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Abstract

The popularization of wireless and portable information communication technologies has generated many studies towards adoption and use by academics and practitioners. Most studies have used as the theoretical framework theory of planned behaviour, technology acceptance model or an extended or combined version of those models like Venkatesh et al.'s UTAUT. This paper proposes the use of Sheth, Newman and Gross' (1991) theory of consumption values combined with the means-end chain model to contribute to the development of a predictive model of mobile commerce adoption and use.

Keywords

Technology adoption, mobile commerce, mobile technology, laddering technique, means-end chain model.

INTRODUCTION

Most studies focusing on the adoption of technology have used frameworks based on Roger's diffusion of innovation theory, Ajzen & Fishbein's theory of planned behaviour, Davis' technology acceptance model and more recently Venkatesh, Morris and Davis' unified theory of acceptance and use of technology (2003). This paper proposes the utilisation of Sheth, Newman and Gross' (1991) theory of consumption values combined with Gutman's (1982) means end chain model to identify what values consumers perceive in mobile commerce services and why they do so. First, the paper looks at the background and traditional theories that have been used to explain adoption and use of technology. Then it presents the theory of consumption values as well as the means-end chain model, explains the laddering technique and suggests a theoretical predictive model for mobile commerce adoption and use.

Sheth et al.'s model (1991a; 1991b) has determined five perceived values that consumers attach to goods when making their choice. Sheth et al. refer to market choice behaviour as the moment when a customer is deciding if they are going to buy/use or not the product or service. The means end chain reinforces and complements Sheth et al.'s (1991a, 1991b) model.

The advances and continuous growth in wireless and portable information and communication technologies and the continuous growth in the uptake, in particular of mobile phones (Carey 2004) are leading some academics and practitioners to believe that availability of wireless devices will fulfil the growth explosion expected from PC based e-commerce (Anckar, 2002; Anckar and D'Incau, 2002; Ropers, 2001).

GROWTH AND SIGNIFICANCE OF MOBILE COMMERCE

Technological wireless developments such as 3G mobile phones (broadband), wireless application protocol (WAP), General Packet Radio Services (GPRS) and others have enabled new ways to communicate, entertain and transact using multimedia or text via computer networks (Clarke, 2001; Ho & Kwok, 2003). Commerce using an electronic interface is witnessing an unprecedented explosion of mobility, creating the domain of mobile commerce or m-commerce (Clarke, 2001; Ho & Kwok, 2003). It has been observed that e-commerce is positioning itself to take advantage of the growth of mobile devices in an attempt to achieve the massive adoption originally expected from personal computer based e-commerce (Anckar, 2002, Anckar & D'Incau, 2002; Clarke, 2001; Ropers, 2001; Lane, 1998). Mobile commerce is part of a ubiquitous computing revolution that will have significant implications for society (Lane, 1999). "Mobile devices have been the fastest adopted consumer products of all time; in 2001 more mobile phones were shipped than automobiles and PCs" (Clarke, 2001, pp134). In fact in 200l out of the 200 million wireless devices sold in the USA, 13.1 million were personal digital

assistants (PDA) and the other 187 million were mobile phones (Strauss et al., 2003). Forecasts estimate that m-commerce worldwide will exceed $200 billion by 2004 (Levy, 2000; Rockhold, 2000). This represents a great potential for organisations to develop mobile-specific business strategies (Clarke, 2001).

The substantial investments in mobile technology in recent years highlight the significance of the sector. Sixty million US dollars were spent on new mobile networks and handsets between 2000 and 2002 (Barret, 2003). The main motivations behind large investments in this area are the saturation of the traditional mobile phone market and the ongoing growth of market competition and a resulting decrease in revenues generated through new mobile phone services subscription (Barret, 2003).

Industry analysts have high expectations of the consumers' willingness to adopt mobile commerce. However, there is still uncertainty in relation to understanding why an individual adopts electronic channels, and the intrinsic influential factors, such as consumers' attitudes and values in relation to electronic channels (Eastilick & Lotz, 1999; Amit & Zott, 2001; Han & Han, 2001; Venkatesh & Brown, 2001; Anckar, 2002). Anckar (2002, p3) pointed out that "the main reason value-adding elements in m-commerce, the consumers' actual reasons – the primary drivers for adopting m-commerce remain unclear". The importance of understanding what motivates adoption becomes even more critical for m-commerce as adoption rates are expected to rapidly increase (Anckar, 2002). Some of the reasons behind this optimistic forecast are the low cost associated with m-commerce hardware (mobile phones) and consumers' familiarity with mobile phones (Ropers, 2001; Anckar 2002).

Mobile phones or cellular phones are one of the fastest adopted technologies with 1.1 billion million mobile phones sold worldwide in the past decade (Rogers, 2003). Factors that have contributed to this adoption include the technology's ability to be used at any time in any place, simple operation and compatibility – it connects to any phone system (Rogers, 2003). Also, mobile technology is continuously being upgraded and reinvented (Anckar 2002; Rogers, 2003). Mobile phones have evolved from being a tool for businessmen always on the move to becoming part of "everyday" lifestyle, thanks to a growing stream of new services like short message service (SMS), the ability to buy a drink from a vending machine, pay for parking and access the Internet (Rogers, 2003). Too much choice creates a challenge for consumers as well to organisations. On the consumer side the wide variety of services may generate confusion. On the organisation side, it becomes critical to make informed decisions in relation to what to offer and how to market these many different services, as mistakes might cause substantial losses in market share and/or profitability.

REVIEW OF THEORETICAL FRAMEWORK'S FOR EXAMINING M-SERVICES ADOPTION AND USE

A number of theories relating to the adoption of new products/ technologies by consumers exist in the literature: Rogers' (1962; 2003) diffusion of innovation theory, Ajzen's (1991) theory of planned behaviour (TPB) and the technology adoption model (Davis et al., 1989) which derives from Ajzen'& Fishbein's (1980) theory of reasoned action (which TPB is based upon). Sheth, Newman and Gross's (1991a) theory of consumption values is also analysed, although this model hasn't been directly applied to technology adoption, its unique perspective on consumption values can provide valuable insights to better understand m-commerce adoption drivers.

Consumers' adoption of new technologies/services depends on a number of factors, for example, the type of to be offered, how comfortable people feel using the technology, how user friendly the service interface is, socio-economics, motivation (benefits), culture, demographics and psychographics, time that the customer expects to use the service and past experience (Daghfouls et al., 1999; Sultan & Henrichs, 2000). With so many variables it is difficult to develop an explanatory theory, as different theories will focus on different aspects of the adoption process.

Diffusion models have been used by researchers as the main framework for understanding adoption of consumer durable innovations over time (see Sultan and Henrichs, 2000; Mahajan et al., 1990; Feder and O'Mara, 1982; Jensen, 1982; Srivastava et al., 1985; Stoneman, 1981; Bass, 1980). As a theoretical framework, diffusion of innovation theory concentrates on how consumers learn about an innovation. It draws on the communication channels and on the fact that people from the same social system will depend on media and interpersonal communication differently (Mahajan et al., 1990).

The main driving force underlying the contributions on diffusion theory was Rogers' (1962) model of adoption of innovations and the new product growth model suggested by Bass (1969). According to Mahajan et al. (1990) Bass' theoretical model has been used for predicting innovation diffusion in several markets and has been used by companies such as Eastman Kodak, RC, IBM, Sears and AT & T (Bass, 1986 in Mahajan et al., 1990). Bass' model assumes that potential adopters of an innovation are influenced mainly by two means of communication: mass media and word of mouth (Rogers, 2003; Mahajan et al., 1990).

Diffusion of innovation theory has been used mostly to establish marketing decision variables such as advertising, as well as communication variables existing in the basic model of diffusion already (Daghfous et al., 1999).

Rogers (1962) model of adoption of innovations, focused primarily on the individual as the adopter of the new product (Rogers, 2003; Daghfous et. al., 1999). Several academics and practitioners such as Baumgarten (1975), Darden & Reynolds (1974), Green & Langeard (1975), Goldsmith and Hofacker (1991) have used his model to better understand the individual adoption process and the link between adoption behaviour and its strategic implication in new product development (Daghfouls et al, 1999). This research field seeks to identify the different individuals, and groups of adopters called the "Innovators" (Daghfouls et al, 1999). Even using Roger's different categories within the Innovator group i.e. early adopters, early majority, late majority and laggards the focus of research is still the "innovator", the consumer who learns "first hand" about the innovation, while imitator behaviour is considered to be a copy as he/she learns about the innovation through word of mouth.

It is also important to stress that innovation, in the diffusion model, is represented by consumer durables or technology products like stereo systems, television sets, refrigerators, and mobile phones (Norton & Bass, 1986). In the consumer durables sector older technologies are constantly being replaced by newer ones. There exists a body of the literature dealing with technological substitution (Norton & Bass, 1986). Within the marketing literature the majority of substitution models are based on market share. According to Norton and Bass most substitution theories know the size of their market and assume that there is demand for the newer version, while diffusion theories help marketers to forecast a potential market and so it is essentially a first purchase model.

	Theory Abstract	Strengths	Limitations	Main References
Diffusion of Innovation Theory	Concentrates on how consumers learn about an innovation. It draws on the communication channels and on the fact that people from the same social system will depend on media and interpersonal communication differently.	It has been the main framework used to study consumers' adoption of innovation over time. Empirically validated.	Focus primarily on the communication issues and product life cycle. Does not proactively help to understand option behaviour.	*Rogers (1962)* *Bass (1969)* *Rogers (2003)*
Theory of Reasoning Action	TRA states that Intention to adopt is affected directly by attitudinal components (beliefs about the outcome of the behaviour and beliefs of the consequences of the behaviour), and the subjective norm component (level of importance or desire to please significant others and/ or society).	Cognitive model. Work at the individual and organisation level.	**Studies the attitude towards adoption behaviour.** Limitation in dealing with behaviours which people don't have or don't perceive to have complete control.	*Fishbein & Ajzen, (1975)* *Ajzen & Fishbein, (1980)*
Theory of Planned Behaviour	TPB is an extension of TRA. It ads a third dimension The Perceived behaviour control component that looks at uncontrolled external circumstances.	Gives an understanding of the adoption process from the cognitive behaviour perspective.	Studies the attitude towards adoption behaviour not attitude towards the product.	*Ajzen, (1991)*
Technology Adoption Model	TAM can be described as an adaptation of TRA customised to technology acceptance. The intention to adopt is affected by two beliefs: Perceived usefulness and the perceived ease of use the new technology.	Model customised for the study of user acceptance of information systems/technology.	Same as TRA Draw upon studying attitude toward behaviour not attitude toward the product.	*Davis, (1989)* *Davis et al., (1989)*
Unified Theory of Acceptance and use of technology (UTAUT)	This theory integrates TRA,TAM,TPB, DOI model of PC utilization, motivational model and social Cognitive theory	Model aimed to enhance the understanding of user acceptance of technology	As the model integrates several theories that focus on intention this model does not concentrate on actual behavior but in intention.	*Venkatesh, Morris, Davis and Davis (2003)*
Theory of Consumption Values	The choices consumers make are based on their perceived values in relation "market choice" and that the perceived values contribute distinctively to specific choices.	Studies attitude toward the product/service/ technology. Identifies adoption drivers. Marketers can develop /promote products according to its perceived consumption values. The 5 values provide a simple and broad framework.	Has not been used towards technology adoption. Does not address influential factors that affect purchase decision involving 2 or more individuals e.g. couples or organizations.	*Sheth et al., (1991)*

Table 1: Comparison of Adoption Theories

Conceptualisation of Value and Values

The concept of values is a theme of research in a range of social science disciplines including: anthropology, economics, education, history, marketing, political science, psychology, sociology (Rokeach, 1973). Generally, the concept of value has two different connotations: Values as an individual core belief, and as a perceived direct or indirect benefit of a product/service (Rokeach, 1973).

In the marketing literature, the concept of values has been widely used to elucidate consumer behaviour including adoption of new products. Daghfous, Petrof, and Pons (1999) used the concept of "personal values", drawing from sociology and psychology, to explain adoption of new products. Daghfous et al., (1999) and Kamakura and Novak (1992) have used Rokeach's (1973, p5) definition of values: "A value is an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence". The underlying concept of Values in the "Values and Lifestyle System" (VALS theory and the "List of Values"- LOV theory) is drawn from the connotation of value as an individual core belief i.e. "Personal Values" (see Novak & MacVoy 1990; Kahle & Kennedy 1989; Kamakura & Mazzon, 1991;

Kamakura & Novak, 1992; Kahle, Beatty & Homer, 1986). The meaning of "Perceived Value" (or value) is drawn from definitions related to the "value-for-money" concept. Valerie Zeithaml's (1988) definition is one of the most widely accepted (see Woodruff, 1997, Sweeney et al., 1999; Anckar & D'Incau, 2002). She depicts value as: "The consumers' overall assessment of the utility of a product based on their perception of what is received and what is given" (Zeithaml, 1988, pp14). It is important to emphasize that the product and service qualities identified during the purchase were acknowledged in the Zeithaml (1988) definition of value but also possible losses in the long run. The concept of perceived value can be called product values as it refers to what consumers' value in terms of product characteristics/benefits. This concept has been considered an important source of competitive advantage for manufactures and retailers (Sheth, Newman & Gross, 1991a; Woodruff, 1999; Forester, 1999; Sweeney & Soutar, 2001).Sheth, Newman and Gross (1991a, 1991b) conceptualized a model to help explain how consumers make decisions in the marketplace. They based their model on the principle that the choices consumers make are based on their perceived values in relation to what the authors called "market choice" (figure one), and that the perceived value contributes distinctively to specific choices. Because their model examines the product values that attract consumers it can be a viewed as a way to understand the attitude towards the product, making this a proactive way to understand to m-commerce adoption. In their theory, Sheth et al., (1991a, p16) explain market choice behaviour as a multidimensional model. Three dimensions were identified:Consumers' choice to purchase or not purchase a product (or service).

- Consumers' choice to purchase or not purchase a product (or service)

- Consumers' choice of one type of product over the other

- Consumers' choice among brands

Sheth et al., (1991a) classify five categories of perceived value. Functional values are associated with the utility level of the product (or service) compared to its alternatives. Social values could be compared with the subjective norm dimension in the Theory of Planned Behaviour, as it is associated with willingness to please and social acceptance. Emotional values are those choices made based upon feelings and aesthetics. A common example would be choice of sports products. Epistemic values can be used to describe the early adopters in the sense that it relates to novelty or knowledge searching behaviour. Words such as "cool" and "hot" are often associated with this value. Finally, the conditional value refers to a set of circumstances that depend upon the situation (e.g. Christmas, wedding etc.). Socio-economical and physical aspects are included in this value. These five values were conceptualised based on a diversity of disciplines including social psychology, clinical psychology, sociology, economics and experimental psychology (Sheth et al., 1991a).
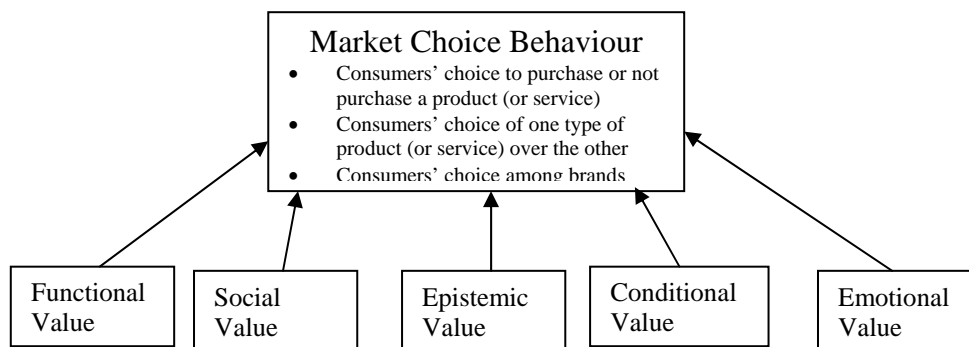

Figure 1: Sheth, Newman & Gross (1991a) Theory of Consumption Values

Although this theory has not been used to explain adoption, its unique conceptualization of product values provides a multidisciplinary approach that can contribute towards the understanding of the attitude (adoption) toward the product. The limitation of this theory to understanding adoption is that it cannot be used to understand organisational adoption, as it does not address influential factors that affect group adoption. Another limitation is that this model cannot be used to understand adoption in cases where the buyer is not the user. Nevertheless, Sheth et al.'s model, (1991a) "provides the best foundation for extending value construct as it was validated through an intensive investigation in a variety of fields in which value has been discussed" (Sweeney & Soutar, 2001, p205).

The application of Sheth et al.'s model provides an understanding of the intrinsic influential factors, i.e. values about electronic channels such as m-commerce (Eastilick & Lotz, 1999; Amit & Zott, 2001; Han & Han, 2001; Venkatesh & Brown, 2001; Anckar, 2002). The Theory of Consumption Values can identify the main value-adding elements in m-commerce or the primary drivers for adopting m-commerce. A summary of the strengths and limitations associated with the theoretical perspectives on adoption of technology are presented in table 1.

Although interpretive research is recognised as a useful strategy to investigate "why" and "how" questions (Walsham 1995; Klein and Myers 1999; Myers 1999), there has been little interpretive research done to understand m-commerce adoption. One of the reasons for this is that it may be thought that the most common theoretical frameworks used to explain adoption were validated through a positivist paradigm: Rogers' Diffusion of Innovation theory, Ajzen's Theory of Planned Behaviour (TPB) and The Technology Adoption Model (Davis et al., 1989) which derives from Ajzen & Fishbein's Theory of Reasoned Action (which TPB is based upon).

The utilization of TPB to study adoption aims to identify the psychological and social cultural factors that influence an individual adoption. Therefore, TPB studies the behaviour toward adoption. However, when applied to the study of the adoption behaviour, TPB tends to focus on Rogers' model concentrating on the innovator linking TPB with the diffusion model. As an attempt to identify a new model, Daghfous et al., (1999) presented a cross-cultural study focusing on individual personal values. In their study the authors use human values to explain "innovativeness". They argue that in the marketing literature the advantage of values is that it exceeds geographical and social-cultural limitations. Nevertheless, their study is still an attempt to identify specific drivers within the "innovators" group. Sheth, Newman and Gross's (1991a) theory of consumption model hasn't been directly applied to technology adoption, however its unique perspective on consumption values can provide valuable insights to better understand m-commerce adoption drivers.

Sheth et al (1991a, 1991b) theory is a valuable tool to help understand what values consumers perceive in mobile commerce. To extend the depth of this study, laddering technique will be used to uncover the underlying reasons why values are important to an individual (Reynolds and Gutman 1988; Leao and Mello 2001; Leao and Mello 2002).

MEANS-END CHAIN

The means end chain model concentrates on the systematic relationship between three level of values: product attributes, consequences and personal values (Gutman 1982; Reynolds and Gutman 1988; Judica and Perkins 1992; Woodruff and Gardial 1996; Leao and Mello 2001; Leao and Mello 2002). It seeks to explain how the use of product (consumption) makes possible for the consumer the realization of his/hers desired ends. The central aspect of this theory is that "…consumers choose actions that produce desired consequences and minimize undesirable consequences" (Gutman, 1982 p 61).

In Gutman's (1982) model product attributes is understood as all tangible and intangible product characteristics e.g. size, weight, color etc. Consequences were defined as the physiological or psychological results acquired directly or indirectly to the consumer from his/hers behavior (product or service use). And the value construct in this model is drawn from the concept used in psychology and sociology. Values here, relates to Rokeach construct - human/personal values. He (Rokeach, 1973) had identified two types of values: Instrumental and Terminal. Instrumental values relates to those values that act like tools in achieving end-state behaviours, such as courage, honesty, ethics, etc. Terminal values are what Gutman (1982) used in his model. They refer to "Preferred end-states of existence" (Gutman, 1982 p63) like accomplishment, happiness, satisfaction etc. Gutman's Model (1982) has two basic underlying assumptions: 1) Values are connected to consequences as long as the consequences are associates to positive or negative and 2) Consequences have a direct relationship with product attributes as long as consumers obtain the products which may cause the desired benefits.

The three levels of values are hierarchically interconnected. The lower level values are an instrument to consumer to reach their desirable ends values (higher levels) (Gutman, 1982; Judica & Perkins, 1992; Leao & Mello, 2001, 2002; Reynolds & Gutman, 1988). The central aspect of this model assumes that consumers will behave in a way to obtain the desired or positive consequences and minimize the undesirable or negative consequences (Leao & Mello, 2001, 2002). The end values as explained above are life ideal end-states or goals.
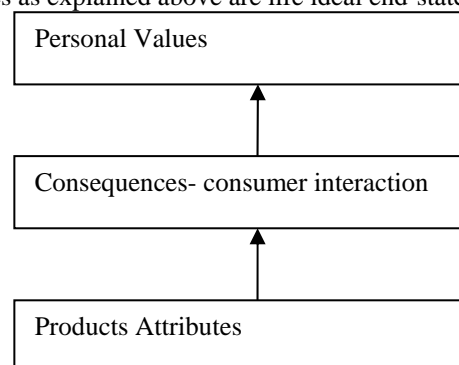

Figure 02 Means-End Chain

LADDERING TECHNIQUE

To reveal the means –end hierarchy, a technique called laddering (Gutman 1982; Reynolds and Gutman 1988; Judica and Perkins 1992; Leao and Mello 2001; Leao and Mello 2002) is utilised. The ladder or systematic relationship between the three levels of values or abstractions (attribute, consequence and value), represents the connection between the actual product and the user's cognitive process that leads to a direct and useful understanding of his/hers perceptual orientation regarding the usage of different mobile services. The laddering technique is an in depth individual interview used to understand how consumers, in this case, mobile commerce users. It translates products attributes into associations relevant to the users "self", based on the Means-End chain model. This is done through sequentially asking the respondent the reason why that attribute /consequence was important to him or her (Reynolds & Gutman, 1988). The goal of this strategy of enquire is to allow the researcher to get to users' actual root reason for using that particular mobile service (Reynolds and Gutman 1988; Gutman 1997; Mentzer, Rutner et al. 1997; Leao and Mello 2001; Urala and Lahteenmaki 2003; Wansink 2003). Because this technique can be perceived by the respondent as obvious and intrusive it is paramount that the researcher pays particular attention to the interview environment. The environment needs to be friendly at the same time that it facilitates respondents to be introspective to seek the underlaying drivers behind their perception of a given mobile service (Reynolds and Gutman 1982). It is fundamental that the interviewee perceive the interviewer as very interested at the same time as neutral - His only job is to record the information provided (Reynolds and Gutman 1982).

The first phase of the laddering method is to elicit distinctions. I.e. the user needs to make significant distinctions between mobile services in this case (Reynolds and Gutman 1982). Once established these distinctions the next step is to assure that they are bipolar and getting the user to identify each pole. (Wasink, 2003; Reynolds and Gutman 1982).The main idea is to concentrate the discussion on the individual rather than on the product or service. It is a lengthy process as the lever of articulation and willingness to answer by the respondent play a key role in the process (Wasink, 2003; Reynolds and Gutman 1988). From comparative studies done in this method an average two or three ladders are obtained from three quarter of the interviewees, and one fourth cannot go further than one ladder.

The data analysis stage is also quite particular in this methodology. First the researcher records and separately codes all the ladders, and then he/she summarizes these codes in a manner to reflect everything that respondents have mentioned(Reynolds and Gutman 1988; Judica and Perkins 1992; Leao and Mello 2001; Leao and Mello 2002). First the researcher needs to record the whole set of ladders across respondents on separated codes. Then he/she summarizes the codes in a manner to reflect all the respondents' answers. This is done by classifying all the answers into the basic A/C/V(attributes, consequences and values) levels then breaking them all down to individual summarized codes. It is critical for researcher to be careful and not to get too broad categories of meaning. As this may reach a point that it would be too difficult to replicate these meanings to different respondents. Concentrate the "meaning central of the purpose of interest not in the elements themselves" (Reynolds and Gutman, 1988 p19).

Reynolds and Gutman (1988) suggest that when master codes are ready, numbers should be assigned to each one. The next step then is to use the code numbers to score each element on each ladder to produce a matrix (implication matrix). The matrix rows are each one of the respondent's answers or A/C/V. All rows lead to a column. It is possible for respondents to have multiple ladders. If this is the case this respondent will have multiple rows. The number of elements in the longest ladder will be the number of columns in the matrix. The matrix then will be the base to establish the dominant trails or connections between the most important elements as well as providing a summary by sub group. The implication matrix can be called a direct and indirect decomposition of the chain components. From the implication matrix the next step is to rebuild the chains in the format of the hierarchical value map (HVM). The traditional approach is to "map all the relations above several cut-off levels." (Reynolds and Gutman, 1988 p20). In a sample of 50 or 60 respondents the cut-off level is between 3 to 5 relations. The results found in the HMV are valuable tools to determined users segmentation, assessment of products/services ratings and as a base for developing key strategies (Reynolds and Gutman 1988; Judica and Perkins 1992; Leao and Mello 2001; Leao and Mello 2002).

DISCUSSION

It is possible to say that means-end chain model combines consumption values with personal values. Consumption values as Sheth et. al (1991a and b) have defined and classified would fit in on the lower levels A/C of the means-end chain. For example in the products attributes level include the characteristics of the functional values are described as well as some of the conditional and emotional. The Social and Epistemic values when not presented directly as a product attribute they fit in the consequence level. The advantage of combining this two models to study mobile commerce adoption is that at the same time Sheth et al market choice behaviour is explored in relation to use or not to use each mobile service available. The means end chain model indirectly deconstruct Sheth et al five values enabling the possibility of uncovering additional values specific related to mobile

commerce adoption and use. Consequently it is possible to develop a predictive that model gives a more complete view of the mobile commerce drivers – This method seems to be very effective in determining what make m-commerce users choose particular services.

The suggested model is presented in figure 03. The upper part of the model refers to the use of life histories to identify personal values. McManus and Standing (2004a and b) have proposed the use of Sheth's theory of consumption value with life history approach to identify the underlying reasons why individuals attach the consumption values the do to different mobile commerce services. This paper discusses the bottom half of the proposed model, aiming to identify the existence of any specific mobile commerce adoption and use values
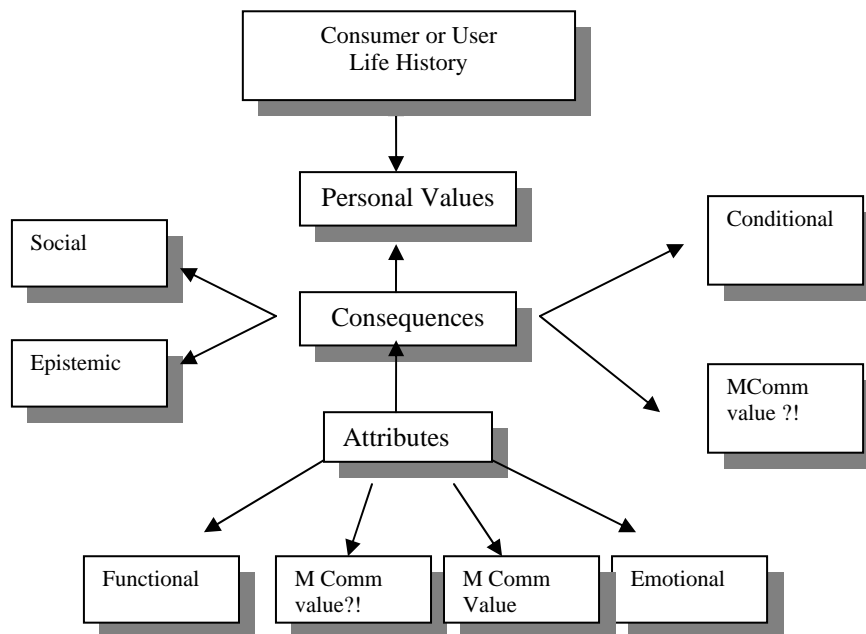
Figure 03 Proposed model

CONCLUSION

A consumer perceived values perspective has a number of implications for mobile services companies. Many organisations analyse consumer behaviour when developing a product and the associated marketing strategy. This has a number of limitations since analysing the attitude towards the behaviour does not provide the underlying reasons and rationales for consumer decision making towards the product. A consumer values perspective has a deeper explanatory ability because it examines the underlying rationale in the decision making process. This can more easily be used for predictive purposes. To measure and identify the values described in Sheth's et al theory many empirical studies have been done, however, little have been done looking deeper into consumption values. By combining the means-end chain model with consumption values it is possible to develop a more holistic understanding of values and value in relation to mobile commerce products and services. The utilisation of the means-end chain in conjunction with consumption values could eventually uncover additional consumption values that would not fit in the five types predetermined by Sheth et al. model (1991a, 1991b). The lower levels of the chain: product attributes and consequences represent the consumption values and the higher level of the chain connects them to personal values.

Product and service developers need to examine these deeper factors to come to a sophisticated understanding of their adoption related decisions. Previous theoretical explanations for technology adoption are low in terms of predictive capabilities. This paper suggests that the consumer perceived values approach has significant potential in explaining adoption decisions on an individual.

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