DYNAMIC ELEMENTS OF EMERGING MOBILE PORTAL STRATEGIES

M-COMMERCE IS ALL ABOUT PERSONALIZATION, PERMISSION AND SPECIFICATION

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ABSTRACT

M-commerce refers to monetary transactions conducted via a mobile telecommunications network using a communication, information, and payment (CIP) device such as a mobile phone or a palmtop unit. Success in mobile portal markets will depend on dynamic strategies that blend elements of personalization, permission, and specification of content. This paper presents of framework for developing effective business strategies for mobile portal that are a key to m-commerce.

Keywords: M-commerce, e-commerce, portals, Europe, USA, Japan, one-to-one marketing, permission marketing, personalization, customization, competition

I. INTRODUCTION

The year 2000 marked a turning point in the growth of mobile commerce or m-commerce, particularly in countries such as Japan (Brandt, 2000; Economist, 2000c; Hamilton, 2000; Hara, 1999; Hoffman, 2000; Kunii, 2000) and Finland together with its fellow Scandinavians and Europeans (Baker, 2000; Bottomley, 1999; Brown-Humes, 2000a; Brown-Humes, 2000b; Dumiak, 2000; Economist, 1999a; Economist, 1999b; Economist, 2000b; Financial Times, 2000a; Financial Times, 2000b; Financial Times, 2000c; Financial Times, 2000d; Financial Times, 2000e; Financial Times, 2000f; Green, 2000; Hoffman, 2000; Kahn, 2000; Kruger, 2000; Müller-Veerse, 1999; Strategis Group Europe, 2000a; Strategis Group Europe, 2000b).

M-commerce refers to monetary transactions over a mobile telecommunications network using a communication, information, and payment (CIP) device such as a mobile phone or a palmtop unit. Success in m-commerce markets will depend on dynamic strategies that blend elements of personalization, permission, and specification of content in order to become a portal for CIP devices or a supplier to or partner with this so-called m-portal. This paper presents a framework for developing effective business strategies for m-portals and its partners.

II. DISTINGUISHING M-COMMERCE FROM E-COMMERCE

There are two user-oriented core dimensions on which m-commerce has advantages over e-commerce: “mobility” and “locatability.” CIP devices offer mobility. Mobile data networks that employ geographical positioning systems offer locatibility. Taken together, these two dimensions create a range of distinctions between m-commerce and conventional e-commerce (see Table 1).

Table 1. Distinctions between M-Commerce and E-commerce

Dimension	E-Commerce	M-Commerce
Core Dimensions		
Mobility	**Limited:** User can transact from locations with Internet access.	**Ubiquitous:** User can transact from anywhere in mobile network area.
Locatability	**Client-specific:** Client computer locatable via IP address.	**User-specific:** User, device, and geographic location can be identified.
Behavioral, Strategic, and Leadership Dimensions		
Key customer concern	**Money:** Because of "free Internet" culture, e-commerce users are money conscious.	**Time:** Evolving from mobile telephony culture, m-commerce users are time conscious.
Customer location and market served	**Fixed Locations:** Customers can be served at locations where they have Internet-linked computer access.	**Ubiquitous and Global:** Customers can be served anywhere within the mobile network coverage area.
National and regional leadership	**USA-centric:** E-commerce evolved in USA.	**Europe and Asia-centric:** Scandinavia and Asian nations (Japan) lead in m-commerce.
Industry leadership	**New Players:** Newer companies such as Yahoo, AOL, Amazon.com, Dell, Cisco, and FreeMarkets have emerged as E-commerce leaders	**Transformed Old Players:** Older players such as Telcos, Mobile Device Makers, Mobile Network Operators, and Banks have chance to grab leadership

Do the differences between e-commerce and m-commerce outlined in Table 1 translate into differences in terms of business strategies for these two types of Internet-based commerce? Our argument in the rest of the paper is that m-commerce strategies will be different from e-commerce strategies in significant ways. In particular, we focus on three aspects of customer relationship where m-commerce might differ from e-commerce.

III. PERSONALIZATION, PERMISSION, AND SPECIFICATION

PERSONALIZATION

M-commerce firms can link stated individual characteristics with a user-centric database. Through relational links with mobile phone usage databases and to geographic positioning data, the scope and depth of a user-centric m-commerce database can be much greater than in the case of e-commerce. M-commerce systems, thus, provide a perfect platform for delivering one-to-one marketing.

Personalization is about creating services that tailor the end-user experience to fit needs of the individual subscriber. In m-commerce, intelligent personalization platforms can be devised to learn from both user preferences and past behavior of the user. There are, of course, challenges in terms of optimizing the interaction path, enabling users to reach the services they want with as few clicks as possible, and presenting information in a compact form scaled for the smaller CIP device. Since the CIP device that enables access also serves as the customer's wallet (Müller-Veerse, 1999), m-commerce platforms can also serve as universal payment systems. Overall, m-commerce applications have the potential to provide a much more comprehensive and intelligent level of personalization than e-commerce applications.

PERMISSION

Godin and Peppers (1999) introduced the concept of "permission marketing" to refer to a way of approaching customers intimately and personally by obtaining prior permission regarding the types of communications they would like to receive. In distinguishing older forms of marketing, which Godin calls "interruption marketing", from permission marketing, he states:

Interruption Marketers spend all of their time interrupting strangers, in an almost pitiful attempt to bolster popularity and capture attention. Permission Marketers spend as little time and money talking to strangers as they can. Instead, they move as quickly as they can to turn strangers into prospects who choose to "opt-in" to a series of communications.

To be really useful, m-commerce applications require a much more comprehensive scope and depth of permission than e-commerce applications. For instance, m-commerce users must give permission to use their geographical location to pinpoint nearest service delivery points and also give permission to charge their purchases and service usage fees to their mobile network accounts.

SPECIFICATION

In e-commerce, distinctions have emerged between the “home” and “work” roles of users. In many instances, users are free to use any type of e-commerce services from their home terminals but are barred from using personal services by the firewalls surrounding their office terminals. M-commerce challenges these distinctions. The questions arise: Is it possible to determine whether the individual is at work (on duty) or not (off duty)? Is it even preferable or necessary to maintain this distinction? If the segmenting, targeting, and positioning strategies for m-commerce are approached using the traditional distinctions between B2B and B2C marketing, this could create confusion and problems. M-commerce providers have to serve the user in multiple roles (on duty/off duty) and at varying locations (home, work, traveling, elsewhere) in a *dynamic* fashion. M-commerce portals will have to handle the user’s dynamic specification of the role-location combination s/he *prefers*. In some cases, the m-commerce provider will have to dynamically *infer* the role-location specification, depending on the context of the interaction. And in still other cases, the m-commerce *merchant would specify* the segmentation style and the m-commerce portal will have to handle this. Thus, the m-commerce portals will have to become “dynamic specification hosts.” To become an effective and efficient specification host, the m-commerce portal will have to gather a lot of valuable, owner-specific information as well as service-capability and timing information from service and content providers.

Table 2. Personalization, Permission, and Specification in M-Commerce and E-commerce

Dimension	E-Commerce	M-Commerce
	PERSONALIZATION	
User-centric database	**Slow Evolution:** Evolves from navigation and transaction behavior of the user	**Fast Evolution:** Evolves from daily communications and linking of multiple databases
Tailoring of services and content	**Somewhat Limited:** Depends on inferences about user's preferences, roles	**Possibly Extreme:** User revealed preferences, inferred roles and preferences, and locational factors can be used to tailor offerings
Learning and intelligence	**Limited:** Based on collaborative filtering, profiling	**Extensive:** Based on collaborative filtering, profiling applied to multiple databases
	PERMISSION	
Scope of permission	**Relatively Narrow:** Merchant-specific, defined in User Agreement	**Relatively Broad:** Often unspecific and location based
Depth of permission	**Relatively Shallow:** Very specific transactions and charges are permitted	**Relatively Deep:** Extensive range of transactions and payments are permitted
	SPECIFICATION	
Role demarcation	**Sharp:** Especially in firewalled work environments	**Blurred:** Difficult to tell whether user is on or off duty
Nature of role specification	**Static:** Determined by the location of the client terminal	**Dynamic:** Depends on user preferences, merchant preferences, and geographic location
Service or content specification	**Somewhat Configurable:** Depends on client terminal IP address and revealed user identity	**Evolving and Dynamic:** Depends on user preferences, merchant capabilities, location characteristics

REVISITING E-COMMERCE AND M-COMMERCE DISTINCTIONS

Based on the foregoing discussion about personalization, permission, and specification, some further distinctions between m-commerce and e-commerce can be made (see Table 2). In essence, m-commerce extends the potential of personalization, permission, and specification that e-commerce provides. Without significant extensions of these three dimensions, the very rationale of m-commerce becomes questionable. Just as a fixed telephone system with widely dispersed private and public phones cannot fully substitute a system with universal mobile telephony, similarly an e-commerce system with a wide distribution of terminals cannot fully substitute for a fully developed m-commerce system.

The distinctions between m-commerce and e-commerce create different strategic imperatives for each type of Internet-based commerce.

IV. STRATEGIC REQUIREMENTS FOR SUCCESS

The factors that distinguish m-commerce from e-commerce (Table 1), together with the three customer relationship dimensions – personalization, permission, and specification (Table 2) – constitute the emergence of a new worldview for the end user (ME) in m-commerce.

Figure 1. Integration: The KSF #1 for the M-portal

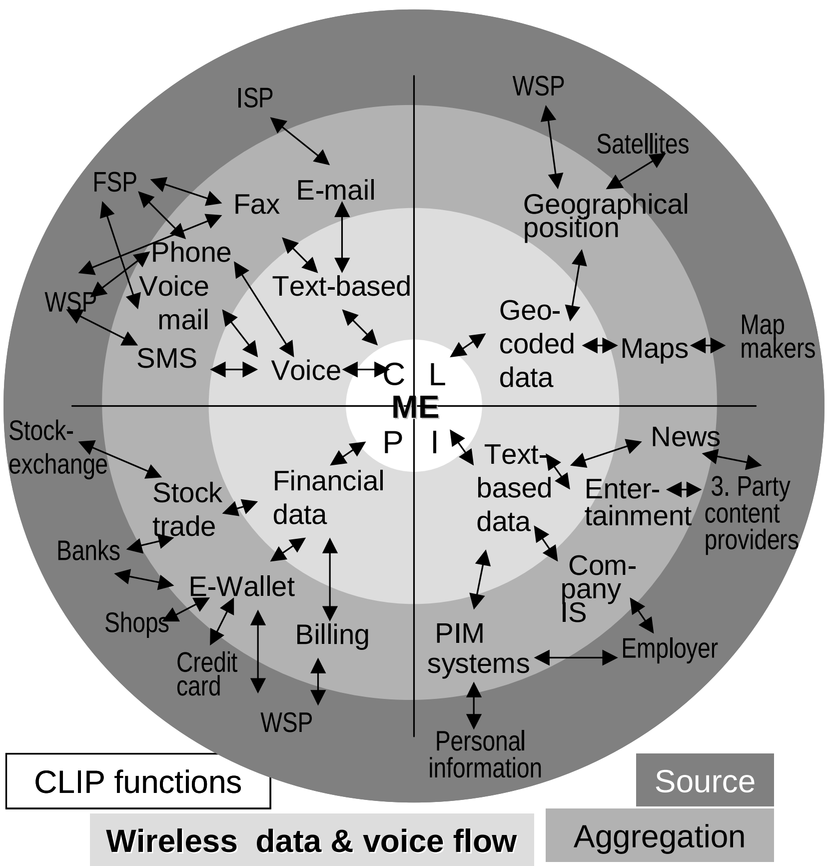

Figure 1 illustrates the opportunities for the m-portal where the arrows symbolize the needed integration. First the integration of the communication, location, information and payment functions build in the CIP device. The figure shows also that the m-portal owner has to integrate already existing offerings or build applications that integrate the possible wireless data flows, aggregations and sources.

In the initial phase of the evolution of m-commerce, for some of the larger players, the key strategic goal will be the attainment of leadership, i.e., to become an m-portal. For other firms, and for the firms that fail to become an m-portal, strategies will have to evolve in terms of becoming effective m-portal partners. While it is too early to predict what the competitive field of m-commerce will look like, we can utilize Figure 1 to delineate some of the success requirements. We can do so for three situations: the battle for leadership, the m-portal, and the m-portal partner.

THE BATTLE FOR LEADERSHIP

Figure 1 illustrates clearly that the Wireless Service Provider (WSP) have some exceptionally opportunities for being the winner of the game. Besides the WSP is in charge of the wireless data and voice flow to and from the CIP device the WSP also have access to sources for the communication, location and payment features. Additionally some WSP are also building applications for access to the company information systems. For example have the Danish WSP Sonofon teamed up with HP to create access to the company Intranet (Hewlett-Packard, 2000). The consultant firm Strategis Group Europe (2000a; 2000b) concludes in a recent report that “Wireless Portals Will Provide Operators with Key Competitive Edge in Europe” and the WSP and the device manufacturers have a core competency in creating m-portals. Durlacher, another European consultant firm, suggest that WSPs team up with traditional Internet portals because they have complementary strength as the WSP have mobile experiences, billing and location information which represent the weaknesses of the traditional portal that in return have strengths in portal, content, application and partnering experiences

(Müller-Veerse, 1999). And partnering will be a key success factor for sure, which we will come back to in a following section of this paper.

However the WSP but the Japanese (Brandt, 2000; Economist, 1999c; Economist, 2000c; Hamilton, 2000; Hara, 1999; Hoffman, 2000; Kunii, 2000) did not have a very good start in the m-portal business. There have been a lot of teething troubles with the first version of the preferred WAP protocol (Baker, Gross, Kunii, & Crockett, 2000; E-business Forum, 2000; Economist, 2000b; Financial Times, 2000g; Hara, 1999; Müller-Veerse, 1999; Nielsen, 2000a; Nielsen, 2000b; Young, 2000) as well as they bet on the previously used "walled garden" content model, which restricts subscribers' access to third party portals. That was of no success at all. (Baker, 2000; Economist, 2000a; Economist, 2000b; Nielsen, 2000b; Smith, 2000; Strategis Group Europe, 2000b; Young, 2000).

However, the winner of the battle for leadership will be the m-portal that can utilize the key success factors for m-commerce: mobility and locability that requires a high degree of integration. Even though we are in the first stage of m-commerce where locability is not fully implemented yet, we will here continue to base the discussion of effective business strategies for m-commerce on locability too.

THE M-PORTAL

The m-portal strategy will be effective when it blend elements of personalization, permission, and specification of communication, information, payment and location features in m-commerce. This is illustrated in table 3.

The m-portal will handle the permission element by giving the user rights to define the types of communication; information and payment features as well as disabling the location feature if the user want to be make oneself scarce for a while.

Based upon these general permissions the m-portal will be ably to specify content dynamically. Besides the m-portal will use the geographical position of the user to feed the other CIP specification features, the time of the day, and a virtual off/on duty “button” on the CIP device will tailor the data and voice flow to and from the CIP device. When it comes to use the CIP device as an e-wallet, merchant preferences will also play a role in the detailed specification of the CIP device functionality.

In that way it is possible to create a ultra personalized m-portal. The CIP device will handle all types of communication through a unified inbox. The information retrieval will be under the concept Me & My, meaning dedicated information when and where you need it. Payments and financial transactions of many types will go be through the CIP device too. The location feature will be used to creating dedicated maps and driving directions.

Table 3: The contents of an effective business strategy for m-portals

	Communication	Information	Payment	Location
Permis-sion	Types of communication and senders can be allowed or forbidden	Types of information and senders can be allowed or forbidden	Payment features can be enabled or disabled, individually or collectively	Location feature can be enabled or disabled
Specifica-tion	Off/on duty “button”, preferences, current time of the day and location of the user specify which messages that go through	Off/on duty “button”, preferences, current time of the day and location of the user specify types of information	Off/on duty “button”, user and merchant preferences, current time of the day and location of the user specify types of transaction	Geographical position feeds CIP specification features
Personali-zation	Dynamic unified inbox	Me & My (news, travel info, PIM, company info & entertainment)	Personal E-wallet, stock portfolio and phone bills	Dedicated maps

The m-portals essential task is to be an intermediary and mediator. In principle the m-portal can be a database permit, specify and personalize the communication, information, payment and location functions, where all the data and voice is delivered by partners.

THE M-PORTAL PARTNER

Many firms have to co-operate in order to create an m-portal. Three vital groups of partners are identified: Device manufacturers, infrastructure enablers and content providers. Table 4 shows these types of firms according to the communication, information, payment and location features in m-commerce.

Table 4: M-portal partner products and services

	Communication	Location	Information	Payment
Device manufacturers	Mobile phones, PDAs, pagers	Mobile phones, GPS receivers	Mobile phones, PDAs, pagers	Mobile phones
Infrastructure enablers	ISP, FSP, WSP	WSP, GPS Network	Content aggregators, Internet portals	WSP, Banks, Credit card firms
Content providers	WSP	Map makers	News agencies. Travel firms, entertainment firms, PIM firms, employer	Banks, exchanges, WSP, virtual and physical businesses

The mobile phone manufacturers as Nokia, Ericsson and Motorola works heavily on making the standard devices of m-commerce. The Personal Digital Assistant interested parties as PalmPilot, Psion, Handsprings and Microsoft works also on wireless strategies. These firms will drive m-commerce in the direction they think is most profitable. However, some outsiders will also be in the game, namely the pager and GPS receiver manufacturers. No standard and protocol have yet emerged as the de facto one, so it is too early to describe the general interface between the devices and the m-portal. However, it seems reasonable to have focus on the mobile phone producers while they already have developed solutions to all four primary functions of the m-portal.

When it comes to infrastructure enablers, the most important partner for the m-portal is the wireless services providers (WSP) but also Internet service providers (ISP), fixed line providers (FSP), GPS network providers, content aggregators, Internet portals, banks and credit card firms will be important partners.

At last we have maybe the most important group of partners – the content providers. The appropriated partner to handle the communication part will be the WSP; mapmakers handle the location content and a huge amount of 3. party information providers will be partners in providing information. I order to handle the payment function, banks, exchanges, WSP, virtual and physical stores will provide content. A big challenge for all will be the need for supplying geo-coded information so specification of the m-portal services can be appropriate. Another and even bigger challenge is to integrate many and often competing technologies:

- Network Technologies (GSM, HSCSD, GPRS, EDGE, 3G)
- Service Technologies (SMS, USSD, Cell Broadcast, SIM Application Toolkit, WAP, Web Clipping, MexE)
- Mobile Middleware (Mobile Portal Platforms, Mobile Commerce Platforms, Mobile Payment Platforms, Mobile Banking Platforms)
- Mobile Commerce Terminals (Operating Systems, Physical Terminals, Microbrowser, Bluetooth, Smartcards, PKI, Synchronisation)
- Mobile Location Technologies (GPS, TOA, E-OTD, COO, LFS Independent)
- Mobile Personalisation Technologies
- Content Delivery And Format (XML, WML, VXML, WWW: MMM)

When the picture still is very blurred and the m-portal partners can many and the competition hard, it is a good advice to have an extreme focus on the specific business of a certain potential m-portal partner.

V. SUMMARY AND CONCLUSIONS

The m-commerce revolution has already begun but will really accelerate when the m-portal focus on permission, specification and personalization in order to offer extended mobility and locability for the user.

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