Mobile Payments:

Are you Ready for the Early Majority?

Telecom & Media Insights
Februray 2008

Contents

1 Abstract

M-payments refer to the use of mobile devices such as mobile phones and PDAs to make cashless financial transactions on the move. M-payments can offer a wealth of revenue generating possibilities for mobile telecom operators facing limited growth in ARPUs. Telcos in the Far East have already stolen a march on Europe and the US in this space. The market is likely to be shaped and powered by supply side technology standardization, financial services drivers, and growing consumer acceptance.

We believe that there are three key strategic options for mobile operators: m-payments as a core business, provision of m-payments as an add-on service, and no direct, or limited m-payments business. We estimate the European market will be worth €913million in 2008, rising to over €8.7 billion in 2012, approximately 5-10% of total projected mobile data revenues. We recommend that mobile operators in Europe take an incremental but active approach now, according to their core competencies, appetite for risk, and strategic intent. Whichever route is chosen, mobile operators need to take strategic decisions with regard to their investment in this market, sooner rather than later, particularly with financial services companies waiting in the wings.

2 Introduction

Bankers worldwide are considering how to increase the profitability of their retail accounts that bring in, on average, just €77 annually,[1] barely enough to cover the massive costs of payment handling. Similarly, telecom executives are wondering how to increase post-paid mobile subscriber ARPUs, currently averaging about €25 per month. In both industries, senior executives have mobile payments (m-payments) and transactions clearly on their radars as a potential revenue generator for the future.

Some initiatives have already been launched. Japanese pioneer NTT DoCoMo launched Mobile Credit Services iD and DCMX with Visa and MasterCard two years ago, and has extensive penetration with users and participating merchants. Other leading financial institutions are also convinced of the benefits of "mobility." Visa's strategic investments and partnerships with technology leaders underscores its commitment to "ubiquitous electronic payment on mobile devices.[2]" In November 2006, Rabobank launched its MVNO[3] "Rabo Mobiel", targeting retail customers with mobile prepaid and postpaid phone services, and mobile banking and payment services.

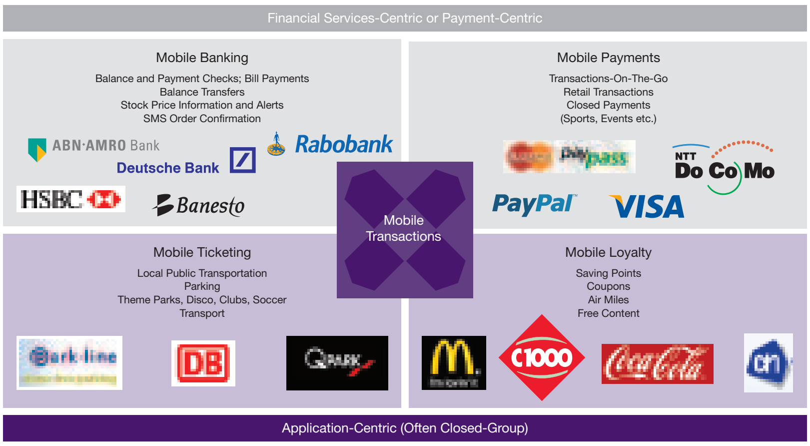
In this article, we assess the challenges and potential of the m-payments market for mobile operators. Firstly, we define mobile transactions and m-payments, and look at the market drivers that will impact both supply and demand. We then identify strategic options for operators, assessing each option for its competitive positioning within the new m-payments value chain and its revenue potential. Finally, we make recommendations for players, according to key competencies, appetite for risk, and strategic intent.

1 World Retail Banking Report 2007; Capgemini, ING, EFMA. 2 Visa Press Release, Visa CEO Sees Collaboration with Wireless Industry as Key to Unlocking Potential of Mobile Payments; March 2007. 3 Note: MVNO - Mobile Virtual Network Operator.

3 What are Mobile Transactions and Payments?

The umbrella term "mobile transactions" covers a broad range of services including mobile banking, mobile payments and mobile ticketing/reservations and loyalty services, all of which are designed to make it easier for consumers to get information, to pay for goods and services, use public transport, and share data between devices[4] (see Figure 1).

Figure1: The Breadth of Services Defined as Mobile Transactions



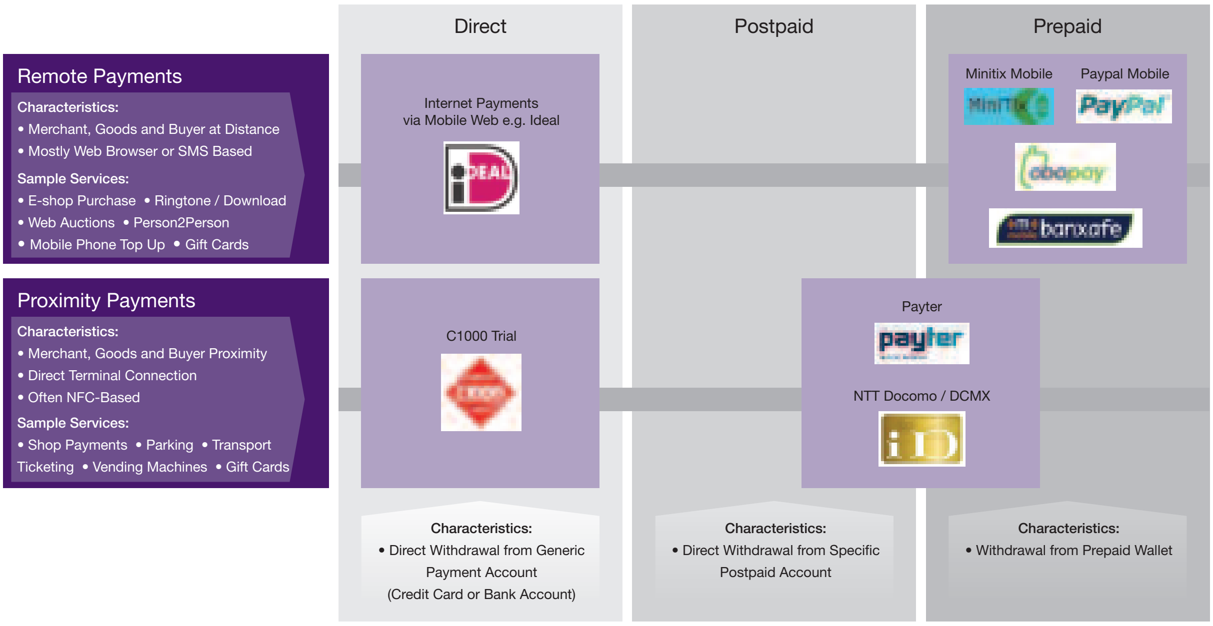
Source: Capgemini analysis.

Within the m-payments category, it is useful to understand, the different types of payments determined by the underlying device technology, financial account type, and end user usage, summarized in Figure 2.

Proximity m-payments involves using a proximity-enabled device to communicate with a point-of-sale terminal to initiate payment and rapidly exchange information, content or transaction data over a distance of just a few centimetres. In contrast, remote payment transactions are handled over a remote channel, usually via SMS or an Internet browser. The user will have options in terms of the type of account from which to make payments. This will vary from prepaid (cash stored on a local chip or a dedicated "e-wallet"), direct payment (from a generic card or bank account) or from a dedicated postpaid account (managed by an m-payment provider). The latter two require a higher level of security than the wallet, because of the low amounts typically stored in prepaid accounts.

4 NFC Forum Website November 2007.

Figure 2: Mobile Payment Types, Characteristics and Example Services



Source: Capgemini analysis.

Our focus in this article is on m-payments in the European market, and on services using Near Field Communication (NFC) technology as their proximity wireless connection. We have chosen this focus as most industry influencers consider NFC as the most likely technology to offer a compelling user experience and successful mass-market rollout in the near future.

4 What Factors Might Influence the Development of this Market?

In researching this paper, we assessed the viability and attractiveness of NFC-based m-payment services in Europe for mobile operators. In the Far East, significant m-payment adoption has already taken place, with contactless smart cards being embedded into mobile handsets (especially in Japan and South Korea). Outside this Asian "cradle," market penetration is very low, however, we believe we are on the verge of a take-off. A review of the current 30+ mobile payment initiatives in Europe, Africa and the US indicates that most NFC-based services are still at trial stage, with launches imminent or planned for the next 12-18 months.

The introduction and adoption of mobile payments will be impacted by factors such as supply-side innovation and standardization, financial services market dynamics, consumer response, and e-payment adoption. We now explore these factors in more detail.

Supply-Side Technology Standardization

With so many m-payment standardization factors and industry bodies,[5] there is certainly a challenge ahead to bring about industry agreement. Standardization, on matters such as integration of the secure chip holding private consumer data within handsets, is needed to boost economies of scale in order to bring down the price of chips by around 50% to below $1.[6] With regard to handsets, the only NFC phone available in the European market is the "Nokia 6131 NFC"; other major handset manufacturers are mainly at prototype stage. We expect standardization, alignment, and NFC handsets to come about during 2008 in Europe, lowering investment risks in m-payment.

Financial Services Drivers

Financial services players themselves are making inroads into this emerging market with some new developments. The market is attractive for a number of defensive and offensive reasons. In addition to trying to drive customer revenues, most banks are striving to reduce the significance of cash and the cost of handling it. By lowering entry barriers, the harmonized Single European Payment (SEPA) infrastructure will cause major shifts in the European payment industry, and could also result in new non-banking players entering the lucrative financial services sector.

In addition, the debit/credit enhanced security standard introduced by EMV (Euro Pay, MasterCard, and Visa) will force banks to replace their card payment infrastructure, thus creating an opportunity for contactless-payments. Moreover, as already mentioned, some banks such as Rabobank are involved in launching their own MVNOs, seeing the opportunities in m-payments and using the mobile phone as a convenient communication channel to reach their customer base.

5 ETSI; NFC Forum; ETSI; EMVCo; GSM Association; Mobile Payment Forum. 6 ABI Research, 2006.

Consumer Feedback

However, what is in it for the customer? At face value, there would appear to be many obvious benefits—easy access to money/cash, payments processed quickly and efficiently, payment details always at hand, fewer cards to carry, seamless integration with different loyalty schemes, and immediate access to classic mobile banking services.

Some consumer surveys and trials also lead us to conclude that consumers would adopt m-payment services provided they were easy to use, convenient, cost-effective and secure between the handset and point-of-sale reader. Further studies have indicated that younger consumers would consider the availability of mobile payment capabilities a valid reason to switch bank or mobile carrier.

The interconnectedness between related mobile transactions services means that bundling complementary services—combining the best of communication, entertainment and other services—is likely to be an effective means of meeting consumer needs.[7]

E-payments Success

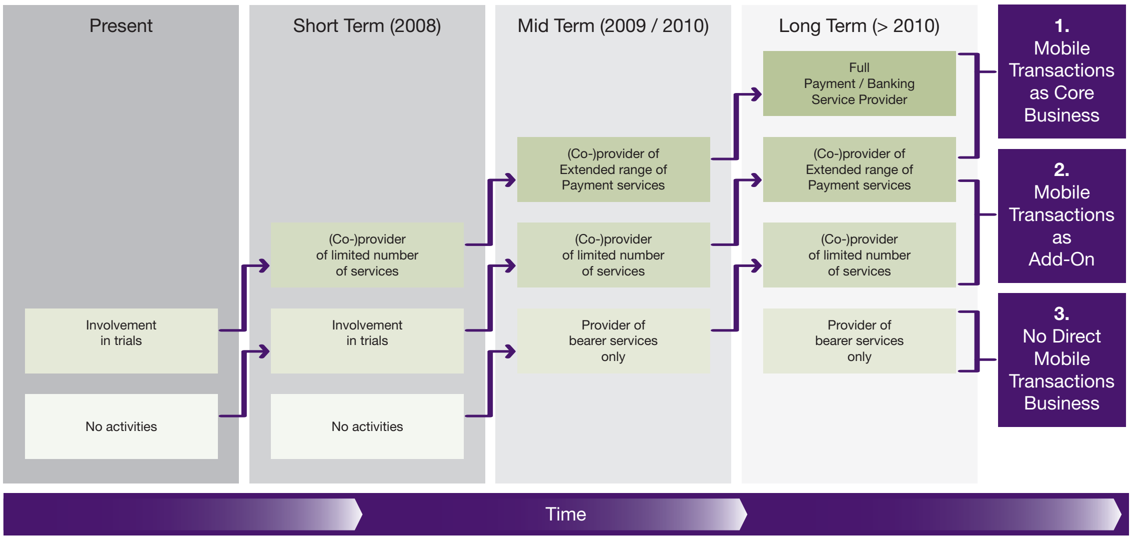
While the mobile phone may be an essential daily tool for users, what does the e-payments adoption rate indicate for m-payment success? Certainly there has been a rapid and mass adoption of Internet payment mechanisms over recent years, and research findings indicate that the value of worldwide payments using mobiles will follow suit, growing from $2 billion in 2007 to nearly $22 billion by 2011.[8]

7 RFID Publieksonderzoek, 2007. 8 Juniper Research 2007.

5 Strategic Options for Mobile Operators

These industry factors seem to indicate that this market could be both attractive and growing. So on what basis should mobile operators consider investment and market entry? Capgemini has developed an industry model that describes a range of strategic options, illustrated in Figure 3. This indicates an incremental mobile payments business model over a 5 year+ timeframe.

Figure 3: An Incremental Approach to Mobile Payment Services



Source: Capgemini analysis.

Our experience and discussions with European and US major players suggest that, over time, this market will move from hesitant interest to increasing commercial offerings over the next 12-18 months. We expect activity to step up between 2009 to 2012, with major investment from a number of operators, choosing appropriate positions within the emerging value chain. Standardization and deregulation could possibly also enable European mobile operators to consider offering a full range of m-banking services in the longer term.

By 2012, we predict there will be three key strategic options for competitive involvement in this mobile payment market: m-payments as a core business, as an add-on service, and no direct involvement.

1. Mobile Transactions as a Core Business

In this option, mobile operators will create and develop a separate business unit for a broad range of retail mobile banking and mobile transaction services, building a solid position as a dominant player in the m-payment value chain. Some operators may even take the ultimate step and become a form of bank themselves. Such a unit would market, sell, and serve a set of mobile financial services as a value-added product over current mobile services for a monthly fee, and as such, reap greater m-payment benefits.

Only the most bold and daring mobile operators will diversify to embrace banking competencies, but from a shareholder perspective, banks have significantly outperformed their telco rivals over the last two decades. In addition, in some emerging economies, prepaid mobile usage credit is already considered a parallel everyday currency. This more radical approach may in fact be more viable than it appears to be at first sight.

However, despite these advantages, developing banking expertise could be a challenging venture for telcos, particularly given the effort required to converge these services with their mobile activities to offer a truly seamless customer experience. Furthermore, players must have the long-term commitment, patience and stamina to run such a unique venture. Nevertheless, this has not stopped NTT DoCoMo or Mobilkom Austria from developing pioneering services.

We believe that only two types of operators could make such a strategic play: Global and multi-continental operators, and also innovative new mobile entrants with financial institutions/banks as their main shareholders. International mobile operators have the market volume and competitive presence to drive standardization and mass-market supply cost. Large multinational telcos are already conglomerates of loosely integrated divisions and diverse capabilities. They have experienced many of the financial/cash issues traditionally associated with banking. Shareholders with an existing retail banking network and financial know-how, provide a unique competitive advantage to m-payment new entrants, creating a win-win model. Take Rabobank's Rabo Mobiel venture for example. For the bank, Rabo Mobiel strengthens its innovative brand image, helps to realize its virtual banking vision, expand its multi-channel distribution, and facilitates long-term cost reduction.

2. Mobile Transactions as an Add-on Service

Other mobile operators will consider m-payment services alongside their existing service portfolio to generate additional revenues. They will join forces and partner with other players in the value chain to complement competencies. Potential partners will be drawn from diverse origins; banking, capital investment, retail and distribution, technology manufacturers, utilities, municipalities, quasi-governmental bodies, educational and social communities to parade a few. In such a set-up, operators can only claim a part of the transaction cost and benefit from the incremental mobile data traffic generated by m-payment usage.

By partnering, telcos would limit their exposure but also gain greater insight into market drivers, enabling them to influence standardization to their benefit, and to synchronize the development of m-payment in line with the industry's development, including 4G and wireless/mobile broadband multimedia.

This strategy would put mobile operators in a stronger position within the m-payment value chain, a position exemplified by Privat:Mobil in the Ukraine. This will require investments of time, money, and resources to secure an influential and beneficial role in several consortia. There is obviously a risk that only a few of these initiatives will succeed; with so many players jostling for a favorable position, the road to agreement is likely to be slow and convoluted, particularly without proper governance.

This strategy is likely to be adopted by most national incumbents and mobile operators with significant local market power. Their dominance of the local mobile market would make them a natural m-payment consortium partner and allow them to claim a higher share of the transaction cost. Although regulatory bodies might find it difficult to acknowledge, governments are likely to favour the dominant mobile player to steer such a new mobile transaction and payment national industry.

3. Marginal or No Involvement in Mobile Payments

Some mobile operators may choose not to invest at all, or only marginally, opting instead to reap the benefit of increased data traffic or the profitable contribution margins of wholesale activities, such as hosting MVNO capabilities for other players including banks.

This latter role—the provision of bearer services—is obviously the lowest (immediate) risk option for a mobile network operator or service provider. The downside is that the telco would be confined to a limited "transport" role in the value chain—a role easily commoditized. We believe that financial returns will therefore be limited.

We believe most second tier mobile operators will adopt this strategic route. The market position and regulatory obligations often result in spare assets or idle capacity. This move is viable and sustainable only for these local players that have developed a low-cost but high performance wholesale business strategy. Such capabilities make them the "partner of choice" for hosting m-payment (and any other kinds of) MVNOs. The MVNO undertakes the risk and investment of development, marketing and servicing m-payment business, with limited exposure for the network hosting MNO. In addition, the MVNOs contribute to maximize the revenue (under-utilized) assets.

6 How Big is the Opportunity for Mobile Operators in Europe?

If the market drivers appear on the whole to be positive, can we determine if the market opportunity is large enough to justify investment? Some industry executives have disputed that banks and telcos can generate significant revenues from m-payments, forecasting only small-scale revenues, and declaring it a market driven by handset manufacturers rather than consumer demand.

To objectively assess the viability and attractiveness of m-payments for mobile operators, we developed a forecasting model focusing on four European regions: EU-27, Non EU-27, Russia and Turkey.[9]

We started by identifying five main sources of revenue and estimated the volume and value of these five sources of revenue for the period 2007 to 2012.[10]

1. Traffic — Generated from mobile broadband Internet access.
2. Transaction cost — A percentage of m-payment transaction costs.
3. Value-added services — Generated by marketing own brand m-payment services.
4. MVNO — A share of wholesale mobile data revenues from hosting m-payment MVNOs.
5. Product revenues.[11]

We then aligned the likely revenue streams for each of the Strategic Options, as represented in Figure 4.

Figure 4: Summary of Revenues Streams by M-payments Strategic Option

Strategic Option	Key Characteristics and Benefit Drivers
1 Mobile Transactions as Core Business	Revenue is generated from traffic and transaction costs A value-added service with monthly fee is offered to the customer
2 Mobile Transactions as Add-On Business	In addition to revenue from traffic, the operator claims a percentage (1-5%) of transaction costs
3 No Direct Mobile Transactions Business	3a: The operator functions solely as a hosting provider for MVNOs, generating revenues from a percentage of data ARPU of the MVNO which is attributed to mobile payments 3b: The operator functions solely as a transparent bit-pipe and receives revenues through incremental data use of mobile payment users via mobile Internet banking

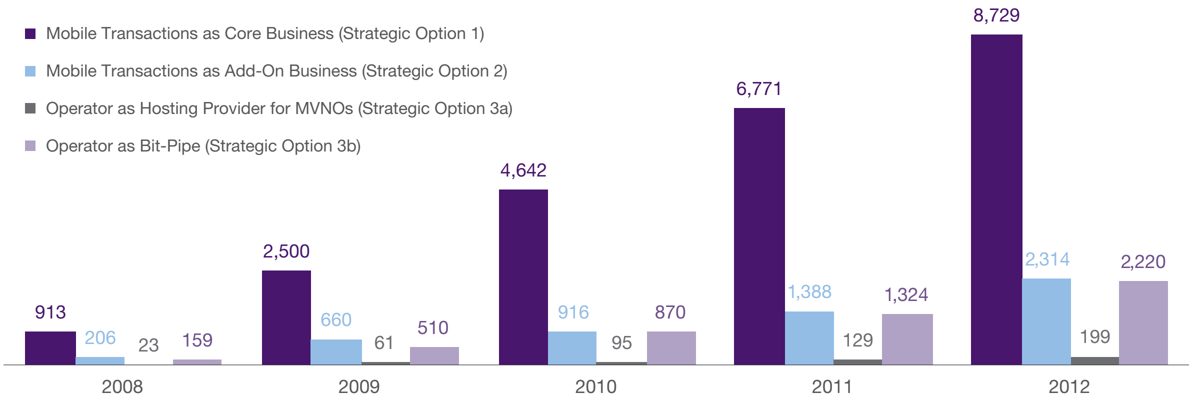
Source: Capgemini analysis.

9 EU 27 countries are: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom; Non-EU countries are: Albania, Andorra, Belarus, Bosnia-Herzegovina, Croatia, Cyprus, Gibraltar, Kosovo, Monaco, Norway, Serbia, Switzerland and Ukraine. 10 Assumptions: value-added service retail price of €5-8, with a 5% yearly price decrease; transactions costs of €0.05 per transaction; MVNO data revenue of €10 ARPU per month; (80% voice, 20% data); product revenue of €2-6 per user per month flat, depending on the strategic option. 11 Diverse income sources directly (e.g. B2B service management fee) or indirectly (e.g. advertising, retention/usage benefits) linked to offering m-payments.

In conclusion, our calculations point to a very significant European mobile payment market opportunity for telcos, starting at a value of €913 million in 2008 and growing to over €8,7 billion by 2012 for operators choosing strategic option 1 (see Figure 5), making a very positive impact on overall mobile data ARPU. A conservative assessment would indicate that this would constitute between 5-10% of the projected total mobile data revenues for the European countries modelled in the same period, and comparable to the estimated share of m-payment value within the total mobile data-related revenue projections for Japan.

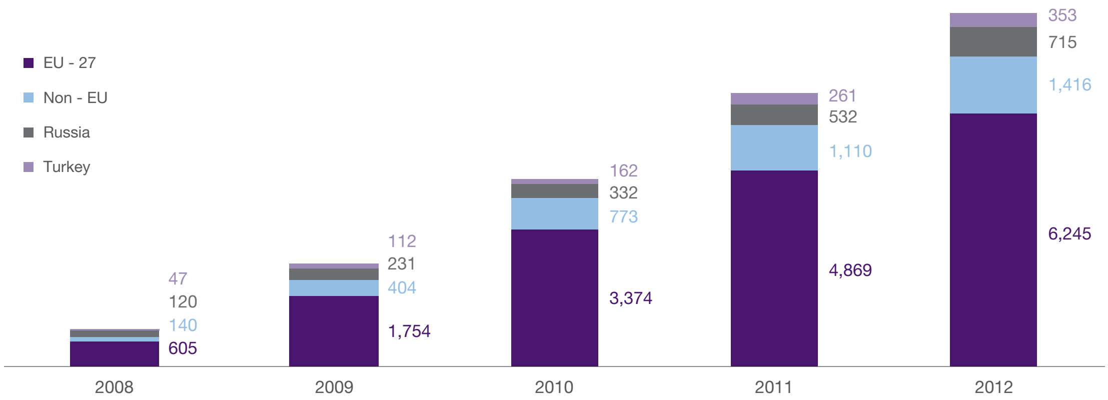
Figure 5 illustrates the financial attractiveness of each Strategic Option based on year-on-year revenue evolution. Looking at a comparison between the four European regions in Figure 6, as might be expected, the EU-27 region shows the largest m-payment opportunity. We estimate that commercial launches of m-payment services under Strategic Option 1 are likely to show results as early as 2008. One should not underestimate other European regions though. Turkey, Russia and other non-EU countries could represent almost one-third of the total m-payment market value by 2015.

Figure 5: Comparison of Business Model Options by Revenue Stream (€Million)



Source: Capgemini analysis.

Forecasted Revenues for Mobile Transaction as Core Business: Strategic Option 1 (€Million)



Source: Capgemini analysis.

7 Recommended Strategies for Mobile Operators

There is indeed an attractive, long-term, financially sound business opportunity in Europe, provided the offering is relatively broad and value-adding. Moreover, financial services players are already pioneering m-payments initiatives and could take pre-emptive competitive positions in this emerging market unless telcos are clear over how they too could take advantage of the opportunities.

Over the next three years, we believe that the market will open up rapidly. Telcos must define and claim a position now, before m-payments become mainstream. Telcos have a number of options to consider ranging from full participation — the core business — through to minimal or no involvement at all. Taking into account the many challenges of standardization, acquiring banking and payment knowledge, and managing a complicated ecosystem of suppliers and business partners, smaller players should adopt a “follower” strategy, while tier 1 telcos need to adopt a more “bullish” position.

Whichever way telcos react, it is clear from our analysis that following Asia’s lead, this is potentially a dynamic market for Europe, shedding new light on the issues of industry convergence once again. As Visa US’s CEO commented; “the convergence of payments and mobile communications is not just logical — it is inevitable.” Telcos’ unique capabilities — their networks, technology “ecosystems” and ability to package and sell services — mean they are well-positioned to claim a differentiated and major role in this exciting market, starting today.

About the Authors

Jean Diop is a vice president in Capgemini's Telecom Media & Entertainment Consulting practice in The Netherlands. He specializes in telecommunications strategy development and realization, financial business planning and appraisal, and technology network/product operations. He leads the Capgemini cross-unit business development initiatives for mobile banking & payments, working at the inter-section of telecom, banking, and IT applications. He is based in Utrecht.

Rob Deitz is a managing strategy consultant at Capgemini's Telecom, Media & Entertainment practice in Benelux. He has led a number of projects for leading European telecom companies over the past ten years. Robert specializes in program management, transformation management, MVNO, technology governance, CRM and m-commerce. He holds a PhD from Einhoven University of Technology and has been published on topics such as IT governance and management decision making. He is based in Utrecht.

Bas van der Zijden is a managing consultant from the Capgemini Telecom, Media & Entertainment practice in The Netherlands. He has worked on several projects in the mobile and fixed telecom industry and cable and media industry; in roles varying from process development lead to mobilization and communication expert. He is based in Utrecht.

About Capgemini and the Collaborative Business Experience

Capgemini, one of the world's foremost providers of consulting, technology and outsourcing services, enables its clients to transform and perform through technologies. Capgemini provides its clients with insights and capabilities that boost their freedom to achieve superior results through a unique way of working - the Collaborative Business Experience - and through a global delivery model called Rightshore®, which aims to offer the right resources in the right location at competitive cost. Present in 35 countries, Capgemini reported 2006 global revenues of EUR 7.7 billion and employs over 83,000 people worldwide.

More information about our services, offices and research is available at www.capgemini.com/tme

For more information contact:

Jean Diop
Vice President, Capgemini Netherlands
jean.diop@capgemini.com
+31 30 689 59 84

308_20080114

www.capgemini.com/tme

Australia
Level 4
50 Carrington Street
Sydney NSW 2000
Tel: +61 2 9293 4000

Belgium
Bessenveldstraat 19
B-1831 Diegem
Tel: +32 2 708 1111

China
Unit 1101-04, Azia Center
1233 Lu Jia Zui Ring Road
Shanghai 200120
Tel: +862 161 053 888

Denmark
Ørnegårdsvej 16
DK-2820 Gentofte
Tel: +45 70 11 22 00

Finland
Niittymäentie 9
02200 Espoo
Tel: +358 (9) 452 651

France
Tour Europlaza
20 ave. André Prothin
92927 La Défense Cedex
Tel: +33 (0)1 49 00 40 00

Germany
Hamborner Strasse 55
D-40472 Düsseldorf
Tel: +49 (0) 211 470 680

India
Piroshanagar, Vikhroli
SEP2 B3 Godrej Industries Complex
400 079 Mumbai
Tel: +91(22) 5555 7000

Italy
Via M. Nizzoli, 6
20147 Milano
Tel: +39 02 41493 1

Middle East
P.O. Box 502 420
Dubai
UAE
Tel: +971 50 884 77 64

Netherlands
Papendorpseweg 100
3528 BJ Utrecht
Postbus 2575
3500 GN Utrecht
Tel: +31 30 689 0000

Norway
Hoffsveien 1D,
0275 Oslo
Tel: +47 24 12 80 00

Poland
Al Jana Pawla II 12
00-124 Warsaw
Tel: +48 (22) 850 9200

Portugal
Edifício Torre de Monsanto
Lugar de Romeiras
Miraflores
1495-046 Algés
Tel: +351 21 412 22 00

Spain
Edificio Cedro
Calle Anabel Segura, 14
28100 Madrid
Tel: +34 91 675 7000

Sweden
Gustavlundsvägen 131
PO Box 825
161 24 Bromma
Tel: +46 8 5368 5000

United Kingdom
76 Wardour Street
W1F 0UU London
Tel: +44 20 7734 5700

United States
623 Fifth Avenue
33rd Floor
10022 New York
Tel: +1 212 314 8000