

NEXT TO THE CUSTOMER'S HEART AND WALLET: FRAMEWORKS FOR EXPLORING THE EMERGING M-COMMERCE ARENA

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ABSTRACT

M-commerce is any communication, information and monetary related interaction via a mobile telecommunications network using a Communication, Information, and Payment (CIP) device. Emerging M-portals will integrate m-Brochure, m-Manual, and m-Store formats. M-commerce will also blur the boundaries between consumer and business-to-business marketing and transform industry structures in telecom, ISP, financial, content, retail, and other industries.

INTRODUCTION

Mobile Commerce or M-commerce is any monetary transaction conducted via a mobile telecommunications network (Müller-Veerse 1999). Already popular in Europe and Asia, examples include paying at an automatic car wash with a mobile phone or to use such a phone to buy and dispense a can from a soda machine (Bottomley 2000). M-commerce is e-commerce via the mobile network, Internet-based or not, instead of the fixed-line Internet-based network.

This paper presents frameworks to explore m-commerce-induced changes in marketing strategies and industry structure. Our core assumption (and a premise) is that in the near term m-commerce will be based on the mobile Communication, Information, and Payment (CIP) devices such as smart phones, palmtop or other units with wireless access. With the growth of m-commerce, we see three parallel, interrelated, coherent scenarios:

1. ONE-TO-REALLY-ONE MARKETING: The emergence of a more focused, tighter one-to-one marketing perspective where the marketer is forced to understand the customer as an individual and therefore to customize the products and services in greater detail.
2. BLURRING OF PERSONAL AND BUSINESS BOUNDARIES: New opportunities will emerge for marketers to enhance the products/services according to the self-reported or GPS-determined locations of customers. In such situations, m-commerce creates and at the same time blurs the distinction between consumer and business-to-business marketing. In other words, the boundary of the firm becomes fuzzy as individuals negotiate various spaces – office or factory, home, and public space – with their m-commerce enabled CIP devices.
3. TRANSFORMATION OF INDUSTRY STRUCTURES: In the longer run, the competitive structure of telecommunications, financial services, and related industries will be reconfigured to take advantage of market opportunities or to cope with competitive challenges.

We conclude by drawing some of the implications of m-commerce for marketing management and for research in the fields of marketing and e-commerce.

ONE-TO-REALLY-ONE MARKETING

The mobile CIP device is a perfect platform for delivering one-to-one marketing. Mobile firms can link stated individual characteristics with a user-centric database. Such linking can extract not only all the demographic data of the subscriber but can also build a data profile with lots of information about that user's communication patterns. Additionally, by providing a mobile portal, the network operator can get even more information on its subscribers. Users can be requested to input their preferences and information needs so as to receive personalized, and thus more valuable, information. Finally, with the use of mobile positioning technology, the network operator can identify the locations of the subscribers and thus tailor services to these locations.

Personalization is about creating services that tailor the end-user experience to fit needs of the individual subscriber. An intelligent personalization platform must be able to learn from both user preferences and past behavior of the user. The application must be personalized enough to optimize the interaction path, enabling users to reach the services they want with as few clicks as possible, and presenting information in a compact form optimized for the CIP device. Additionally it is important to emphasize that the very same CIP device that enables access and interaction also serves as the customer's wallet (Müller-Veerse 1999). Thus, m-commerce applications not only provide information and services but also enable payments. Such applications cover a broad range – from paying with the CIP device for a train ticket or a car wash to managing the product flow and inventory at an assembly line. In other words, the CIP device will make it possible for the marketer to be at the *place where* and at the *time when* the customer, either as an individual or an organizational user, needs the service.

In the following paragraphs, we examine different types of m-commerce applications. We group the applications into three categories: the brochure, the manual, and the store (Rask 1999). The “brochure” is an application that primarily provides information and evolves along a communicative trajectory. The “manual” is a CIP-rendered service and support application and evolves by increasing the level of customer support. The “store” is a CIP-based transactional application and evolves by increasing the breadth and depth of m-commerce transactions. We discuss these three archetypes along with the archetype that has come to be known as a “portal.”

Brochure

When using the m-Brochure strategy, the marketer aims to provide needed information to the mobile customer. The marketer expects the customer to retrieve the information and hopes that the customer will contact the marketer for other businesses. An illustrative example of this is AvantGo.com. The AvantGo mobile Internet service makes their Personal Digital Assistant (PDA) channels available for Web-enabled mobile phones. With AvantGo.com, customers can browse their favorite websites on their CIP devices or download over 350 content channels that have been specially optimized for the smaller screens of the CIP devices. The channels include news, stock quotes, flight schedules, movie listings, restaurant reviews, maps, and weather.

There are critics of this approach. Web Design expert Jakob Nielsen does not believe in such “brochure” applications and calls the Wireless Application Protocol (WAP) the “wrong approach to portability.” His main argument is that the small screen on the mobile phone “cannot show

any context, nor can it show menus or visualizations of alternatives.” Nielsen would rather like to see the phones have a PDA-like user interface (Nielsen 1999). Even though this skepticism regarding the screen sizes of tiny mobile phones is valid, it is important to recall that a driving force of m-commerce is likely to be the unprecedented level of personalization. Users can define the breadth and depth of information that they are likely to need when they are mobile. Also, marketers can ascertain the location of the customers and utilize the positional information to personalize the message. Thus, only the flights at the nearest airport and the weather, restaurants, and maps only for the area where a user is at the moment can be provided via the CIP device.

The first industry players we are likely to see in the m-commerce arena are companies that already provide customers with such information on the Web. These firms would be “versioning” their information content for the WAP platform and try to set low (near zero) prices to create high entry barriers for other potential entrants (Shapiro and Varian 1998). Overall, the focus of the m-commerce brochure applications will be on customers who value the convenience of short, precise, and highly customized information delivered at the right time and place.

Manual

When using the m-Manual strategy, the marketer tries to guide the customer in using the marketer's products and services. The expectation is that customers who receive precise guidance where and when they need it will experience great satisfaction with the marketer providing such guidance. A well-designed m-Manual relieves the pressure on the service and support staff and makes it possible for the marketer to be virtually “present” next to the customer 24 hours a day. The manual differs from the brochure in that the manual depends on dynamic interactive specifications from the user, where the specifications of the brochure do not need to be dynamic.

OracleMobile at www.oraclemobile.com incorporates all the elements of an m-Brochure and also provides an illustration of an effective m-Manual. For example, in partnership with UPS, Oracle offers the OracleMobile Package Tracking. This service provides users with status updates on their CIPs about the packages they have shipped and notifies them when their packages are delivered. Other m-Manual applications could include company directories, dictionaries and definitions, driving directions, product manuals, help files, and FAQs. In fact, early m-Manual applications will be those where the customers can benefit from support in “field” situations. Companies likely to pioneer in this area will be those that need to deliver 24-hour services to those customers who may not be connected to fixed-line Internet terminals when they need the services. The early focus of such m-Manual services is likely to be on blue and white-collar workers who have vehicle and airline based jobs. They will use the CIP device to be guided regardless of their location or the time of day when service is needed.

Store

In the m-Store strategy, marketers aim to persuade mobile customers to use or buy their products and services. The CIP device will then be the brochure, the store, and wallet at the same time. In this way, the market possibilities do not depend on the locations of the marketer or the customer.

E-commerce pioneer-leaders like Amazon.com have already rolled out their m-commerce “store” strategies. Table 1 shows the main FAQs on the Amazon.com Anywhere site and the nature of answers. It is evident that, in its current state, the Amazon.com m-commerce store is somewhat limited compared to the parent Amazon.com e-commerce store, and the performance is contingent on CIP and mobile service provider elements that are beyond the control of Amazon.com. For leaders in e-commerce, the transition to m-commerce would require several adjustments, compromises, and new beginnings. With advancing technology and partnering arrangements, the typical m-Store is likely to rapidly overcome most of the current limitations of Amazon.com Anywhere. Companies with m-Stores are not merely interested in just the screen but also in the wallet facilities of the CIP device. Typical applications include paying highway tolls, paying for train and airline tickets after occupying a seat, and taking the car through a car wash. Another popular application is online banking, which is up and running at several banks around the world. Some banks in Scandinavia, Belgium, UK, Germany, and even India, are making full-featured “home banking” available via WAP enabled mobile phones.

[Table 1 HERE]

An obstacle has been the security of m-commerce transactions. If the CIP device is a wallet, can someone steal it and make unauthorized purchases of products and services? The three industry heavyweights in the field of CIP devices – Ericsson, Nokia, and Motorola together with Radicchio, a 36-member consortium of technology and telecom firms across Europe, the U.S., and Japan – have agreed on an industry standard for a digital signature that will provide the authentication of users. Such authentication methods are expected to ensure the identity of users for secure m-commerce (Ridley 2000). With secure authentication, users will be able to transact with marketers with whom they do not have established relationship. This, of course, is crucial for m-commerce, which distinguishes itself from fixed version of e-commerce in terms of greater mobility and ubiquity. The new m-commerce opportunities would be open to anyone who can develop viable concepts based on the m-Brochure, m-Manual, or m-Store modes (or a combination of these). Successful concepts will be those that take advantage of the location of the users as well as m-commerce extensions of leading e-commerce offerings. With such extensions, firms will be able to serve their customers anytime, anyplace.

The initial customer focus of m-commerce services is likely to be twofold: (1) customers using their CIP device as a credit card or a payment system, and/or (2) customers obtaining specific location-based products and services depending on where they happen to be. As we discuss later, the first has the potential to transform the industry structure in the financial services and telecommunications industries while the second has the potential to radically redefine concepts of convenience and service satisfaction.

Portals

Companies capable of directing the m-commerce users to WAP sites were up and running before m-commerce enabled CIP devices appeared in the market. From a location-geographic point of view, the more important portal services are those capable of providing Web-based personal information managers (PIMs) to CIP users. Major portal companies have started “versioning” their portals to WAP. Two of the online PIMs – zkey.com and visto.com – have been

personalized in ways that enable users to get all their personal information (schedules, contacts, e-mails, and task lists) through desktop terminals as well as via mobile CIPs. Their competitors are other Web-based PIM providers such as Yahoo and Excite; the Palm-OS based offerings from players such as Palm, Handspring, and IBM; and Microsoft Windows CE and Pocket-PC based offerings from companies such as Microsoft and the Psion-led Symbian consortium; and Phone.com, the creator of a WAP mini-browser. The advent of m-commerce has added new dimensions and opened opportunities for new players in the portals competitive space.

The initial target segment for such firms are the traveling business people who need their personal updated information regardless of where they are. These customers often have a PDA, a mobile phone, and a laptop already. To reduce device proliferation, such users are likely to go for an integrated solution consisting of a CIP device and an m-commerce. Figure 1 summarizes the one-to-really-one integrated application.

[Figure 1 HERE]

The m-portal serves as the integrational factor. It is a location specific portal where the CIP owner has configured it to be specific in terms of country, city, area, and the business that the user is visiting. The CIP can automatically shift between locations. To illustrate, consider the case of Kathy, a sales engineer traveling from New York to Copenhagen. Upon arrival at Copenhagen, her CIP device automatically shifts to the Copenhagen Portal and only shows the Brochure, Manual, and Store related links relevant to Kathy and to Copenhagen. When she enters a specific shop in Copenhagen the m-portal lists goods offered in that shop based on her previous purchase history. After some personal shopping, while taking a taxi to the customer's firm, Kathy checks her CIP device for new e-mail messages. In one of the e-mails, a new purchasing officer at the client firm introduces himself and explains that he will be at the sales presentation that Kathy would make in a few minutes. She checks out the profile of the purchasing officer on the client company's WAP site, adjusts two slides of her presentation located at her own company's Intranet, and leaves the taxi, paying with the CIP device.

The m-portal is an individual specific portal tailored for both personal and professional tasks. In addition to the personalization features evident in the Copenhagen trip illustration, the m-portal is PIM-based. It can draw on all of Kathy's contact, schedule, and task information and use such information to automatically generate the content of the portal. The success of the m-portal depends on a continuous-loop personalization. Such continuous-loop personalization makes it very difficult to maintain the distinction between Kathy's private and professional lives.

BLURRING OF PERSONAL AND BUSINESS BOUNDARIES

The above section showed that personalization of information together with knowing the location of the customer is crucial for m-commerce. With growth in m-commerce, it will become increasingly difficult to maintain role distinctions between "individual consumers" and "business buyers". It is unlikely that individuals will carry two CIP devices, one for business and one for personal use. The option of having one device but maintaining two different accounts is also cumbersome: it is likely to cause confusion in situations where response time is very short and quick information acquisition and purchase decisions have to be made.

[Table 2 HERE]

At least six location-role combinations of the user can be distinguished (see Table 2):

- | | | |
|--|---|--|
| 1. User at home but on duty | 2. User at home but off duty | 3. User at the office on duty |
| 4. User at the office off duty
(doing personal tasks) | 5. User away from the home
or office but on duty | 6. User away from home or
office and off duty |

These location-roles leave the marketer with six segments (Table 2). In principle, these six can be reduced to three segments – home, office and elsewhere – or two segments – on and off duty – depending on the strategic requirements of the marketer. In practice, m-commerce makes it difficult to tease out such segments. 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? In other words, the boundary of the (customer) firm comes into question. Traditional distinctions between B2B and B2C marketing could create confusion and problems for m-commerce segmentation, targeting, and positioning strategies. To meet this boundary-blurring challenge, we suggest an approach different from that of e-commerce.

First, we have to understand that m-commerce is the first true application of the Evernet idea – the idea that one is connected and online everywhere and all the time (Friedman 1999). Secondly, the new communication system transforms time and space, the fundamental dimensions of human life. Localities become disembodied from context (Castells 1996) and localities are at the same time the business opportunity for m-commerce. Third, role shifts can occur very rapidly and that roles can get inextricably intertwined. The m-commerce user can be a private consumer one moment and a business person the next moment, or even assume both roles at the same time in the same place without the marketer registering that such changes have occurred. Fourth, people do not compartmentalize their lives. This is already evident in employees' problems with remembering which credit card is for business and which one is for personal use, or with employees using office computers for personal email or e-commerce.

M-portals will have to serve at least these six segments – possibly more if other segmentation variables are added – in a *dynamic* fashion. Each segment can demand an m-Brochure, m-Manual and/or m-Store strategy. Besides “one-to-really-one integration,” the m-portal has to handle the user's dynamic specification of the role-location combination *s/he prefers*. In some cases, the marketer will have to dynamically *infer* the role-location specification, depending on the context of the interaction. In other cases, the m-commerce *merchant would specify* the segmentation style that the m-portal should handle. In addition to being a portal and a personalization tool, the m-portal has to become a “dynamic specification host.” To become an effective and efficient specification host, the m-portal needs to gather a lot of valuable, owner-specific information. Firms with access to such valuable information will be in a position to not only serve their customers well but wield power over the very structure of industries participating in m-commerce.

TRANSFORMATION OF INDUSTRY STRUCTURES

Not every e-commerce firm, Internet portal, telecommunications service provider, or payment service provider will be able to handle the complex, dynamic segmentation and the constantly changing, interactive mix of specifications of users and merchants. In fact, we expect some major transformations in these industries to occur as m-commerce gains momentum.

When CIP device makers, mobile network operators, and m-commerce service providers all focus attention on the mobile customer as an individual with specific needs, conditions are created for transformation of industry structures. It is unlikely that consumers would want dozens of different businesses to access their individual CIP devices and to send them separate bills. Industries will be reconfigured to handle the new tasks of service and financial integration. Phone companies could become banks, banks could turn into portals, and portals may become service providers. In such environment, competitive intensity would increase because the power would lie in the hands of companies that control the networks. This is clearly evident in the runaway m-commerce success of Japanese network operator NTT DoCoMo, which knows the customers' identities and already has a billing processes in place.

Portal owners will also play a major role because of the fact that they have the prefigured specifications from the CIP owners (users) as well as from the merchants. Finally, device makers such as Nokia, Ericsson, Motorola, and Palm do not want to be just hardware providers in the new m-commerce economy. They are building partnerships to transform into full-fledged m-portals, telecommunications service providers, and even merchants.

Privacy issues have already become very complex in the e-commerce environment. With continuous locatability of the users and the seamless billing that m-commerce applications require, privacy concerns will assume new urgency in the m-commerce environment.

Just as Amazon.com changed the retail industry, the winners of personalized m-portal and m-commerce competitive battles will transform several industries by getting extremely close to the customer's heart and wallet.

IMPLICATIONS FOR MANAGEMENT AND FURTHER RESEARCH

This paper has a number of important research and managerial implications. Overall, the research imperative is to deepen the understanding of m-commerce phenomena with more robust theoretical approaches and empirical studies. Research could proceed along the three parallel, interrelated, coherent focuses outlines in this paper: 1) Empirical studies of one-to-really-one integrated applications, 2) Study of m-commerce usage patterns in different locations and 3) Studies of industry transformations. The research strategy could be to classify WAP (and other m-commerce) sites as Brochures, Manuals, Stores and Portals. Based upon the classification it is possible to understand the potential usage patterns in different role- and location-based segments. This knowledge can be used to create understanding of the possible industry transformations that will shape the future. Figure 2 illustrates such a research strategy. Besides additional managerial implications the results of such research will assist in serving the customer as a true individual.

[Figure 2 HERE]

The main managerial implication of m-commerce is the shifting competencies for being a competitive player. Firms that hope to win will have to develop the capability to be very close to the customer and at the same time be very dependent on the infrastructure power players that could potentially end up as portal owners through which all m-commerce will flow. Banks and phone companies seem well positioned for these new m-commerce intermediation roles. This means that marketing efforts will have to not only focus on the customer but also on the m-portal owners who may have to be recognized as strategic partners. Every firm except the m-portal owners will likely play the role of a sub-supplier to the m-portals. These sub-suppliers have to develop strategies for their m-commerce applications (brochure, manual and/or store) that take into account customer segments in terms of roles (off- or on-duty) and location (home, office or elsewhere). Since these customer role specifications will have to be very dynamic, strategies and operational tactics will have to seamlessly blend with each other.

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Table 1: Selected FAQs featured on the Amazon.com Anywhere Site and Types of Answers in mid-2000

<i>Frequently Asked Question</i>	<i>Type of Answer Provided</i>					
	Same as Amazon.com	Limited compared to Amazon.com	Yes or Qualified Yes	No or Not Yet	CIP Limitations mentioned	Contact Service Provider
How is a purchase from Amazon.com Anywhere protected?	x					
The PDA or Internet cell phone does not recognize my Amazon.com username and password. What should I do?	x					
If I connect to your site by entering your URL directly into my cell phone, how are my transactions secured?	x					
How are orders to international addresses (outside the U.S.) from the Amazon.com mobile phone site handled?	x					
How can I find an item that doesn't appear as a top match?		x				
How do I get more information about or purchase an item once I do a search?		x				
How does the service know where to send my purchases?		x				
How do I bid on an auction item?		x				
Can someone else use my PDA or Internet cell phone to shop at Amazon.com?			x			
Can I ship to an address other than the one associated with my 1-Click settings?				x		
When will you have a WML version?				x		
Can I call Amazon.com's Customer Service to place an order?				x		
Why do you display only the top three or five matches for a search?					x	
I received an error message and I was not able to connect to your service. What should I do?					x	x
What type of phone is required?						x
My mobile phone carrier is one of your partners, but I cannot access Amazon.com from this device. Why not?						x

Figure 1: One-to-Really-One Integrated M-Commerce Application

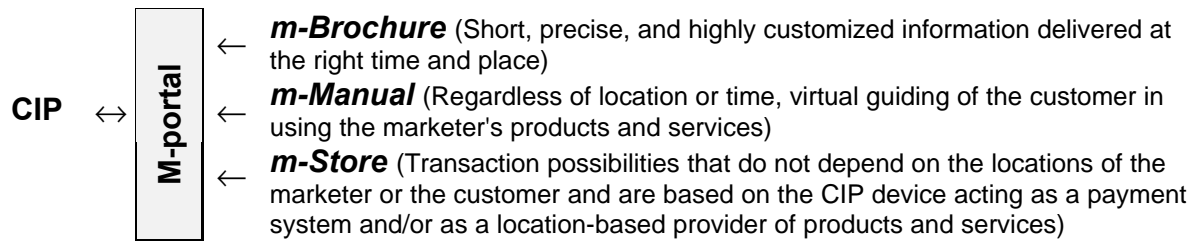


Table 2: Location and Role-based M-commerce Segmentation

		Role-based Segmentation	
		On Duty	Off Duty
Location-based Segmentation	Home	1	2
	Office	3	4
	Elsewhere	5	6

Figure 2: A Recommended M-commerce Research Strategy

