China’s data is presented below.



#### Legend:

PDI= Power Distance Index  
 IDV = Individualism Index  
 MAS = Masculinity vs. Femininity Index  
 UAI = Uncertainty Avoidance Index  
 LTO = Long Term Orientation

Figure 2. Cultural Dimensions of China and Germany

Germany is typical representative of the Country with high level of the Uncertainty Avoidance. Consequently, Germans are unwillingly to accept innovative things. They wait rather and let test the innovation by the others and afterwards accept them, if there is a certainty the innovation is comfortable and structured with no room for surprising. Chinese have opposite behaviour. Thus for such nations marketing concept for M-Payment should bring the feeling for security and comfort in order to work sufficient. Garetta *et al.* [15] argue that the integration of cultural subjects in marketing and in new product development is an important contributor to the development of the new products and performance. Thus mechanisms developed e.g. in western cultural environments may not have applicability in other national cultural settings and also the success models aboard can’t be applied in the own country with expectation of the same success. Results based on the

study of the marketing mechanism in New Zealand and Singapore indicates that “there is a link between formalization, centralization, role flexibility and interfunctional climate mechanisms with the Hofstede dimensions of Power Distance, Masculinity and Uncertainty Avoidance of national culture. Managerial implications are that national cultural values and settings of the respondents are important when determining best integration mechanisms”. Apparently, in order to enhance the worldwide acceptance of the MMT, companies need to shape procedures for integration for the models taking cultural aspects into consideration.

#### CONCLUSION

As outlined above, M-Payment in form of Mobile Money Transfer is an example for profitable business model but in the same time, regarding the different stage of integration of the system worldwide, also an example for lack of readiness of the telecommunication providers to change old marketing and business models in order to create tailored services. M-Payment models lead to high financial profits for telecommunication providers and have also deep impact on social and economic development. Thus telecommunication service providers are encouraged to take deeper into consideration the cultural impact on the marketing concept and avoid the simple reproduction and application of the functioning models on dissimilar cultural consumer groups.

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