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A Holistic Conceptual Framework

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A Holistic Conceptual Framework Supporting Higher Consumer Values through Business-Consumer Domain Mobile Location Services

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A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Business Administration

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ABSTRACT

Location technology can be applied in many situations of daily life and is impacting many areas of business. The ability of business to deliver meaningful services to mobile users is greatly increased by knowing the location and context of the user, and the technology is reaching the point where these possibilities can be turned into practical solutions. The technology has required vastly complex efforts in standards and development issues to get to where it is today. Customers and consumers are evolving with the technological environment too and are becoming ever more demanding. However, the next phases of customer satisfaction are seen to be in need of values other than only the attributes of something that can be purchased, the need is for higher lifetime values. By means of a literature review, this research attempts to find a framework enabling the support of such values specifically through mobile location services, focusing on the business-consumer domain.

The technology is difficult to handle, business processes required for such enablement are missing, and social processes to incorporate a technology increasing in daily use, aimed at higher values, have not yet coalesced. The research attempts to fill this gap. The literature review finds that a holistic view incorporating regulation, societal and consumer inputs together with the business model concept viewed by industry and firms, is required to produce the conceptual framework. Mobile related technological change causes fundamental economic impacts on the market, consumers and individual behaviour, the addition of location technologies could cause paradigmatic change to the present system of economic and social activity. The system continues to evolve also providing for the evolutionary needs of individuals.

DECLARATION

I, Kovilyn Padayachee, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Kovilyn Padayachee

Signed at Madrid, Spain.

On the 28th day of July 2008

DEDICATION

To,

My mother, my father, Swamiji & Gurudev.

For you dad, all the corporate director and so much more,

I am sorry for not having done all that I should have, please excuse me.

To my family in South Africa, Maria-José, Lucrezia Ananda and the future.

ACKNOWLEDGEMENTS

I thank my sister Varini for all her help with the printing, Jennifer Grant for the editing, and Dominik Heil even for only accepting to supervise this work.

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CHAPTER 1: INTRODUCTION

Technological changes in the last decade far outweigh the cumulative advances of the previous century. Morgan (2003) observes that technology-related change is occurring more frequently now than in the past, and emphasises the role of Information and Communication Technologies (ICT). Studies (for example, Doyle and Bridgewater 1998; Vervest and Dunn 2000, and Carneiro 2006) show the positive effects of technology and innovation on business, Callon (1996) demonstrates that computing networks and telecommunications are interrelated and reinforce one another, and that one of the big advances made was Mobile Cellular Networks. Content is also a major part of the value delivered, however, these all form the basic infrastructure to provide for higher value, needs and services of individuals.

Mobile technologies and Ubiquitous Computing are present everywhere, are adding other dimensions of awareness to business and are very much part of daily activity (Bergeron et al. 2005 and Carneiro, 2006). Awareness of location is one such dimension and refers to the ability to pinpoint a person's physical location. Consumers have ever higher expectations and with new technologies such as these become even more demanding. By knowing their customers' locations, businesses will have access to more information about them and should potentially be able to better satisfy their customers' needs. However, there are risks and challenges to be faced, and in addition to the technical hurdles, understanding of customer experience will be important for success. Management issues are also complex but, if these challenges can be overcome, extremely promising results are possible. More importantly though fundamental consumer needs could be delivered.

1.1 Purpose of the study

The research describes the relevant aspects affecting the industry of Mobile Location Services. The purpose is to describe the higher values that can be

facilitated via progressing technologies, and to propose business structures and processes supportive of higher values.

Greenfield (2006:2) posed the following important questions: “How [do we] deliver Ubiquitous Computing while forestalling the pitfalls already present? How can we as users and consumers hope to influence something already in the process of unfolding?” This study asks similar questions regarding Mobile Location Technology and attempts to provide a solution here.

1.2 Context of the study

Technological developments are advancing in the fields of computer science and electronics, material science and computer network technologies creating the world of Ubiquitous Computing, and other process technologies also cause advancements. The advancements in Mobile Location Technology have been found to instigate more change than is usual with the introduction of a new technology and Mobile Location Technology is likely to impact a variety of domains which are classified in this study as technological, business and consumer. The impact of Mobile Location Technology on these domains could be disruptive and influence other areas of activity, and even the way people interact socially. The technological, business and consumer domains are individually examined, the context and trends of each are introduced and further aspects explored in the research are discussed. Areas affected in each domain are as follows.

The approach of this study is fundamentally based on the perspective of the motivational humanistic needs as described by Maslow (1998). From the higher to lower needs these are Self-actualisation, Esteem, Social Acceptance, Safety and Basic needs.

1.2.1 *Technological Trends*

Technology in general is changing the ways in which business is carried out. In all aspects of business, these changes are continuous and cumulative as technological advances improve on previous advances. More importantly

though, is that the rate of change is actually accelerating and may be a cause for alarm since adjustment could be difficult for those who will be impacted by the change. After implementation into an organisation's internal structure and processes, the changes make already improved methods more efficient. With respect to efficiency, MLT affects most aspects of the organisation (Bergeron et al. 2005) and helps make the organisation more effective in its pursuit of its objectives, even if these are only measured in purely financial terms. The importance of the supply and distribution chain of many industries is being affected. In the motoring industry for example, it is widely recognized that Toyota made some of the most innovative changes ever seen in the industry by creating and implementing the Just-In-Time concept in its supply chain process.

1.2.2 *Consumer Trends*

City dwellers' identities become fragmented when they become part of the anonymous masses traversing the sidewalks in a big modern city and lose their status as individuals. Urban living may be the contemporary norm, but it is far from natural. The Industrial Revolution has occurred over a 200-year period, which is scant time for individuals to adapt to the changes in behaviour and habitat it has created. Humans have the need to function effectively in their habitats and the tight constraints on physical space in the urban environment produce a desire for personal space. Identity becomes meaningful within a circle of friends and relationships and close relationships to friends and family become more important, as does the habit of frequenting the same restaurants and clubs, as much for being socially recognized as for enjoyment. Work and leisure-time activities dictate who or what individuals identify themselves as. Hamel (2000) argues that the preoccupation with work and leisure activities can lead to individual isolation, because people tend to focus their attention on the tools and gadgets they use. The focus on work and 'gadgets' creates a consumer that is increasingly more sensitive to their gadgets and the different ways in which they can be utilized. Heidegger in (Biemel and Saner, 1990) also refers to individual isolation which is imposed from the outside. The problems with identity begins here as there is no reference system, the individual finds themselves alone, isolated in the technology space.

1.2.3 *Business Trends*

In the past, businesses became aware of a customer only when they entered a shop door. With the advent of the Internet it is now possible to have a fairly complete profile of the user and their online behaviour and possess a better awareness of their needs. The buying behaviour of customers is of interest since this drives business. Knowing the location of a person implies that they can be located within a physical area and this is of interest when the customer is in the proximity of businesses. This Mobile Location information has added to the awareness information of users, and today with advances in sensing methods, it is becoming possible to sense the mobile user with high levels of accuracy. The idea behind Location Based Services (LBS) is to make offerings to these mobile users as business sees high revenue growth in this area.

1.2.4 *Context Conclusion*

Mobile Location Technology has great potential for improving organisational efficiency and, potentially, human cognitive abilities, but is faced with a number of challenges that may result in its failure. Firstly, although advances have been made in the technical designs, the actual technology is currently in its developmental stages, at least outside of Japan and South Korea. Secondly, users are particularly sensitive to the implications of these technologies in terms of privacy, trust and security violation issues. Finally, Mobile Location Technology presents a new way of approaching business and its successful application will require it to be implemented simultaneously across a wide range of domains, which will necessitate synchronicity among the many actors in this field.

This discussion has emphasized the importance of the treatment of the customer and has shown that business has to recognize the issues that customers are most sensitive to. The ability to do so may bring about the best user responses and with this, profits. Failing to do so may cause people to reject any purchase offers and much organisational effort and marketing

expenditure will go to waste. The ‘first impression’ reputation of a whole technology is probably at risk, and business needs to take note. Kotler (2002) confirms the changed and more demanding consumer. In Mobile Location Awareness it is extremely important to pay special attention to the approach of this changed customer in order to individualise the products, services and customer care.

Another important perspective of the individual and the consumer that this study emphasizes is the inherent tendency towards and the need for ‘higher consumer values’.

Higher Consumer values: the values of MLT utilisation that exceed the normal values of usability, ease-of-use, or satisfaction. Higher values refer to those individual values of contentment and enjoyment, emotional values, personal satisfaction, self-respect and social values which incorporate a view towards the wellbeing of a collective in society. These values are understood to be the ‘higher values’ referred to by Alfred Marshall (Haines, 1990), regarding higher social values in economics.

Customers are recognized as becoming progressively more demanding (McGee 2006, and Maoz et al. 2008), and here it is suggested that these demands increasingly approximate the ‘higher-level needs’ described in Maslow’s ‘Hierarchy of Needs’ (Maslow, 1998), thereby exceeding the now conventional expectations of reasonable price and good service. Thus, this study takes a holistic perspective of the delivery of value to consumers.

This is a conceptual study of a future business environment made possible by Mobile Location Technology.

1.3 Problem statement

1.3.1 *Main problem*

The purpose of the research is:

To conceptualise a holistic framework for achieving higher consumer values through the adoption of Mobile Location Services in the Business-Consumer domain and to describe any organisational implications.

1.3.2 *Sub-problems*

The first sub-problem is as follows:

1) Suggest the structures needed for establishing a framework for the Mobile Location Services Industry that will achieve these values.

The second sub-problem is as follows:

2) Indicate any organisational implications to be considered.

1.4 Significance of the study

Many assume that technological advancement in general is virtuous and occurs for the benefit of society however, with new technologies like mobile communications this cannot be taken for granted. In the business-consumer (B-C or B2C) domain, there is uncertainty as to how to deliver value to the consumer and society as a whole.

There is little research that addresses this topic and the following statements are illustrative of this dilemma. Leem et al. (2004:78) state that, “Although there have been a lot of studies on mobile business, it is hard to find ones in which an integrated perspective of mobile business based on both customers’ and companies’ needs is suggested.”

Methlie and Pederson (2007:70) also call for more research on the subject. “More knowledge is … required on how Business Model choices affect service

attributes and ultimately, service adoption." Ngai and Gunasakaran (2007:3) similarly advocate further research in the related area of mobile commerce, when they state that "The topic is still under development and offers potential opportunities for further research and applications."

This research was implemented using a perspective that takes into account more than the Mobile Industry. It takes into account various actors and brings together disparate fields by looking at the way MLT impacts on Regulation, Legislation, Societal Groups, Industry Consortia policy, Standards bodies, and Consumer Interest groups.

The intention of this research is with a view towards an overall integration of processes and structures necessary to achieve the business enablement of higher values through the adoption of Mobile Location Services.

Questions are asked of the real impact of new technologies and a new perspective is offered with regards to the wider issue of the role of business entities and business activity in the responsible delivery of value to society.

An attempt is made to fill the gap that exists in the literature regarding the business knowledge of Mobile Technology and describe a new industry for the delivery of consumer services via Mobile Location Technology. The study explores the important factors affecting business and consumers and considers how Mobile Location Technology can be used by business.

The contribution this research makes is to business and, more specifically, to firms that are susceptible to the effects of Mobile Location Technology. The research will also benefit the services industry in general. It provides for the flexible use of the many related concepts and the possibility of evaluating the options for business in this field.

1.5 Delimitations of the study

This research specifically focuses on:

- trends in the technology, business and consumer domains,

- activity in the Business-to-Consumer Domain,
- and particularly, the higher value needs of MLT users and the ability of business to support these services.

The holistic premise on which this research is based requires only those aspects of the abovementioned domains that are concerned with the tendency towards higher level consumer needs and values, both from the perspective of consumers and businesses that need to meet these needs and values. Given the proliferation of research that focuses on the fields of technology, business and consumers, a decision was made to review only the research that focuses exclusively on the aspects outlined above.

This research evaluates the different areas impacted by the technology, since there is a need to justify the organisational implications it may have, but the focus precludes an examination of the multiple areas to which MLT use is applicable.

The research excludes the following fields despite the fact that MLT could be usefully applied to them:

- business operational aspects, and the various consumer theory models,
- applicability of MLT in sales-force automation or co-ordination,
- supply-chain, logistics and routing issues,
- revenue models, market segmentation and market projections, etc.

The research does not consider the financial value of assets to be of higher financial value than that of other assets, and compare values in that sense.

1.6 Definition of terms

The following terms are specific to this field and are to be understood according to the meanings outlined below. All other terms are used semantically:

Applications: programmes that run on mobile devices.

Services: offerings network operators can charge for.

Mobility: in the context of this research mobility refers to “Enterprise Mobility”. It does not refer to the mobility or movement of people from one geographical area to another or between countries or economic areas, especially as in the case of mobility of workers.

Mobile Technology and *Internet Access*: refers to being connected via personal devices that can move freely with the user.

Location Technology: technology that locates the position of a device with respect to its surroundings, and therefore locates the user wherever they may be situated.

Mobile Location: the possibility of being connected to information while simultaneously having physical information relevant to place and surroundings.

Mobile Location Awareness: the ability of the infrastructure to identify the location of a personal device. In the pervasive computing context this could also mean devices being aware of the physical environment around them.

Context: the situation in which the consumer is found during an activity, together with Location information.

Context Awareness: the property whereby information systems may know the context of the user of a personal device. In the fixed Internet sense this would be the equivalent of a user profile, with knowledge of preferences and navigation patterns.

Identity: the perception of self and not the technical usage of the term for the management of personal identity information.

Cognitive: the human ability to understand, (in this case the physical environment) and not the technical usage whereby information systems gain some level of intelligence.

Holistic: the broad application of principles to systems as a whole integrating multiple disparate fields. It implies, not a narrow view which focuses exclusively on financial measures, but a broad view that encompasses social values and a consideration for complimentary elements of the value network in the delivery of services to consumers.

Higher values: the values of MLT utilisation that are more than the normal values of usability, ease-of-use, or satisfaction. Higher values refer to the tendency towards those individual values of fun and pleasure, emotional values, personal satisfaction, self-respect and social values which incorporate a view towards the wellbeing of a collective in society. These values are understood to be those alluded to by Adam Smith (cf. Young, 1997 and Alvey, 1998) regarding higher social values in economics, and which are the “higher values” referred to by Alfred Marshall (cf. Haines, 1990:17, from abstract), and aligned with the Hierarchy of Needs conceptualized by Maslow (Maslow, 1998 and, Whittington and Evans, 2005). The term ‘*Higher Consumer values’* is used to refer to these values made manifest by consumers and noticeable in consumer behaviour.

1.7 Assumptions

This research assumes that the technology will eventually reach an acceptable level of quality for consumers, since this is not yet a given. There may be interdependencies between business and the technology. Quality achieved may depend on the ways in which business implements this technology.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

Today time and space are no longer obstacles for a person who has access to the Internet and is willing to buy. While the compression of space and time is of great benefit to the Internet consumer, additional benefits are, quite justifiably, demanded. McGee (2006:6) notes that “In every developed economy, consumer spending far outpaces government and investment spending” and while Business is the real beneficiary of this spending, it is a benefit gained through the efforts of the consumer rather than Business. The same is true for Mobile Location Technology where it is apparent that Business has not yet taken full advantage of the possibilities that MLT provides for taking products or services to the consumer. While this could previously have been ascribed to a lack of information, at the present time this ascription is no longer valid as MLT makes consumer needs, location, profile and context accessible.

With regards to time, the majority of businesses are open for trading, almost anywhere in the world. This is true at least for basic purchases and especially for emergency purchases from e.g. pharmacies and other emergency medical services. Note that it is no longer necessary to qualify, the opening times of business or the time of day, when referring to the always-on Internet. With regards to place or user location, businesses are accessible to anybody connected by mobile. Internet commerce can get anything to anybody, anywhere in the world. The item is usually received via courier or postal services. A customer has searched for and found what he is looking for, has made the decision to purchase, and has then gone through the motions of entering credit card and postal information to ensure delivery of his purchase.

The speed at which the world and business operates shifts up a gear each time a significant technological change comes about. Today business operates on what McKenna (1999) refers to as ‘Internet Time’. He defines Internet Time as the almost instantaneous occurrence of communication and activity. Thus, the

time between a request from a customer and a response by a supplier is almost instantaneous, a condition that has come to be demanded by consumers.

The functions of business could soon be everywhere and available at all times (Watson et al. 2002). It could even be present in the physical vicinity of the prospective customer. With advances in nanotechnology for medical monitoring, maintenance and treatment of non-life-threatening procedures, a company's operations may even be situated inside a person's body. It is clear that there is a need for the legal system to clearly demarcate responsibilities and accountability related to this technology. This gives an idea of the scale of the issue at hand and also justifies a holistic stance on the topic.

In reference to the Internet, Cusumano and Yoffie (1998) state that there aren't many occasions in history that create such great change in the world. The Internet has resulted in a conceptual change in the way things are done, in terms of faster communications and general business efficiency.

The industry of the Mobile Location Services, is ideally situated to ensure that the consumer's needs will be met, by the nearest available business enterprise that can offer him what he wants, *when he wants it*, *and where he wants it.*

Although there may be a significant understanding of and large scale advances in Mobile Location Technology within the scientific communities, business does not yet know how to handle the users of Mobile Location Technology nor does it yet have the structures or processes in place to present this sensitive technology to society in an appropriate way.

This is the main reason for this research. It proposes a structure that addresses the needs of consumers and allows for the delivery of the high quality services that the technology promises. Moreover, the values that can be delivered are of a different category than those currently aspired to. These values are of the higher type of fundamental human needs, aspired to by all, described by the humanistic psychologist Maslow (see Whittington and Evans, 2005 and Freestone and McGoldrick, 2007).

2.2. Definition of topic and background discussion

Mobile and personalised technologies offer a higher degree of information about users than is available with fixed communications technologies. In analysing technological market failures, like that of the dot.com bust, Javalgi et al. (2004) attribute part of the problem to poor business models, lack of strategy, security issues, and the lack of infrastructure. Stewart and Pavlou (2002:379) state that such technology market failures "may also be attributed to lack of relevant measures for capturing interactive marketing communication effectiveness… however, the identification of just another, potentially more relevant, set of specific measures is unlikely to be sufficient for capturing the impact of a potentially interactive medium, such as the Internet, unless such an attempt is guided by an overarching conceptual framework that integrates the social and economic structure, the interactive nature of the new media, and the dynamic role of the relevant actors."

Mobile Location Technology is one such new interactive medium, and it does not only capture such measures but requires highly precise measures to possess even a basic level of functionality. Possessing wide ranging information of this type enables the technology to be used across the different fields that may benefit from the information use. It is thus argued that, a holistic view is required to sufficiently capture Mobile Location Technology's wide ranging impact on business, society, users and market activity. This technology like the Internet before it could have a disruptive effect and the potential to cause economic upheavals which would be worthwhile avoiding if at all possible. The field of economics, which originally began as the discipline of moral philosophy, is inclusive of a moral, ethical and values aspect although this is not emphasised in modern economics. It is argued that higher values are required to provide the field better socio-economic balance and coherence as a system. For this a broad perspective on higher values needs to be incorporated into deliberations.

With this in mind, an overview of the literature of various areas of relevant thought is provided, starting with the advent of this technology, then moving on

to consumers, societal groups and policy, and finally, focusing on business aspects.

The Technological developments of MLT

The ability to accurately position an object began in the military with the GPS (Global Positioning System) funded by the Department of Defence of the United States of America. This system is highly accurate and can position an object to within a meter anywhere on earth. Military applications have always had greater accuracy than commercial applications. Part of the system has been used for commercial purposes for many years. Technical issues of Location are, among others, accuracy, performance and quality of service. Accuracy is very important for certain services like ‘Child Locator’, asset tracking and emergency services, while not as important for others like, for example, friend-finder services. System performance and quality of service are clearly prerequisites for emergency services.

The European community planned to have Galileo, a system of 27 low earth-orbiting satellites compatible with GPS, in place by 2008 but this schedule has been shifted to 2014 because of technical difficulties and a competing Chinese system, which will provide free data, scheduled to be online in 2008. Galileo is to be used exclusively for commercial purposes and it is predicted that it will have a major impact on the business environment. The impact on international competition in this area becomes important since use of the Chinese system is to be available at no cost. The impact will be on business and consumers as the technology arrives. The implication for the strategic change of organisations is that it will need to happen sooner than was probably being planned for by management.

Silicon prices are falling and devices are getting more advanced. Devices are being offered with a variety of applications that, for example, show maps and give driving directions. There are other commercial uses of the technology, like vehicle tracking for fleet management and security. Businesses are offering LBS, and different services and applications are being developed including

Indoor Location, where the location of devices is obtained indoors without the aid of satellite signals.

The most important catalyst for interest in this technology is the regulations implemented by the US and Europe requiring the use of positioning for all emergency services calls. E911 in the US and E112 calls in the EU are required to provide position/location details for all emergency calls. These regulations provided telecommunications companies with targets to conform to regarding the readiness of the technology. Location Aware technologies impact many diverse systems and the ramifications have to be taken into account. These systems include technological, legal, medical, and police, and law enforcement systems and depend on local laws and governing bodies.

The perceived trust in the service or service provider becomes the most important factor. There are many technical manifestations of systems to protect Location privacy such as those based on anonymity (Beresford, 2003) and privacy protection for LBS systems (Fritsch, 2007). There is interesting research being carried out in Spatial and Temporal Reasoning. Renz and Guesgen (2004:183) state that “Although there is a large body of methods and techniques to attack problems involving space and time… there exists a lack in understanding the foundations of all these works which is the reason why the field has not found as much enthusiasm amongst the information technology practitioners as it should have had.” Could this be because of the difficulty people, who would probably prefer to see things done in the physical world, have in relating to such theoretical abstractions? Smith et al. (2004:23) hold this view with regards to mobile devices that “combine positioning technology, wireless technology and spatial analysis methods applied to detailed geographical, time based data to offer services in support of time critical, spatial, mobile decision making.” They suggest the need to address the successful delivery of services that “extend beyond issues of sophisticated network algorithms. Specifically, careful attention needs to be given to (1) people and user environments (2) access to networks (3) policy, privacy and liability (4) standards and interoperability and (5) data quality” (ibid). These are all conditions necessary for the successful application of Location Technology.

There is also progress as well as interesting applications in the field of Augmented Reality where Location plays an important role, and treats concepts similar to the virtual experience that could come from Location services (see Hollërer and Feiner, 2004). Context is an important issue throughout Location Services.

Context is a more central issue to Location Services at the time of use. Each Location offer would necessarily take into account the context of client requests or business offers before making 'contact'. There are many context-sensitive issues that need to be taken into account before an offer is made. Context refers to the situation from which a request is made by a user, or the situation in which the user is in when being made the offer. For example, leaving home to go to work on a week-day indicates a very different Location context to one of leaving home to go on holiday. Context Aware systems in a mobile environment are reviewed by Anagnostopoulos et al. (2007) who highlight the complexities related to context processing and architectures for different services. Clark and Lapkin (2008) assess the impact of MLT on enterprise, where they expect it to be widely offered by 2013, and delineate five general patterns that internal IT organisations will make use of: structured processes, collaboration, personal communications, personal commerce, and time management - patterns that are all closely related to the findings presented in this work.

Technology predictions in general can be assessed with a fair amount of latitude, looking at 5 year predictions from 2003, it is clear that the scenarios presented by Keller and Tönjes (2003) were far more advanced than has been achieved in terms of the deployed technologies currently available in the year 2008.

Consumer concerns in this technology space

Privacy entails protection from intrusions like being harassed by unsolicited messages and is dependent on the context in which the person situated - something that may be considered an intrusion in one context may not necessarily be viewed as such in another. Something as intangible and subtle as a real-time communication with knowledge of the users' Location may be

considered as intrusive and a violation of privacy, particularly when such an intrusion is not related to the user's context. In a study of the public's privacy and security concerns, Price et al. (2005) compare the different levels of protection afforded by regulation. They provide a trade-off for users who can choose the level of privacy they want to give up in exchange for ubiquitous computing services. They conclude that regulation can have both positive and negative influences on the privacy issues of individuals and society generally.

Casal (2003) similarly maintains that the main concerns for users of LBS are those of privacy and security. Generally, these concerns develop into Privacy, Data Security, Confidentiality, Information Integrity, System Security and Trust. Trust in the system as a whole is the aim of these many efforts to promote the use of Mobile Location Technology. It is predicted that the concerns of society and consumers will be sufficiently addressed so as to engender suitable levels of confidence in the companies concerned and the services offered (Levine, 2003). Greenfield (2006:2) goes as far as to say that "Privacy as we know it today will be a thing of the past".

There are also concerns about the 'big brother' effect, where individuals' basic privacy rights are infringed on by governments in the interest of national security. The legal issues regarding the general aspects of privacy are yet to be clarified. Such infringements will almost certainly not become public knowledge even if they are implemented. In any event there is little that can be done about this issue by consumers. Bindé (2005) shows how the laws in the US have been amended to provide certain law enforcing agencies with access to tracking information. There is a Social Positioning Method (SPM) as proposed by Ahas and Mark (2005), where social behaviour is analysed by tracking mobile phone locations. Research has been somewhat impeded by concerns over individual freedom and privacy, but the authors assert that the use of SPM will be "very wide-spread in the future and will fundamentally change public life and administration".

An organization that wishes to offer its customers a Location Based service has to carefully consider the way in which it goes about positioning itself in the psyche and 'personal space' of each individual consumer. The high sensitivity

of customers requires responsible marketing and not just to take advantage of ‘soft’ psychological moments to close a sale, when consumers are asked to make quick decisions with little access to information. Foxall and Goldsmith (1994) show the situational influence where consumption is higher when there is real need and the more committed we are to goals the more important they become to us, anything else amounts to a constant distraction from the flow of daily activity. Consumers place higher value on what they perceive as necessary or noticeable as opposed to what marketing strategies attempt to push onto them, especially the smaller media interface of a device. Recall is much higher for pull rather than push marketing. The customer is burdened by too many new devices and gadgets that add a level of confusion into their lives, and it is amidst the clutter of these devices and many little things to do, that their daily habits are altered. These behavioural changes are largely imperceptible over the passage of time since we are so much part of the changing environment that only conscious reflection makes us aware of the changes.

This current of technological change is taking us into a realm of a changing human consciousness with new methods of interaction and commerce (Watson et al. 2002). Today the wants and needs of the public can be generally inferred from what’s on offer by the mega-advertising companies, but these have more push from advertising than pull from consumers. Technology is taking products and services closer to the individual, both in terms of space and time. Technology satisfies these needs more efficiently and new levels of expectation are created. Location in particular is altering the entire experience and business must prepare for it. Marketing in the Location Space treats of this. Success is by no means an easy task: society is evolving, the consumer is more intimately connected with the company in question (Prahalad, 2004) and if business fails to acknowledge these changes it may not benefit fully nor fulfil its leadership role with respect to these technologies. Doyle and others in (Doyle and Bridgewater, 1998) and (Hooley et al. 1998; Hamel 2000; Vervest and Dunn 2000, and Kotler, 2002), state in stronger terms that businesses that do not recognise the changes instigated by Location technologies, will not be able to compete with other businesses that do take into account these factors.

Theoretical consumption models such as the theory of reasoned action and the theory of planned behaviour (Ajzen, 1991) predict rather accurately the effect perception, attitudes and beliefs have on customer behaviour. For mobile services, empirical studies attempting to predict adoption, usage and acceptance of mobile users were reviewed. Lim (2006) explores the development of customer loyalty through the determinants of satisfaction and loyalty intention. The findings indicate that economic value and emotional value lead to customer satisfaction and are important components of Mobile Loyalty (M-Loyalty). Treacy (2000) shows that there are three ways to become a market leader: product leadership; operational excellence and customer intimacy; of which customer intimacy is gaining in strength. Venkatesh et al. (2003) shows that Ease-of-Use and Personalisation are what users seek; Rao and Troshani (2004) show that acceptance of mobile technology is manifested by behavioural intention and attitude which in turn are influenced, amongst others, by perceived ease-of-use and usefulness, and social influence. Coursaris and Kim (2006) show that efficiency, effectiveness and satisfaction are among the most important factors affecting usability of mobile services, which result in retention, adoption, loyalty and trust. Together with these studies Kim et al. (2007), and others have found that mobile users require the following general attributes from a mobile service: ease of use; responsiveness; economic value; experience; emotional value; satisfaction, etc. For the purpose of this study, these attributes are superimposed on and aligned with the higher values outlined above (see Table 5; Appendix A), where they are very broadly approximated from the terminology used in each authors' model, as closely as to be meaningful, primarily to the Needs Hierarchy of Maslow (1998), and secondarily to the Value Theory of Schwartz (Lindeman and Verkasalo, 2005).

In a certain sense, the market segment of users of aware devices is a sub-segment of a current market. The users of aware devices will almost certainly be part of the high income segment, will be young and have a high disposable income and a lifestyle that reflects this. Their perceptions may become significantly influenced within the Location Space and this affects their choices made in the 'normal space' of the real world. The extent to which the normal

space is affected will depend on the uptake of the technology and the manner in which it is implemented by business in general.

Notwithstanding disposable income or lifestyle, it is likely that anybody can be influenced. Take for example the world's current wealthiest investor: Warren Buffet's daily life is known to be technologically simple (Wikipedia, 2008) as he has no mobile phone, desktop or laptop computer and drives his own car despite his wealth. It is likely that even a person so averse to technology would appreciate his car informing him of when and where and at what cost to refuel or repair any potential mechanical failures, based on real-time data of the mean time between failures (MTBF) of a component of his car. If MLT is non-intrusive and can save money, time and effort, and promise convenience or a higher sense of esteem and value, it may be adopted by even the most resistant consumer. With Awareness, the battle with the competition can only be successfully waged if a significant quality of presence is maintained in the mind of the consumer.

The brand value has to be very carefully managed in a multiplicity of advertising media, and constrained available attention time in the minds of mobile users, as a company's marketing activity may undercut its own brand, achieving a contrary objective, as demonstrated by Bhattacharya (1997). He states that sustainable competitive advantage has brand value as a potent weapon. The high market valuations of companies are also in part accounted for by brand value. The issue of brand value takes on more sensitive dimensions when it comes to something as intangible as Location Awareness based offerings and Ubiquitous Computing (Watson et al. 2002).

In a world where everything is changing and technology is speeding up these changes, Location Technology is a means of implementing novel changes. Normally technology is employed to ensure that activities are done more quickly and efficiently than humanly possible. However, Mobile Location Technology, which provides knowledge of a person's context, has the potential to grasp the true values and sentiments of customer, while at the same time radically changing organisations' attitudes about service delivery to the customer. Customer treatment is extremely difficult to perform correctly using MLT and it

therefore requires an even more thorough Strategic approach in the analysis prior to implementation.

The first sub-problem of this research is to suggest a suitable construct for the enablement of higher consumer values using MLT. Thus, there is a need to motivate the holistic view taken on the topic. It provides the motivation for the review of the different areas of literature related to the topic. To read this research in the correct context requires the maintenance of a holistic view developed from the perspectives of philosophy, psychology, technology, marketing and strategy. Next the literature is reviewed to motivate such a holistic view.

2.2.1 Motivating the holistic view for higher values

a. *Individual Evolution*

There is another aspect of context in which this topic should be viewed, one of human development. The use of technology, information and knowledge, is superimposed on the evolution of human society.

The context of human evolution with respect to Mobile Location Technology is echoed by the reflections of one of the philosophers of the 20th century. Martin Heidegger (1889-1972) has been viewed as influential in the field of IT. IBM engineers created Customer Relationship Management systems after reading his work (Ciborra and Hanseth, 1998).

Brown and Lightfoot (1998:290) interpret the works of Heidegger and his perspectives on technology and information, and they quote him thus:

> "*In Dasein there lies an essential tendency towards closeness*. All the ways in which we speed things up, as we are more or less compelled to do today, push us on towards the conquest of remoteness."

The research topic was selected with the view that the concept of Time has changed to such a degree so as to be virtually non-existent. The idea of Space

is now taking on the same dubious characteristics. The very idea of whom one is … 'Being' or 'Dasein' (in Heidegger's words) … also seems to be changing. At the pinnacle of human activities is the firm, organisation or enterprise, with the powers and characteristics of any human grouping, a complex Being or entity that is almost greater than the individual. This 'Being's sole purpose is to bring forth works, and this affects the way humans behave. Mobile Location Technology was investigated because of its potential impact on diverse and cross-cutting fields, and its consequent role as a catalyst for even more radical changes in behaviour, especially in business practices. As it is only one aspect of a bigger motivation for this study, this study does not enter further into this line of thought. It is mentioned to underline the foundations of the perspective taken in this research.

Heidegger's idea of 'the conquest of remoteness' has been thoughtfully interpreted as referring to the unfettered use of technology in general and the use of Mobile Information and Communications Technologies in particular. This philosophical perspective helps serve the purpose of explaining better the point being made. The ultimate use of this technology has as its motivation a deep-rooted philosophical idea. It is the effect and nature of technological change on society and human behaviour and cognition. Applied to business' adoption of MLT, this notion demands that business, as controllers of capital, develop this technology and use it to best effect. To best effect in causing an action at a distance, is suggested as the practical implication of what Heidegger meant.

b. *Behavioural changes and Identity*

For behavioural changes to be adequately appreciated, the reader needs to take him/herself back in time to the days prior to the invention of a technology he/she uses and takes for granted, imagining what their lives would have been like then. This can also be observed in the differences between developed and developing economies. More importantly who and what they would have been like as persons within those societies, and how their mental processes, perspectives and knowledge of daily activities and the world around them in general, would have been affected. This approach is too subjective to be a scientific method, but this study does not treat evolution aided by technology

and the resultant changes to oneself as wholly objective, rather it treats of evolutionary change that has an effect on the fine, unclear balance that exists between the human and the external environment, between the individual concept of self and technologies' allowance for the possibilities to explore that self as well as the external environment. This has been studied in the works of Turkle (cf. Motley, 2005). Turkle has spoken of the effects of the online world on individuals: problems with multiple personalities, sexuality, relationship building with computers, etc. This study focuses on the implications of the mobile world for individuals and this interest is motivated by questions of existence and purpose. Tools and technologies can be used in ways that change the user's behaviour, and the Internet is no exception.

Online users experience significant identity issues. Turkle has studied the effect computers and the Internet have on individuals' identities and personalities in terms of the anonymity and abstraction that online interaction allows. People have been found to personify computers and have human-type relationships with them. Our concern is with how, the more time individuals spend online engaged with other virtual people and a screen, the less time they spend socialising with people in 'real' contexts. When chatting online, the contracting parties find themselves engaged in a common virtual experiential and temporal context. Online users' sense of being in a parallel, virtual world is disrupted by the inevitable impingement of 'real time' when network latency effects, transmission delays and failures occur. The altered identity-experience is interrupted and the individuals' immediate physical surroundings supplant their virtual world.

c. *Mitigating negative effects of technology*

There may be solutions for certain, possibly undesirable or negative effects of online technologies, such as too much time spent online, sedentary work practices, problems of online identities; and Location Technology may act as a mitigating factor for some of these effects.

The analysis of Mobile Location Awareness is objective. It is argued that Turkle's view of identity when applied in the Location space, does not allow for

anonymity and for the user to mask personality. The Location Technology users' interaction with their physical surroundings helps keep them focused on the real world. With Awareness Technology, the environment has the ability to detect the presence of the user, through locating their device, and this neutralises the users' anonymity when interacting with other virtual users in the online experience. Identity issues should therefore not arise when utilising Location Awareness. Van der Valk (2008) is similarly concerned with identity and power relations in virtual environments within the education field.

It is argued that the entire experience of multiple personality and identity occurs within the individual's cognitive sphere and has no relation to the physical space in which they are situated. Moreover, the concept of being is a complex one, involving psychology and metaphysics. If the continuous evolution of all life forms is assumed, human systems and technological inventions are also part of this evolution. Whether the tool is a retrogressive step on the evolutionary path could depend on its use. Mobile Location Technology involves the physical world, a domain separate from other domains of consciousness, which are all equally real and valid. It should be noted however, that what could be thought of as a negative effect of the technology, such as spending too much time online and in a sedentary position, could also be viewed as an evolution of the system as a whole where work processes become more productive for knowledge (mental) work which results in people becoming more internalised individuals.

The change potential of the technology can be noticed when viewed from the perspective of habitat and activity. Venkatesh (2008) shows that 70% of home access to Internet is for work purposes. Home as a lived space becomes a work, communication, information, shopping, management, entertainment and learning centre. Compare this with human psychological needs of home (Annison, 2000), understood as a multi-faceted complex concept.

In terms of socio-economic working practices, Location technology is likely to effect positive change in terms of returning to natural practices while also making processes more efficient. For example, Location technology and its application to enterprise mobility (Clark, 2006), and sales force automation (Wallin and Clark, 2006) helps make work mobile, counter-balances the

sedentary nature of working at computers, and thus helps in balancing the needs of healthy working methods.

d. *Cognition*

There is some discrepancy in the literature regarding the interpretation of cognisance. Cognisance may be interpreted as “amplifying and attenuating consciousness” (Watson et al. 2002:344). It is also the ability to incorporate knowledge/awareness into activities, processes of understanding and interpretations of the world around us so as to use this knowledge/awareness consciously for the attainment of one’s own goals. This interpretation was adopted by Nova et al. (2005) in a simulation using MLT with children in the field of education. Under the experimental conditions no evidence was found to substantiate claims of amplified cognisance among children using MLT. .This could however, be valid in other fields and similar experiments are required to test this possibility. The technology will very probably impact individuals in other fundamental ways. Thad Starner, for example, (McCoy and Fenn, 2008), has lived with wearable computing technology since 1993 and provides insights into the pro and cons of this experience. He affirms that higher levels of awareness and productivity are possible using these devices, since task repetition helped memory, he was aware of conversations and records of meeting with people, which he had instant access to.

Having devices in close proximity to users permits firms to update accurate information. This knowledge advantage of the mobile and location technology service provider is the equivalent of knowledge gained by users like Starner with their devices. Interesting use is made of Mobile phones and MLT in empirical research using the Experience Sample Method (ESM) or Optimal Experience of Csikszentmihalyi (see for example, Asakawa and Csikszentmihalyi, 1998 and 2000) for a treatment of quality of experience, connectedness and internalisation of values; and Hunter and Csikszentmihalyi (2003) for the link between interest shown and future goals. These studies were however, psychology and not technology related. The aim was to investigate the state of ‘Flow’ (Csikszentmihalyi, 1997), - that is, of users being sufficiently absorbed in their tasks as to even forget about the time. This state occurs often

in the online world, however, natural activity research is appropriate for use in such cases as MLT to achieve data that also reflects daily higher value needs. With regard to Mobile Technology, which is of interest in this study, experiences of mobile phone users drawn from the consumer public were recorded (Hosoe, 2005), and the random feedback from users was used to show their experiences in daily natural activities. Consolvo and Walker (2003) performed similar ESM evaluations using Personal Digital Assistants (PDAs). Specifically, regarding higher values though, the study that does confirm the tendency towards higher values is, Bassi and Delle Fave (2004:174) when they state that "As means of socialization," their "sample perceived these tools as sources of optimal experience." Thus, there can be instances found in the research where the technological tools facilitate and support higher values.

Human cognisance is affected by Ubiquitous Computing (Watson et al. 2002) and Mobile Location Technology. Technological innovations changed the way people interact in important aspects (Stewart and Pavlou, 2002). Mobile Technology is currently changing our behaviour (Srivastava 2004) more than at any other time, and Location Technology in particular has the potential to cause more radical changes than any other technology (Rao and Minakakis 2003; Bergeron et al. 2005). The nature of physical space could be altered through an awareness of distant objects or events, and the nature of temporality could be changed, in a relative sense, by the efficiencies that accompany such awareness, since multiple tasks can be performed in short periods. With Location information and visualisation individuals become more aware of their surroundings and thus their level of cognitive awareness is augmented, as Watson (2002) and Rode (cf. Osterwalder et al. 2005) point out. It is common knowledge that some people possess 'photographic memories' and that others are able to rapidly recall a multitude of details by using visualization methods. These abilities could aid the evolutionary progress of the human individual, as they would become more aware, knowledgeable and more productive.

In Japan, the most advanced mobile economy, mobile phones have "affected the way humans learn, interact and socialize", and have "become something of an extension of one's physical self, intrinsically linked to identity and

accessibility" (Srivastava 2004:234; ibid.:246). Similarly, prior to a physical meeting, users tend to take into account the other persons' context, especially with regards to whether they are free to meet, and the appointed time has become less important than knowledge of when the upcoming event will occur relative to each other's agendas. This may add a more natural asynchronous quality to our presently highly time-regulated, stressed world. Keeping track of Time is probably relegated to 'lower levels' of control by the technology, thus freeing up time and attention of the person allowing them more time for 'higher' human considerations. With respect to Location technology, with its novel effect of extending the period of co-presence of a physical encounter, awareness of the location of the other person and their situation/context is implied, and extends the purpose of the physical meeting beyond the time spent together.

People believe that every modern gadget of convenience is required for progress and advancement. Anyone who doesn't take advantage of new devices and the efficiencies they make possible is seen as being left behind. Non-users, however, somehow find a way to maintain their calm and identity as beings, contrary to Turkle's claims about the issues of identity and multiple personality. There is also the general notion, even in highly technologically advanced societies, that worldly pursuits are mundane, while enquiring after the real nature of our existence, of truth and of life, indicates a higher purpose, and the means to a full and rewarding life. (Walsham, 2005) shows that such a rewarding life can be had even in developing countries despite stark asymmetries compared to developed countries.

This study presents a similar view because its central argument is that the use of mobile technologies has the potential to deliver these requirements for a higher purpose in life. This argument has to do with each individual's idea of progress, purpose and meaning in life; the "customer lifetime values" referred to by Rogers and Peppers (cf. Watson et al. 2002:345). Efficiency is associated with the operational levels of the business world while strategy involves an enquiry into its higher objective or purpose. In private life, purpose and meaning are demanded when fundamental human needs are met, and these demands could possibly be delivered by Mobile Technology and Mobile

Location Technology. In particular this implies that society is moving up to a more advanced level and this offers the possibility of a full and rewarding life-style even in a highly advanced technological environment. Technologically advanced societies may have integrated the details of the technologies, to incorporate mundane tasks into routine processes of machines, thus handling complex tasks with ease and freeing up time and resources to concentrate on other higher human pursuits.

2.3. Conceptualisation of the business structure

The literature review of business models is presented as this field is found to be appropriate for the structure needed.

2.3.1 Business Models

A perusal of the literature indicates that Business Models provide the tools for answering these questions. The literature on Business Models is rather fragmented and even practitioners are not in agreement as to the use of the term. However, it is understood that business models describe the architectures of business. This research looked at business models' application to Mobility, where it has been variously used to classify Mobile business schemes in Leem (2004); as a way to describe the Business Architecture in Ballon (2007), and a way to match business performance and customer value by making the correct strategic choice in Methlie and Pederson (2007). Ballon (2007) shows that at the time the new-economy fever was subsiding, the mobile telecommunications industry was also undergoing a transformation, a change to its business architecture. The concepts of business models were appropriate for the "partial unbundling of technical and economic roles, caused mainly by increasing technological modularity and regulatory pressure, and the expectation of a range of new value-added telecommunications services." With the success of iMode, mainly attributed to its innovative business model, it became clear that for mobile telecommunications, the provision of new services through appropriate cooperation and coordination (including revenue sharing models)

was the main business model issue" (Ballon, 2007:6; Methlie and Pedersen, 2001; Ballon et al. 2002).

This study employs the definition of business models provided by Osterwalder et al. (2005:10): "A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing, and delivering this value and relationship capital, to generate profitable and sustainable revenue streams."

With the many new mobile services available, alternative collaboration and coordination models and revenue sharing mechanisms become necessary. Ballon (2007) demonstrates that this is central to Business Models as the boundaries of firms blur. Methlie and Pederson (2007) suggest that it is the Business Model option chosen that affects characteristics of the service which maximises customer value. This logic is seen as being in keeping with the general trend of 'devolving control to the edge', of both the network infrastructure, as in the case of Ubiquitous Computing, and market control being increasingly put, literally, into the hands of the consumer.

When the consumer is the one providing the input regarding their desires (Watson et al. 2002; Kotler 2002; Prahalad 2004 and, Tsai and Gururajan, 2007), the service suppliers will of necessity have to adapt their cost structures and revenue sharing in order to provide the services needed. This type of integration is in keeping with ecological strategies, discussed by Javalgi et al. (2004), necessary to deliver on consumer-demand in the Location Space. The complexity of the provision system is similar to that of a natural ecosystem and businesses will evolve by adapting their cost models. The customer demands satisfied by Amazon or eBay for example, however, do not include the idea of the higher values referred to by this study. Based on the costs to the providers, it is unlikely that the real services required to satisfy these demands - referred to as 'higher consumer values' - will be met. Thus by including other actors into the structure and service delivery process it will be possible to determine what

the higher consumer values are. This will connect the Business Model to its local ecosystem and provide it with more strategic objectives.

The Business Models concept is susceptible to being reduced to information structures and is easily convertible into computer programmes. The pervasiveness of the dynamic environment envisioned by Ubiquitous and Location computing will require both business structures and data structures to be similarly ubiquitous and manageable. Collaboration is required from technology associations in order to create the standards, structures and methods to do this, and from business where Business Models provide a way to do so.

Portals are important gateways into these worlds and the open or closed (centrally controlled) Business Model is widely debated. The importance of the portal concept has been shown to be “a vital foothold for staking a claim on the new continent” (Ohmae, 2000:84), and is fundamental to the Location Space. However, due to the openness of the technology, the new highly fragmented applications development market and the multiple players needed to get all the related processes working together there is uncertainty as to what form developments should take. Methlie and Pederson (2007) show that although support for the open Business Model exists, there are no open model portals either in the literature or deployed in business environments, and it is only the closed iMode Business Model that has been successful. At the present time, telecommunications network operators own the infrastructure and are providing services to firms, as with NTTDoCoMo’s iMode.

In Japan the iMode portal has been successful. Japan has had Location technology, with mainly entertainment type services, available to mobile users for some time. NTTDoCoMo's hugely popular iMode service provides always-on Internet connectivity (Rao, 2000) and this is helping sell other Location technology services. Okazaki (2005b) provides examples of applications deployed, such as mobile Internet, push type SMS advertising and marketing, pull type advertising/marketing, and mobile banking/finance/payment, etc.

Robins (2003) points out the fickle preferences of telephone users in Japan. This may be considered damaging to a brand in other markets. With the ease of switching between suppliers in the mobile online world, the Japanese market mindset may be more advanced, as a developed market, than other traditional markets. This indicates that other markets have yet to experience the plethora of offerings available via their devices. Doyle and Bridgewater (1998) show that across most industries, consumers expect the consistent development of new models in order to remain interested. Many businesses may face marketing challenges of this type in these future spaces, and this is indicative of a new and very different challenge concerning this technology's market place. Management should consider the adoption of new rules in this new space.

Business models have been found to be adequate tools and the research is limited to focusing on the presentation of elements and relationships. This research does not go into the details of projecting revenues streams from the services or estimate market size and does not present the details of the different strategic options a firm may choose, however, does present the considerations to be taken into account by them.

The interpretation of business support of higher values (as in aspiration to the satisfaction of higher motivational needs) can be understood in terms of the values outlined in Figure 1. The Hierarchy of Needs of individuals (in grey on the right) forms the foundation of consumer needs, the customer as active participant facing the firm implies a closer relationship than that of the consumer with the market. The individual is depicted as a single unit since the customer, consumer, and social being are different aspects of, however, part of the same individual. The firm level treatment can provide for basic customer and by implication individual needs, privacy and security needs can be met to the extent that firms control provision of products and services to the customer. However, a firm cannot provide for the wider safety needs of the individual which can be provided by the more broadly accepted market concept that can be provided by the market. Similarly, it is argued that for the concept of individual social acceptance needs the commercial concepts of identity or 'evolutionary being'. These concepts can be supported socially by a policy

body; and finally the ‘socialised human’ incorporates into the whole social system when due recognition is made of ‘internal and cognitive needs’.

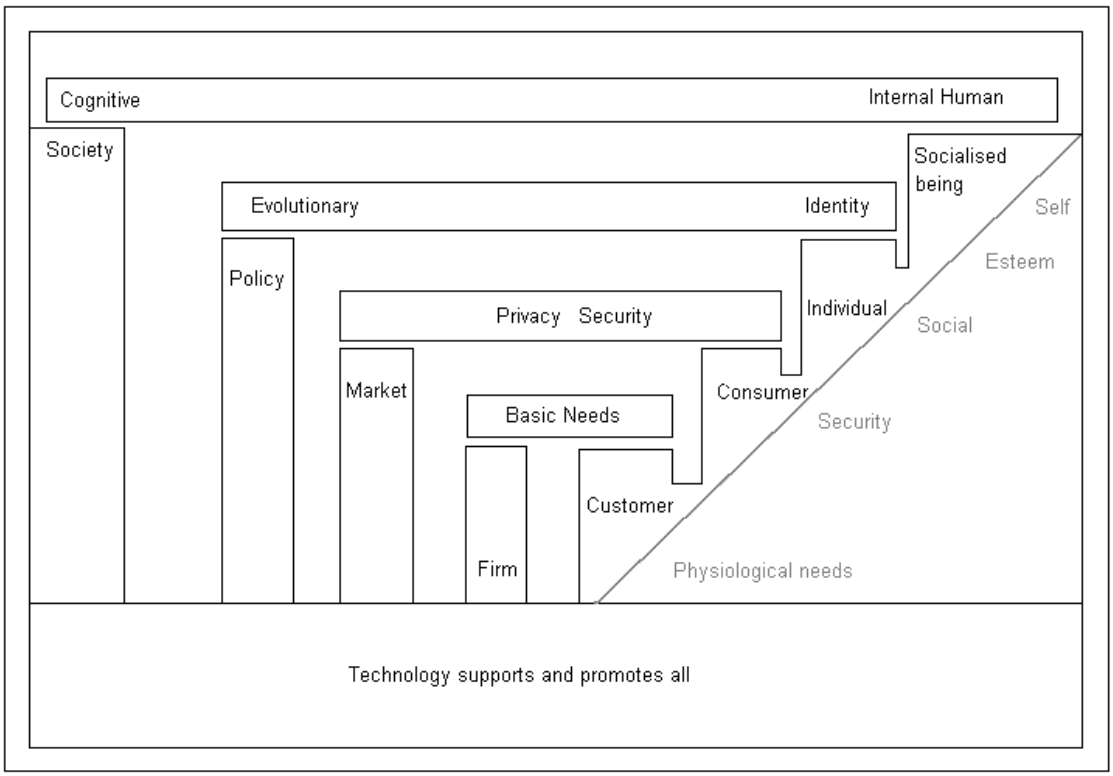

Figure 1: Business support for higher values

From the point at which business currently is, to where the economic activity incorporates these higher needs or values, there exists a large void. The gap regarding the position business holds with respect to the general technology and the factors that affect business and the implementation of the technology has been recognised in the literature and this study attempts to close this gap.

2.3.2 Research Question 1

The first research question of this study requires a structure to be conceptualised and is formulated thus:

What is the structure of the business model necessary to support higher values using Mobile Location Technology in the Business-to-Consumer Domain?

2.4. Organisational and Strategy aspects of MLT

The second sub-problem of this study has to do with a description of organisational implications that need to be considered.

In reviewing the literature of strategy in general, and particularly with respect to new technology, a pattern emerged as to the relevant literature required for this topic. The holistic approach of this research also requires that a degree of attention be paid to policy and regulation, issues impacting society, and in general efforts of collective collaboration. These are supplementary to the specific strategy considerations at the level of firms prior to a large-scale technology introduction, and the strategic planning necessary at an industrial or organisational level regarding the planned creation of an industry. Thus, an organisational perspective is adopted in this research, in addition to the firm level strategy perspective which will serve as advice to individual firms.

The strategic deliberations that firms have to make in planning for this technology are of interest however, since they will be the ones most impacted. Different aspects to consider with respect to firms' strategy are organisational change, Information systems, general strategy, new technology strategy, process issues, alignment, and marketing and consumer-related issues such as responsiveness, and soft issues such customer treatment.

A review of the literature related to these aspects is detailed in the following sections. The normal organisational or strategic perspective on each aspect is considered at first and, where available, the perspective on higher values is considered as well.

2.4.1 Organisational Implications

The introduction of Mobile Location Technologies needs business and government cooperation, as was the case in Japan (Srivastava, 2004), where planning, fostering and monitoring were co-managed. For the purposes of the holistic perspective, in addition to the top-down roles, societal groups and consumer groups are also essential. Many useful services can be offered to

prospective customers based on their location (Casal et al. 2004; Okazaki, 2005). Location as a technology holds promise of adding to the awareness between business and consumer and thus of serving them better.

Location Services are better facilitated by the newer generation evolutions of mobile technology, as these allow for the high data rates required for the various processes and information needed for location, context and user-friendly multimedia services. In addition to infrastructure-upgrade costs for provision of these services, license-acquisitions from governments were very expensive for mobile operators. For mobile telecommunications operators then, Location Services are thus an additional stream of revenue that can be generated from their fixed infrastructure. Weber (2004) shows the revenues, policy and the world situation of Mobile Technology from 2003 through to 2010. These revenues show that Location Based Services do not make a significant contribution to the future revenue streams of operators, which explains the hesitation to advance the deployment of services, in addition to the technical difficulties encountered. Patrick (2008:1) remarks that “In Japan, South Korea and the US, carrier uptake of Location Based Services has been slow” But that “enthusiasm appears to be spreading [and in] in the next three years Gartner expects subscriber numbers to grow from 3.5 million to 55.3 million globally”. This is evidence of the newness and expected growth-rate of the market.

There is also a tendency towards considering the higher-level needs of employees, as described by Whittington and Evans (2005). Maslow (1998) refers to a workplace created with a focus on such employee needs as indicating ‘synergistic cultures’ in the organisation where what benefits the individual is beneficial for everyone. Peter Drucker (2002) insists that employees should not be thought of as employees but as people. When delineating new economics, Drucker provides a vision of future types of organisations and future business environments revolutionised by technology. He proposes an enlightened economics which is analogous with the idea of higher values on which this research is premised. The principles embodied in higher values also are congruent with the ideas of personal mastery, mental

models and team learning that Senge (1990), and his concepts of systems thinking and building shared vision.

2.4.2 Considerations of Firms for MLT

Business opportunities offered by Location Services can be summarised as follows:

Table 1: Business Opportunities in LBS (Rao and Minakakis, 2003)

Demand level	Typical service	Typical business
Consumer demand in – Location & Navigation – Personalised content	Maps, Driving Directions, Yellow Pages	Subscription-based services, Pay-per-view, Syndication, micro-payments
Niche Consumer and Business	Maps, Shopping locator services, Coupon Discounts, Alerting services	Subscription based services, Advertising, Revenue-sharing, micro-payments
Industrial and Corporate	Supply Chain Mngt, Inventory Mngt, CRM, Intelligent Transport & Systems Infrastructure	Applications Service Provider, Consulting Services, Infrastructure provider

Technology forces firms to adapt the way they work (Kotler 2003; Bergeron et al. 2005, and Srivastava, 2004) which results in operational optimisations and efficiencies. Controls and constraints imposed by a work system result in changes to people's behaviour (Jessup and Robey 2002; Srivastava, 2004). These changes affect physical activity, identity and cognition (Watson et al. 2002; Stewart and Pavlou, 2002) and thus, with respect to higher values, the typical services listed above can be interpreted as showing where the user is physically and additionally satisfying personal safety needs by trusting in market accepted information e.g. driving directions. Esteem needs are met by personalised content and niche services, and social acceptance and self-actualisation needs are satisfied as a general property of mobile device use.

“Wireless Technology touches nearly every business unit in an organisation” (Clark, 2006:2). The technology proves to be especially useful in the operations unit. Depending on the degree of operations, where cost savings are made, a business will gain, if the implementation is effective. This is confirmed by Jeong (2008), who showed that significantly higher stock valuations were observed after just three days of a company announcing the implementation of Radio Frequency Identification (RFID) to its supply chain. However, the more important motivation for adopting Location technology is not merely related to cost-saving and more effective integration into increasingly interconnected supply-chains, but to the aim of achieving higher customer satisfaction (Kotler, 2002).

The need for attention to the management of customer information, is accentuated by Rowley (2002:279) who states that customer knowledge management (CKM) “is not just about data… or relationships… the focus needs to embrace both knowledge about customers and the knowledge that customers have and can […] deploy to the organisation’s advantage. Effective CKM … is concerned with the dynamic integration of systems and people [and] this perspective suggests a radical shift in the conceptualisations of market research.” It is critical to understand that this technology demands extremely good co-ordination of the internal management of customer data. Vervest and Dunn (2000) speak of this as Total Action, which refers to the importance of the whole organisation being responsible for customer satisfaction.

If all firms in the same industry use the same CKM tools the advantages of their use is cancelled. The competitive environment changes and all players who embrace the technological advancements move on to the next stage (Porter, 2001). Those who do not embrace the advancements, or do so improperly, get left behind (Kotler 2002; Watson 2002).

One of the individuals interviewed in the trial ‘interviews’ carried out described the research focus on Mobile Location Technology-related issues as being the “concerns of advanced thinkers”. Although there are many other possible applications of this technology at most levels within organisations, across many industries and through various value chains, here the interest and concern is

with the services that can be provided to the general consumer. Businesses will sooner or later adopt the technology. In other informal interviews, a number of interviewees expressed certainty that business casualties would result from this process, as there were, of course, disruptive technologies in the past and will most likely be in the future. Their attitude could be attributed to their years of experience in the industry. The idea in carrying out this research is to attempt to minimise these casualties to some extent. This further proves the systemic nature of the problem of obtaining a holistic solution: to create a more meaningful transition into a new technological market environment.

2.4.3 Marketing Aspects

The internet has demonstrated that there is considerable demand for value-added services that carry no cost (Stewart and Pavlou, 2002). Similarly, Location technology carries no extra Information System (IS) costs for a firms current IS infrastructure, but has the potential to deliver huge value from earned mobile loyalty (m-loyalty) (Lim, 2006), trust and brand value (Bhattacharya 1997; Prahalad 2004 and, Vrontis and Thrassou 2007); which are intangible value that can be gained. With Location technology the offer made to customers is largely virtual but differs from other virtual offers in that the offer is made from within close vicinity of the customer. In the same way that 'brand' is an intangible asset, so is the value increase to a firm gained by knowledge assets. However, caution is needed because Location technology offers may negatively impact brand value if the customer approach is not carried out correctly. Due to this, increased demands are made on the quality of employees, knowledge systems and infrastructure, with the result that they become yet more valuable.

Hooley (1998) describes three distinct contemporary trends: customers are more demanding; are less prepared to pay a premium; and competition is more intense. Customers are more demanding with technology, and the difficulty is that this technology space comprises an important consumer component. In examining attempts to convince mobile users to accept services, Rao and Troshani (2004:70) show the importance of paying attention to the rules of marketing and caution that "Mobile services users including innovators and

early adopters typically have a high propensity to experiment with new mobile services. They can be more innovative, and more likely to consider a technology as more favourably, and be less likely to be constrained by situational and cognitive resources… It is, therefore, extremely important that these individuals should be approached first and served with the new mobile services as they can act as both opinion leaders and changes agents for the widespread diffusion of these services. However, caution should also be taken when tailoring market strategies as, due to lack of relevance, marketing mobile services for adopters in one category is likely to frustrate adopters in the other".

Watson (2002) provides an idea of the future of marketing in a U-Commerce world. He speaks of customer rationality when buying. In addition to rationality, with Mobile Location Technology the interaction is instantaneous and local and may put excessive pressure on consumers' rational decision-making capabilities, given the short time and limited resources available during a Mobile Location Services session and this needs to be addressed. One option is for the rationality to be so well embedded within the system that rationality is effectively handed over to the supplier. Entrusted thus to a well performing supplier, the customer gives his mandate and control of spending to the supplier. No further decisions being needed from the customer before purchases is a goal that most marketers aspire to. Such trust could be earned through MLT.

The Location Space could be thought of as the 'Blue Oceans' concept suggested by Kim and Mauborgne (2004), where Blue Oceans are the new markets that are not yet competed for. These markets are contrasted with most current markets which are characterized by strong competition and are referred to as Red Oceans. The Location Space could easily be the uncontested market space in the vicinity of a firm or any location it chose.

The need for Customer focus

Prahalad (2004) argues that firms are to focus on customers and that customer knowledge of firms is an important asset for all businesses (cf. Rowley, 2002). Good customer service is crucial and finding ways to service the needs of customers should be the objective of business (Kotler, 2002). The degree to which a firm can do this is measured as its profitability. This is especially true for consumer markets, according to Prahalad and Ramaswamy (Prahalad, 2004), as consumers are empowered by information and the Internet acts as the ideal tool for allowing vast choice for comparative purchasing. With Mobile Location, users are in full control and profitability will depend on high levels of customer satisfaction. Customer satisfaction can be achieved with the right approach and by taking into account User Location and Context.

Mobile Location Technology will aid the transformation of marketing which will shift its attention from the customer focus to relationship building. Customer orientation manifests in Information Technology as Customer Relationship Management (CRM). In their work, Scullin et al. (2004) provide many examples of how technology, and Electronic Customer Relationship Management (eCRM) in particular, are helping organisations enhance their successful marketing skills. However, managers of mobile businesses are reluctant to make investments after the bursting of the e-commerce bubble, requesting more thorough analyses.

Market research is important to organisations for gaining knowledge of the market and this knowledge will become progressively more important. Organisational knowledge of customers and the customers' knowledge of an organisation, by way of its products and services, are the two sides of a mutual understanding that the organisation can take advantage of. This knowledge is fed back into operations to ensure better products and to tailor services to the needs of the customer. An organisation requires the tools to acquire and implement all aspects of the knowledge paradigm (Rowley, 2002). (Watson (2002) and Prahalad (2004) go so far as to suggest that it should be customers themselves that drive company efforts to satisfy customer needs.

The Information Society has advanced to a level of connectivity where access to information and knowledge is almost within reach of the general public. Business is attempting to address the needs of each individual of the public, in this the age of Mass Customisation, and an added dimension of this knowledge is awareness of the Location of the customer. This may be difficult for business to handle at present, however, those who can deliver the responsiveness required will benefit greatly (Erdly and Townes 2002; Kotler 2002; Watson et al. 2002; Morgan 2003, and Prahalad, 2004).

In the past, the market was treated as a collection of broad segments. Today these segments are becoming progressively smaller and disparate (Kotler, 2003) and are even tending towards a one-to-one relationship (Watson et al. 2002). The general move is towards mass customisation where attention is paid to individual customers and since individuality is a cornerstone of Mobile Location Awareness, it allows firms to be aware of their customers, even at a distance and thus has a central role to play in individualized customer service which has to contend with the demands of customers and respond to them simultaneously in terms of time, space and context.

2.4.4 Strategy Aspects

Mobile Location Strategy refers to the business strategy implemented by a company to address the new market created by Location Aware devices and their owners. It involves the processes of planning and design that a company follows when it contemplates entering the Location Space. It is the inward-looking effort at processes, core competencies, responsiveness and also overall outward-looking organisational agility with respect to the market, and includes the ability to address consumer needs adequately. As important is Information Systems Strategy which takes into consideration current available Information Technology as well as the specific Information Systems of the organisation.

<u>The need for Strategic foresight</u>

Foresight and a focus on the future landscape made possible by this technology are important. Hamel and Prahalad (1994) show just how vitally important it is

for business to be able to predict the future from present trends so as to shape their industries accordingly. These authors discuss Strategic Architecture and Strategic Intent and industry insight is indispensable as is an understanding of Industry Discontinuities. With the wide systemic impacts of MLT it can be imagined that similar types of discontinuities could stem from the Mobile Location Services Industry. They argue that "… a firm's strategic architecture must be based on a deep and creative understanding of Industry Discontinuities, of the firm's core-competencies, and of potential new customer needs. Industry foresight must be well grounded" (Hamel and Prahalad, 1994:146).

If this is also true at present with regard to Location Technologies, then business serving the consumer market has little Strategic Architecture - the high level blueprint for deployment of new functionalities, competencies and the reconfiguration of the interface with customers. This idea is taken further. From the perspective of this research, it is instructive to consider business needs also looked at from the point of view of Maslow's hierarchy of needs (Parikh, 1991) in order to understand how this concept is applicable to business. According to Maslow, until basic needs are met, the individual cannot consider higher satisfactions, as the need to survive outweighs the need for comfort. In a similar way, firms that are fighting for survival on a daily basis do not consciously look at concepts like Strategic Architecture but instead survive on entrepreneurial market intuition. If they do not see the real factors that are beyond their control and that could significantly affect their Strategic Intentions, then they are to a certain extent naive. Nature and the business world seldom show pity on the naive, those who are ignorant of its laws are unable to recognise the real dangers of any given situation.

Although this discrepancy between Architecture and Intent may be true for the system as a whole and every organisation, it is especially noticeable in Small and Medium-sized businesses. They seldom have the resources to implement Strategic Planning, do not see any (immediate) need for it, are generally not able to perceive a change in market or their industry, and may not really see how the industry they're in could be affected by market forces. It is only those

organisations that have met their basic needs and are on a high enough position on the scale of needs to afford the luxury of strategic thought or Architectures. One of the effects of not having control of future situations is the tendency to feel that nothing can be done and thus to avoid taking pertinent action. One of the intentions of this research is to allow those business stakeholders that do have control to create the conditions that enable other individual firms to know what actions to take in their own interest.

Hamel and Prahalad (1994:132) comment that "… Individual freedom… often yields unexpected successes, but something more is needed if the goal is to position a company for leadership in Complex Systemic Opportunities…" and this research suggests that Location Technologies can address this sort of Complex Systemic Opportunities. The question for each individual firm would be whether or not to enter into this technology space. Some businesses will obviously be better suited to the ways in which Location technology allows them to interact with the consumer. For others, whose absence from this space can be compared to a lack of an Internet presence, their businesses may survive but will not take advantage of the opportunities available and will thus not evolve with the environmental evolution.

At the early stages of this technology industry analysis is appropriate. Porter (1985) provides the rationale for operating a competitive business profitably with his treatise on Competitive Strategy, and the 5-Force analysis of industrial structure. He crystallised competitive strategy into three classes: Cost Leadership, Differentiation and Focus. With regards technology and innovation he states that introducing important technological innovation could simultaneously achieve lower costs and enhance differentiation, and that even innovation not specifically technology related could have the same effect. He also states that the ability to achieve both strategies depends on the firm being the only one possessing the innovation; and that a pioneer may be at a disadvantage if it tries to achieve both strategies at once and does not take into account the possibility of imitation by competitors.

However, industry analysis possesses limited applicability as industry and market boundaries are blurring (Morgan, 2003). Technology makes even

established industry players vulnerable to start-up companies, and incumbency in any industry means little (Hamel and Prahalad 1994). Supply Chain integration creates efficiencies for buyers and suppliers, making for tighter value chains where it becomes more difficult to make easy money and the rules of competition change. Additionally, entering into this space has more to do with what firms stand to lose than the profits they could make. Porter (1980:339) states that “Crucial economic principles identify businesses that are attractive targets for entry and help determine what company assets and skills will make an entry profitable. These principles are essential to the success of failure of entry, though they are lost in the legitimate concern for all human, organisational […] factors that can also be important”. This research takes the stand that this last phrase is particularly appropriate given the technology and perspective on higher values.

Other traditional concepts of strategy necessary for this new Location Space are considered in the following sequence: First Mover Advantage (FMA); Alignment and finally, Innovation and Change. The possible implications for local firms are then discussed.

a. *First Mover Advantage*

Firms affected will need to ask themselves questions regarding entry into this new market space. Should they decide to enter after analysis, they would have to plan the timing of entry, both based on their own capabilities and the positions of their (current) competitors.

On the subject of entering into new technology markets and having the First Mover Advantage, Porter (1985) argues that developing a strategy in a business going through disruptive change is a challenging task, but those that define a unique competitive position early and incorporate this into their activities, will succeed, and that the few companies that have fundamental advantages will prosper. However, it is also these fundamental advantages that he refers to, when he describes “the myth of the first mover” advantage in Porter (2001:68), where many new entrant Internet companies destroyed industry value when setting below cost prices.

The assumption that the First Mover enjoys an advantage when entering most markets is common (see Niedrich and Swain, 2003) but the question of the sustainability of the advantage is less certain. Boulding and Christen (2003), claim that the First Mover Advantage is sustainable under certain specific conditions - such as the lack of consumer learning, a strong market position and patent protection. Pioneers do better where variety is concerned and worse in areas where service quality is important. There is an abundant variety of Location Services but service quality is a pre-requisite. Thus, a pioneer could attempt to achieve FMA with variety in their service offering, however, would also be obliged to produce the requisite service quality.

Denstadli et al. (2005) found that the pioneers were perceived by customers to be significantly superior to those who subsequently entered the market. Mellahi and Johnson (2000) compared FMA in traditional brick & mortar firms against new technology firms. FMA is achieved by defining the standard by which their offering will be judged by consumers. The product or service should be positioned at the Ideal/Prototype Point or as the market standard, and to do this it requires continuous innovation.

The Amazon (Mellahi and Johnson 2000) and Netscape (Cusumano and Yoffie 1998) cases provide us with an idea of what new technology strategies would have to be in general. With new technology it seems that there are few options but to move fast, be agile and flexible, and try to ensure Intellectual Property Rights. Intellectual Property is important if it’s going to be enforced under the law concerned, but the duration of the advantage is questionable as imitators quickly catch on, and the costs of policing and enforcing are high.

In informal interviews, one operator claimed that they had been the first to test Location applications but had received poor responses from users. Certain features deployed had been switched off by users, most likely because they were disturbing, however, this could have been also due possibly to consumers not being prepared for the technology (Jarvenpaa et al. 2003).

b. *Alignment*

The marketing process is of interest here because of the novel nature of this field and the need to be more responsive to market changes and consumer needs. Marketing knowledge of Location technology is needed beforehand in order to formulate strategy. It is needed in almost Real-Time and thus the importance of Information Systems (IS) being able to acquire and process such knowledge. Hooley et al. (1998) shows that 'hidden champions' like The Body Shop, Marks and Spencer, and Virgin, don't have marketing departments, but possess the essentials of a Marketing Orientation. Utilising this technology successfully will entail a Marketing and Consumer Orientation, but since the functionality is embedded into the IS processes, may not require a marketing department in the traditional sense.

The alignment of Marketing Strategy and Technology Strategy is extremely important in this context, and both must be aligned with Business Strategy. All three would need to be more intimately connected with the consumer market in order to be successful. Awareness technology is another dimension in gaining better knowledge of certain aspects of the market. Awareness and particularly Location technology will affect organisations differently depending on the different needs of each organisation, and the different consumer needs it intends to serve. Notwithstanding this differing degree of dependence, Bergeron et al. (2005:1) state that: "The alignment between the use of Location Based technologies and a firm's business strategic orientation is of primary importance."

Getting one or two alignment issues wrong could result in non-optimal performance, however, all strategic activities need to be aligned in order to achieve optimal performance. This is not easy to achieve even in current businesses which are not affected by the complications of new technology. With new technology the difference between optimal and non-optimal functioning will be the difference between success and failure. Entering this space is a sensitive issue. Organisations will have to think it through very carefully, and decisions need to be taken with care (Hamel and Prahalad, 1994).

The problem of alignment being further complicated by higher values is illustrated in Kaplan and Norton (2006:91), where in their example attempting to exploit the “enterprise value proposition for leadership and human capital development”, they state that “no mention os customer focus was found in” the companies “aspirational values”. Although not specifically interpreted in the higher values sense of this study, there is reference made to “aspirational values” from the Human Resources perspective of human capital development, which this study attempts to show can be developed by business and technology. The overall idea of this study, nevertheless, is understood to be the concept of alignment between all business functions, with the added dimensions of the consumer, societal, policy and industrial functions as well.

c. *Innovation and Change*

Drucker (2002) predicts that even if organisations possess competitive advantage that can be sustained under certain conditions, adept imitators could change that, organisations of the future would have to improve, grow and innovate in the new technology environments. Innovation and technology aids the organisation and its strategy; it supports management; and improves performance and technology integration of activities. It also enables a more strategic approach in the overall innovation process. Location technology is not only for firms operating with innovation technologies, or employing innovation as part of strategy, but is also an innovation that almost all businesses will be affected by in some way. As an innovation that will influence the business environment of the future, it has to be given serious consideration.

A decade ago, Ohmae (2000), and other strategists, posed questions related to who customers were; who competitors were, and what core-competencies firms had. He also recognised that those questions no longer applied in the changed environment - the invisible continent - where “the technologies were necessary for it to exist. But they were not sufficient” (Ohmae, 2000:3). Strategy had changed and Ohmae implored corporate strategists to not repeat what was previously done when the environment changed. The physical environment, activity, and methods have to all be questioned. Similarly, in the Location space the previous tenets of technological change are more ambiguous and need to

be carefully evaluated. Strategy in this space is different also in that it focuses on the customer, and Stewart and Pavlou (2000), Watson (2002) and Prahalad (2004) have emphasized the importance of being customer orientated and providing for customer needs.

d. *Local firms affected*

Location technology is likely to allow local businesses catch up with 'connected' businesses. Amazon's international sales in 2003 were more than 30% of total sales and expected to grow according to Stone in (Javalgi et al. 2004). Amazon started out by selling books solely over the internet and thereby by-passed local bookstores in other countries. Similarly, local firms could lose business to firms that use Location technology as consumers will literally bypass them if they do not utilize by this technology and actively seek out the consumer. Amazon's international sale figures are stable: "International segment sales, representing the company's U.K., German, Japanese, French and Chinese sites, were $2.01 billion, up 44% from first quarter of 2007, and increased to 49% of worldwide net sales compared with 46%. Excluding the favourable impact from year-over-year changes in foreign exchange rates throughout the quarter, international sales grew 31%" (Amazon.com, 2008).

This is one of the effects that technology can have on local business. Not all businesses, especially small resource-constrained businesses, can be assumed or expected to have the same technological knowledge (Carneiro, 2006). There may be many local businesses that are unaware of this approaching technology as they are generally unable to see the future of technologies, a very separate issue to day-to-day business.

Location technology, could possibly catch management off-guard. A wide-scale adoption of the technology would almost certainly impact on small local businesses. Bigger businesses or those more technologically adept will most likely be forced to take advantage of the benefits of supply chain and other efficiencies, and go in search of profits that will be earned by responsiveness and attention to a Consumer Approach. They may be forced to look for profits at a distance from their physical locations, thus going into competition with small

local players situated in this territory. Just as big business in developed countries and mature markets are “rushing to find new opportunities for growth” in developing markets (Dawar and Frost 1999), they may be forced to extend their reach into the local ‘Location market’. The concept is likely to take effect across all markets simultaneously. It is likely that small businesses will be trapped by a technology wave advancing faster than they could, and a paradigm shift in the business environment.

This paradigm shift is likely to have a greater impact on Small and Medium Enterprises (SMEs) and not only for small item goods that can be sold easily over the Internet, but also larger ticket items. If and when Location technology eventually takes off, it can be conceived that bigger players with their experience and resources could potentially take away ‘the locality’ from local smaller players. It is conceivable that a customer may find a product that is marketed via the Location-offer more attractive than when the same product is available in a local store that the customer walks by. Current examples of this effect include (non-technological) innovation of loyalty points by supermarket chains and internet advertising on portals like Amazon.com, Yahoo! or i-Mode. Revenues are going to a ‘distant’ offering and local businesses are unaware of or unable to respond adequately to this new technological environmental transformation. Thus, the argument for the necessity of a strategic stance on the subject is further substantiated.

The Location services offered by enabled capable companies are natural extensions of the services of this new technology space and these companies are not necessarily purposefully invading the local stores’ market. This is an environment that naturally enables the intimate consumer interaction spoken about by Prahalad and Ramaswamy (cf. Prahalad, 2004), Kotler (2002) and Watson (2002), among others.

This interaction is attributable to the initial market entry conditions, where for example, mass web visits to Yahoo, attracted advertising customers, rather than the active marketing of the distant source. This also indicates how skewed the initial market conditions really are, and how the effects of the global market place can be compounded, in this case, by Yahoo’s global presence. Location

Technology is not yet here but the features of its potential can be recognized. This then further emphasises the point that the entry into the market is a matter of Strategic priority, the successful execution of which is an urgent matter for management and small businesses. The threat to the revenues of local small business could be a very likely threat depending on how the technology develops and how the competitive environment takes shape.

Market disruption, Policy and Regulation

Following on from the above line of thought and taking into consideration globalisation, at the level of global economics the possibility of market disruption described by Javalgi et al. (2007) and Stewart and Pavlou (2002), becomes more evident as it is likely that economic crises result from technological impacts, although the mechanisms may not be evident. This research advises recognition of the disruptive market economic possibilities and the resulting social and real effects felt by people. The characteristics of the technology being such that measurements and consumer knowledge is known, this knowledge can be put to best use in an adequate context. The context required needs to be a holistic one and treat the main issue systemically. The possible benefits of the process include enabling higher values and sufficient economic market information to allow for intelligent management of technological impacts. For this, collaboration of policy bodies is required. A general prerequisite to the entire effort of industrial coordinated action is pinned on effective collaboration. Drake and Schlacter (2007), indicate that a virtue ethics perspective is supportive of sustainable collaboration, suggested by this research, and is preferable to dictatorial collaboration. Thus it can be argued also that sustainable collaboration will support virtue ethics, as referred to in this text. Nunnally et al. (2006) show a highly detailed example of cross-collaboration of biopharmaceutical companies and regulators. This is the type of collaboration referred to in this context, inter-organisational cooperation. In the technical context there are also collaboration mechanisms which refer mainly to real-time web collaborative tools, see for example Epp (2003), however, notwithstanding the importance of mobile technology in the context of this study, it is not what is meant when the intention is to achieve support for the extra-organisational

concept of higher values. Collaboration of both types is fundamental to the purpose of this study.

National policy in collaboration with the private sector shows clear advantages (Srivastava, 2004), especially for technologies such as MLT which are difficult to manage. Regulation, the most important factor driving Location Based Services, was passed for Emergency Services to enable them to locate and service all emergency calls. Allowances were made to delay deployment because of technical difficulties. Casal (2003) compares the regulatory laws in the US with those of the EU and states that they are similarly concerned with customers' privacy and security, about which not much can be done. It is evident that the larger authorities are also an important consideration even if the delivery of mobile services is to individuals.

The literature for the regulation of the mobile industry mainly concerns its contribution to economic growth. The structuring of market regulation, though working with government, does not filter social needs into the market. Even for regulators the decision-making criteria are based more on economic costs and benefits than overall social benefits (cf. Bonciu and Williams, 2006). This scenario is also likely when regulatory processes do not take the wider social structure into account. If however, other benefits are considered, economically non-feasible applications can be found that are worth the cost. An interesting mixture of society policy and business requirements is observed in Drucker (2002), when he states that the peak of business and entrepreneurial spirit needs to become embedded in the social structure. The stance of this research is to find the point where the wider view of the socio-economic benefits needed, can find a balance with current economic measures to make for supportable values in the future.

With respect specifically to the provision for and the support of higher values, the need for personal security is provided for by MLT. In an attempt to protect abuse case victims, location technology is employed by legal authorities to monitor the movements of offenders. A commercial solution employing GPS, RFID, wireless technology and situation-specific sensors, Omnilink (2008) details the way the technology is used: " [It] offers a victim a safeguard that

tracks the proximity of a victim's off-the-shelf cell phone in relation to a particular offender. If the offender comes within a certain distance of the victim in situations where a judge has mandated a restraining order, the system alerts the victim, monitoring officers and law enforcement immediately".

As the technology develops, it is not difficult to imagine other needs being met, and higher values being supported.

2.4.5 Research Question 2

The literature suggests that the strategic aspects that need to be considered require more than only a firm level strategy but also one on the industrial level which implies an organisational perspective. Thus the research question is phrased in terms of the organisational and strategic aspects.

What are the organisational and strategy aspects to be considered?

2.5 Conclusion of Literature Review

Various areas of Mobile technology have been researched and presented in the literature. The areas most relevant to the topic include technology development details; usage; motivational aspects; adoption and consumption models; privacy and security issues; user interface design, and others. The technological aspects have been widely and comprehensively researched and there is extensive literature on the problems and questions regarding the ethical issues, online virtual worlds, identity and related psychological aspects, and on Internet and mobile commerce.

However, many authors (Leem et al. 2004; Methlie and Pederson 2007; and Ngai and Gunasekaran 2007) have expressed concern over the lack of research in certain key areas. With regards to Mobile Location, these include strategy aspects and technology adoption between Business and Consumer, and in the case of 'higher consumer values' studies, none were found. Specifically on Mobile Location in M-Commerce there is relatively little in the literature. For example, only 2% of 65 articles reviewed (Ngai and

Gunasekaran, 2007) are specifically Location related, and this was a 2005 review of articles published in 2003. The dearth of research indicates that the research community has been slow in tracking these developments. Nevertheless, this research has attempted to use the available studies and has attempted to research the main thrust of the topic thoroughly. The review provided important direction for the creation of a holistic structure for the support and possible user adoption of Mobile Location Services. These are presented in section 4.

Frameworks are tools used for conceptualization and Business Model tools additionally form a construct by which real world business creations could be started (Osterwalder et al. 2005). It is therefore found that Business Models are adequate for the conceptual design required.

Thus, it becomes necessary to ask the following relevant questions, which become the research questions:

2.5.1 Research Question 1:

What is the structure of the business model necessary to support higher values using MLT in the B-C domain?

As there is a need to maintain an organisational perspective as well a strategic one, it naturally leads one to ask:

2.5.2 Research Question 2:

What are the organisational and strategy aspects to consider?

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Research methodology /paradigm

This research was initially approached by means of the Phenomenological method but when it was found to be inappropriate after a trial study the decision was made to proceed by Literature Review only. The reasons for this and the structure of the Literature Review are clarified in this chapter.

3.2 Research Design

This study began with the intention of finding out, using specific research methods and analytical tools, what consumers wanted from this new technology and what business thought it could do to satisfy customers or design services with this technology.

Each of the following factors pertinent to this study was considered:

1) The Technology is new;
2) The Technology is not yet in mainstream operation;
3) There are many uncertainties in all aspects of development, operators can be expected to have doubts on implementation and services that will be offered, or would have only trial and error projects underway;
4) General Business can also be expected to be relatively unaware of possible uses, and the current business environment has not yet developed enough to make the use of this type of technology feasible or meaningful;
5) It is possible that few persons of the general public will have knowledge on the subject, or that the probability of finding them is extremely remote.

There are discrepancies in revenue expectations. The predictions of Weber et al. (2004) that anticipate little revenue by 2010 are contrasted by those of

research firms like Gartner (Patrick, 2008) who foresee the development of a multi-million dollar industry. These discrepancies are one reason for not attempting such a study prematurely and the uncertainties indicated by these divergent views are one of the reasons for choosing a Literature Review as the preferred methodology over other quantitative or qualitative techniques.

It was thought that the only reasonable approach to the research problem was from a completely theoretical point of view which entails an analysis of the appropriate literature and current thinking. A Literature Review methodology was selected to investigate this topic in order to find possible theoretical solutions to the problem posed.

3.3 Population and sample

3.3.1 Literature Review

The population is the literature of each of the areas that impact this field of study: Technology; Consumer behaviour; and Business Strategy, and mainly those works which make reference to higher values.

3.3.2 Sample and sampling method

The research questions can be answered by looking at the work of others in the literature. Background information was gathered from general research. The specific data samples, treating of the general line of thought of this research (where available), are other research works undertaken in the above related areas, and those works which in some way suggested or alluded to the possibility of, or the need for higher values on the part of consumers.

Exclusive use is made of peer-reviewed journal articles and the academic press and thus to reputable literature resources and literature from the popular press or the Internet is not referenced.

3.4 The research instrument

As this research was conducted exclusively by literature review, there was no separate instrument used.

3.5 Procedure for data collection

For the Literature Review, reference works from a university library were consulted: '*La Universidad de Carlos III, Madrid, Getafe*.'

Also online academic journals from the ABI/Inform database, Academic Search Premier, ACM Digital Library, Business Source Primer, Emerald Fulltext, IEEE Xplore, Ingentia Journals, Kluwer Online, Science Direct, Springer Link Online Libraries, and the Gartner and Burton Group, were consulted.

Although it would have been useful to make reference to certain books and authors, this could not be done for the lack of access to their works. Only the data sources that were available have been used and therefore extensive use was made of online journals. Although many books and articles were examined, only those pertinent to the topic are presented.

3.6 Data analysis and interpretation

The process of logical induction and deductive reasoning is employed. Trends are observed in technological developments that lead to the next steps in a logical process. Cumulatively these trends imply the next possible step in an evolutionary process and the most likely effect from the previous causes. Joseph Schumpeter was of the opinion that there is no prediction of the future, only analysis of the past and inference of the next logical sequence in a chain of related events (Fagerberg et al. 2006).

This process is applied inductively first, as described originally in the works of Francis Bacon, and then deductively to arrive at specific solutions, as argued by Rene Descartes (see Buchanan and O'Connell, 2006). These methods are explained by Rowlands (2005); Weed (2005); and Iqbal (2007). Metcalfe (2003)

makes a balanced argument for research by literature review and states that only by treating all evidence from previous authors as ‘expert witnesses’ in a courtroom metaphor, can supporting evidence for a thesis be judged.

The literature consulted falls within the fields of Technology, Consumer Behaviour and consumer psychology and business strategy. In the areas of technology and consumer behaviour the theory of inductive reasoning is applied to arrive at conclusions. Inductive logic is where particular instances, in the form of observations in the real world, and their confirmations from the literature review, form the bases of the propositions of the inductive argument being made. The conclusions are arrived at by showing that the propositions are highly likely to be true.

The development of the argument is from the dimensions of 1) time and 2) technology. Time is divided into past, present and future. Technology is divided into Internet (or generally technologies that exclude mobile), Mobile Internet (or generally the access to information while on the move), and Mobile Location Technology (or generally Mobile Technology with knowledge of the context of users, particularly their Location).

With respect to time, the past, present and future are the propositions of the inductive enquiry adopted in this research to investigate the main drivers influencing technology, business and the consumer. Business and Consumers are treated as domains and entities in their own right as each are (qualitatively) affected by the developments described. The propositions being put forward are that the occurrences of the past have happened and are therefore tautologically true. The present is very closely linked to the past in that there is a fixed degree of change that could happen in the present and this can be observed. These observations are the propositions made by the researcher for each of the business and consumer domains affecting this research and technology, the past and present propositions lead logically to the highly probable future state of development over time, the consequent conclusion.

With respect to technology, pre-mobile, mobile and mobile with location, are distinguished from each other to make propositions about each. Technology

that existed prior to the pre-mobile phase has certain limitations with respect to mobile technology, as well as limitations of its own. Mobile Location Technology has certain advantages and disadvantages over both pre-mobile and mobile technology. These characteristics of each technology are the propositions used in the inductive argument to arrive at a highly probable future state of technological advancement with respect to Mobile Location. These propositions are developed from observation of the physical world, the state of development of technology and consumer behaviours, and the processes of business. The propositions are not formally stated as such, in terms of the way they are interpreted, and made as statements of fact. These observed propositions are researched and confirmation or refutation is searched for in the literature.

The Domain of this study

The domain has to be clearly understood as (only) a highly probable future state of the consumer market, and furthermore, that it is only the part of that market which could probably facilitate the 'higher values' of consumers, and this is what is considered as the domain here. This market state is made possible by Mobile Location Technology and therefore will be referred to as the Mobile Location Services (MLS) Space, it could also be seen from the point of view of the consumer as the Mobile Location Consumer Mind-space. It should be understood that this is not an existing field, although markets segmented by consumer values enabled by other technologies do exist. The uniqueness of this field of study lies in the fact that the technology is new and that consumer values are those that exceed the normal values required. There is no specific literature that treats a field of higher consumer values as a separate area of research, none was found. The field is therefore approached indirectly via the relevant research in the literature of the three different domains of technology, consumers and business. Those works which refer to this type of future space and consider the higher values with application to consumers serve as proof of the possibility of the existence of such a space. The relevant literature is examined for each domain in order to prove or disprove the trends that will lead to this field, and the facts and expert opinion of other more reputed authors confirm the probable occurrence and even the need for this field. When the

literature for these domains does not specifically view this field in the way outlined above or suggest it as a future possibility, this is made explicit. This is the foundation of the inductive process used to arrive at the conclusion that this space probably will exist. Thus the future space is posited and arrived at.

The characteristics of this (MLS) Consumer Mind-space require certain characteristics of the business environment to supply and satisfy the needs of consumers of this space. This cannot be found in the literature leading directly to the state of business that will have these characteristics. Different viewpoints are considered from literature related to fields concerned with the technological impact of information systems, the technological (informational and processual) impacts on organisations and the strategic consequences that need to be considered. The literature, however, provides descriptions of the opportunities and possibilities for business. There is also a broad body of business strategy theory which helps the research in this direction.

The business literature suggests what business should do to address the future technological space. However, the logic is linear in attempting to reach stepwise improvements in current business structures and processes. Stepwise improvements may not suffice for order of magnitude transformations required. This research has noted the lack of cross-domain recognition of the importance of other factors which are likely to be necessary to deliver the next levels of value required by consumers. This research implicitly posits a wider need to consider fields such as consumer psychology, user needs of personal technology, a systems view of pervasive ubiquitous technology, and policy considerations with respect to individual rights. There is also the need to look at policy considerations for the delivery of societal values to citizens with a cost-benefit that is not viewed exclusively from the point of view of the firm but also society and the economy. The place that this research envisions for business in this future field indicates that there is a large gap between what present business structures are and what business is doing to achieve the future state. Enablement for the delivery of higher values is seen to require the inclusion of a level that is also motivated by a broader conception of value than that of individual firms. Other bodies of the socio-economic context are required as part

of the business structure to allow for such enablement. To arrive at this structure from this point of view, the method of deductive reasoning is used.

The reverse argumentation to inductive logic is employed to obtain an adequate structure to serve as the vehicle via which business could effect the necessary implementation. The field of theory of business models is selected as an appropriate way to conceive of the structures and processes needed and serves to provide the solution to the problem initially posed by the research, which is, finding a framework that enables consumers to achieve higher levels of values.

An investigation of the literature allows an examination of the various aspects of the questions posed. The aim is to develop a framework, in which the elements and interrelationships between the elements form the platform for the creation and delivery of the higher values discussed above. This research will be deemed a success if a systemic view of what such a framework should comprise and how it should function is reached.

The questions posed to the literature:

1) What is the structure of the business model necessary to support higher values using MLT in the B-C domain?

   This would also entail the following elements and method:

   a. What will the elements of such a business concept be?

   b. How will they interrelate to function well?

2) What are the organisational and strategy aspects to consider?

Although these questions need specific answers from the literature, additional proof of the background holistic picture needs to be demonstrated.

The successful completion of this work should result in a framework that will allow for a structuring of a workable model to effect the successful adoption of Mobile Location Services. The research core of this research concerns the strategic planning the MLS industry should implement to enable the

achievement of higher consumer values. Higher consumer values are in line with the values delineated by Maslow's Hierarchy of Needs.

The state of Mobile Location Technology development is similar to the early stages of a research field. When the technology, market and consumer values field of study are undeveloped, it is appropriate to use the inductive-deductive methodology as did Bacon and Descartes who were the pioneers of scientific method at the very early stages of scientific research. Lambert (2006) has shown that using the inductive-deductive methodology is also appropriate to study Business Models. The literature review suggests that the best tool to describe the solution required is a Business Model, therefore it would also be appropriate to use the inductive-deductive methodology in finding a solution in this young field. This is despite the fact that the solution required is larger than the models provided in the business model literature since a broader view of consumer values are involved.

3.7 Limitations of the study

Given that the field is relatively new, the research is of a conceptual study in nature. One of the few possible limitations of doing this research solely by Literature Review is that the field tends to be treated in a far too general manner. This is possible because business solution feasibility varies depending on each business. Targeting only certain small segments could be feasible and even highly profitable for one, while not so for another. Discovering what makes specific businesses profitable in this field is not the aim of the research.

The analysis of the field before the mainstream introduction of the technology into the market makes for the strategic nature of the study. It attempts to position the business aspects, roles of stakeholders, and methodologies to employ and give perspective and purpose to the implementation of the technology.

The research is limited to Business Strategy in addressing Mobile Location Services in the Business to Consumer Domain.

Although the Business Model may be adequate for the description of a conceptual design, Business Model research at the current level of development is incomplete for detailed levels of implementation, as there exists a “strong theoretical deficit in the literature regarding the operationalization of its concepts…” (Ballon, 2007:7).

The nature of the technology means that the consumer space is an individual one. This research has however, focused on the structural conditions for the creation of the technology possibilities that could occur in the future. It by nature is a general work and given the many variables that may affect these conditions, including cultural factors, these will need to be taken into account to measure how realisable such a study will be.

It is possible that there may be theoretical solutions to the problem may be found in Industrial Organisation literature, but it is believed that practical rather than theoretical solutions need to be developed for the implementation of Location technology into the industry.

3.8 Validity and reliability

3.8.1 External validity

The nature of this study is conceptual. From the theoretical point-of-view, it should be valid if carried out correctly. Observations are made on many samples of different applicable theories and research results from reputable academic sources. This should make this research also valid.

3.8.2 Internal validity

The method of inductive-deductive logic applied should also be valid in itself if applied correctly. A more complete literature review will give the work better internal validity. Done when there is more available literature on the specific topic will also make the work valid.

This research is general in its treatment of the topic and provides general solutions. From a review of the literature an attempt is made to outline all the important factors related to general business and consumer perspectives. Nevertheless, the results are thought to be within reasonable limits of applicability to business and the real world, in terms of meaning and identifiable causality. The broadness of design and diversity of input to the problem, serve to effect the intended understanding. Coldwell (2007) asks questions regarding the level of meaning in business research and methodologies required, in this research is taken to be valid to the level of meaning required to satisfy the purposes of business research.

3.8.3 Reliability

By looking at relevant data of the different fields of research on each of the relevant domains necessary for this research to be complete, it can be fairly sure that this research will be reliable in terms of the approach of a conceptual study.

It was chosen to search broader studies of a pertinent nature that have also made investigations related to the theme studied in this research and obtained results which will make the information reliable. These types of studies and perspectives are useful to this research. Sourcing data globally from influential actors in the formative stage of this particular aspect of the industry is appropriate. E.g. The Japanese, US and South Korean industries are more advanced in Mobile Technology and more research has been conducted on them. Reports from market research companies can also be relied upon since market leaders value them highly, reflected in the prices paid, and thus provides a greater degree of market validation of the results. For these reasons also it is justifiable to investigate this topic by way of Literature Review. However, these market research firms usually direct their research to big corporate clients, thus, their reports may not exactly reflect an equal response from small and medium enterprise facing the consumer market, and would have to be interpreted accordingly on an individual basis.

CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

The study presents a way of looking at this technology that illuminates its possibilities and puts the future environment into perspective so as to allow adjustment to that environment. This study intends for the Industry and its players to choose a stance on the position they hold. It allows for broad fundamental motivations based on higher values that the industry should hold as core long term policies for developments in the market. It also provides guidelines for individual firms that will adopt this technology in order to remain competitive and ensure the integrity of the industry by keeping the trust of their customers and the consuming public.

The research began as an attempt to pinpoint the elements of a business framework that would enable the achievement of higher consumer values. The focus was on what those elements were and how they related to one another, and whether there were any strategy aspects that needed to be considered.

The following findings are presented in this section:

1) The elements of the framework are a Business Model incorporating societal groups and regulation. This framework can be viewed from the perspectives of industry and the firm

2) How the elements relate to each other

3) Strategy considerations

4) The Industry and Firm views of the Framework

The logical induction applied to technology shows how the technological environment has developed and predicts the form it is likely to take in the near future. Similarly the consumer development in both time and with respect to Internet, mobile and MLT are presented. The business structure required to support higher values is then deduced.

4.2 Type of literature used

One of the main ideas behind this research (in addition to the modelling of the solution) was to investigate the augmentation of cognition of users of MLS. Although there is theoretical work to show that there exists the possibility of cognition being augmented (Rode, 2000), the empirical results have not shown these results (Nova et al. 2005, and Nova 2007).

Nevertheless, from the literature consulted, other important aspects of the problem have been solved.

4.3 Results pertaining to Research Question 1

The results pertaining to the first research question regarding a Structure supportive of higher values, is presented in what follows.

Table 2: Technology evolution

1	2	3
e-commerce	**m-commerce**	**MLT**
Always-on	Always-on	Always-on
Anytime	Anytime	Anytime
	Anywhere	Anywhere
	Mobile personal devices	Mobile Location aware personal devices
		Local information
		Current Context

From this it is observed that Period 1 has already come to pass; Period 2 is the current era which is characterised by Mobile communications; and Period 3 is the Mobile Location period, which includes all of the previous periods' characteristics and more. Thus, multiplying degrees of complexity of the technology field are demonstrated by logical induction.

Table 3: Individuals and the technology evolution

1	2	3
e-commerce	**m-commerce**	**MLT**
Positive effects:	**++**	**++**
• Always available information • Acquire knowledge • Email, Chat with other connected parties across the network	• Communication: Able to contact and be contacted anywhere	• Information about location and user context could help them greatly
1	**2**	**3**
e-commerce	**m-commerce**	**MLT**
Negative effects:	**++**	**++**
• Sedentary work • Most time indoors at one spot at home or work • Allows multiple personality	• Being contactable anytime anywhere may not be desired **+** Unknown aspects of the technology and services	• Being troubled by the technology and service providers could lead to frustration **+** Unknown aspects of the technology and services

Individual needs with respect to new technologies:

It can also be seen that each of the technological environments have permitted differing degrees of freedom to individuals with regards to the possibilities that can be exploited by the technologies. This is presented in Table 3. Humans are complex beings and individuals have found different ways to express and even explore themselves through the technologies. By analysing the literature and applying logical induction it can be observed that the possibilities for individuals in the location space are likely to be those shown in the preceding table. With the additional modification of purchases to each period the same can be made to apply to consumers. MLT adds to the evolution of M-commerce, which itself adds to e-commerce, this is indicated by the (++).

The application of the technology to the consumer market and the consequent consumer demands of the technology are logically induced from the relevant literature and the possibilities offered by the technology. Despite the fact that consumer service demands are at present not being fulfilled by business, the reviewed literature provides the best approximations of what will be required under the empirical conditions tested.

A number of questions are proposed to ascertain the type of business constructs that will be required to satisfy these needs. These questions concern the ways in which these constructs will relate to each other, and what form they need to take to be successfully implemented in the business world. The questions led to are: What will motivate the consumer to use this service? How should it be presented? What are the important factors? What can be gained from it for business? Of what real service can this be to consumers? (E.g. Emergency services save lives.) Or, what values become important to this services market?

Is it possible that the higher values are the ones that are really required in this environment? In a physiological needs example of an emergency situation, the implication is that the whole biological system reacts to the need and provides for the person in danger. At the higher levels, this may also be the case.

This research summarises results of other research on Mobile User needs and aligns them to the higher values or motivational needs as proposed by Maslow. Schwartz has also studied the needs of individuals and has proposed a universal set of ten attributes that characterise people across all cultures: Self-direction, Universalism, Hedonism Stimulation, Achievement, Power, Benevolence, Security, Conformity and Tradition (Lindeman and Verkasalo, 2005). (A summary of which is presented in Table 5, in Appendix A). Incorporating the business model to user needs aligned to higher values leads to the structural elements presented in Table 4 below.

Social values include elements of self-esteem and social acceptance and these can, to a certain extent, be interpreted as higher values. The values of Maslow's

Hierarchy of Needs are approximated, in Karamchetty (2005), and the general sentiment is in keeping with trends of world peace and a holistic systems view.

Table 4: Deducing the required business structure

Needs/Values	Structural elements	MLS Consumer need
Self-actualisation		Action at a distance
Esteem		Esteem
	Firm	Personal attention
Social Acceptance	Societal groups	Social needs
Safety	Regulatory groups Consumer groups	Privacy Security
	Consumer groups	Aesthetics
Basic needs	Industry groups: Technical standards Design standards	Ease-of-use, Location Context

The process of deductive reasoning is now employed to obtain the model necessary to support the consumer requirements Mobile Location Services. The reverse inductive process leads from the general deductive propositions to the particular deductive conclusions of a model. From the literature review, it has been shown that social values, ease-of-use, usability, and device aesthetics, among others, can be facilitated by the collaboration of technical standards bodies and other industry experts in the field, thus these needs will probably be met by an element of the structure denoted as Industry Group.

Thus, Table 4 shows, by deduction, that each of the consumer requirements for Mobile Locations Services could be modelled on the business model elements represented in the second column. The elements can be arranged to resemble the business models literature reviewed.

The following business model is presented as one necessary for enabling higher values for users of MLS.

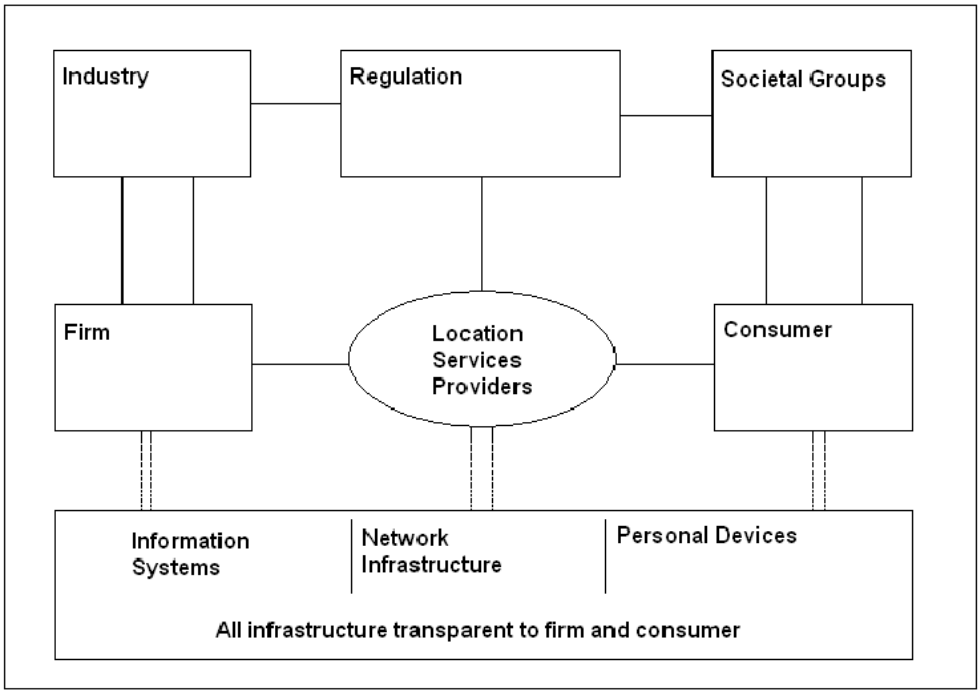

Figure 2: Location Services Business Model

Figure 2 illustrates the elements that make up the business model together with Societal Groups and Regulatory bodies. Note that the Business Model on its own would have elements pertinent only to the firm. The figure is modelled on Poel et al's (2007) Business Model for Digital Content which does not take into account an Industry level.

Figure 3 illustrates the Higher Consumer Values dimension incorporated into the business model and situated in relation to the elements that will make for their attainment. The actors in the industry thus will have a conceptual tool on which to base their relationship. The details of the Business Model should lead to this concept being operational.

The Local Threat shown affecting firms, is the effect discussed in chapter 2.4.4 under the heading Strategy Aspects.

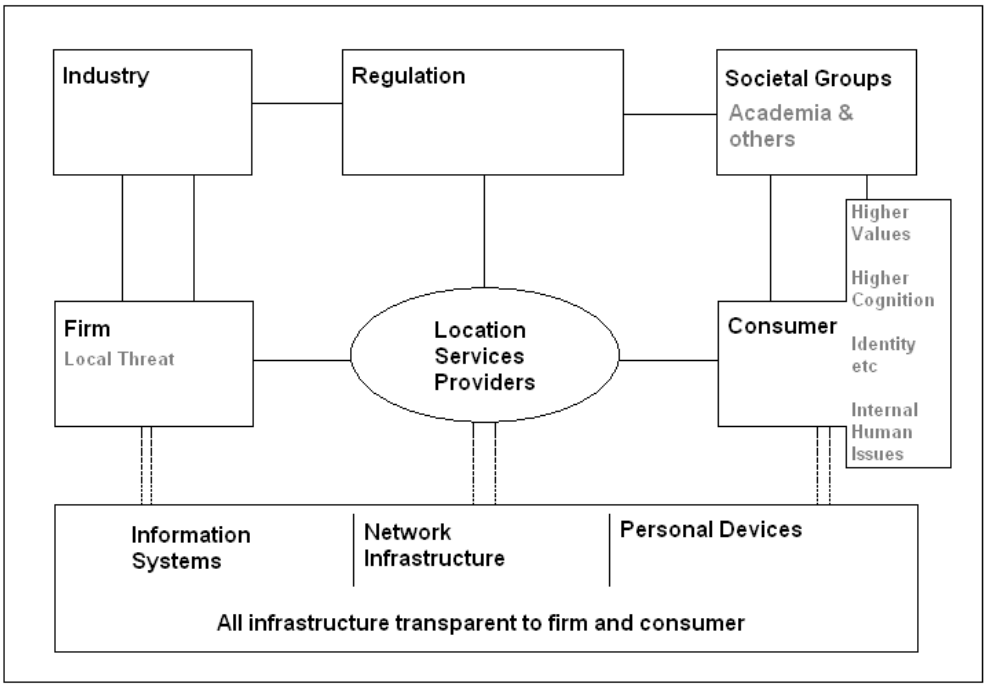

Figure 3: Location Model with Higher Consumer Values

4.3.1 Relationship between elements

The relationships between elements and actors should be modelled along the following lines:

1) Consumers make demands and the profile of consumers evolves naturally over time. Their inputs are to firms' knowledge-gathering systems and to societal groups.

2) Firms are consumer services agents. They also interact with all other firms capable of providing the required services. This partnering could become dynamic and spontaneous as the model evolves. Firms could eventually become the ones bidding amongst themselves and against each other for consumer business.

3) Industry maintains the Quality of Service (QoS) Agreements required in the locality of the Regulator.

4) Regulation maintains policy of the local system and the social groups and counterbalances the power of the Industry Consortia.

5) Societal groups are to gather feedback and remain cognisant of higher values.

6) Networks and technology are to transparently satisfy the Service Level Agreements of Firms and Consumers.

The closeness of the interdependency of business and consumer are explained in (Vrontis and Thrassou, 2007) and depicted in Figure 4. They note that business has to attend to efficient adaptation and recognition of consumers' wants. They also recognise the importance of brand since brand is what affects perceived value. There is also reference made to Higher-order Needs of consumers, which are interpreted as being synonymous with the Higher Consumer Values referred to in this research.

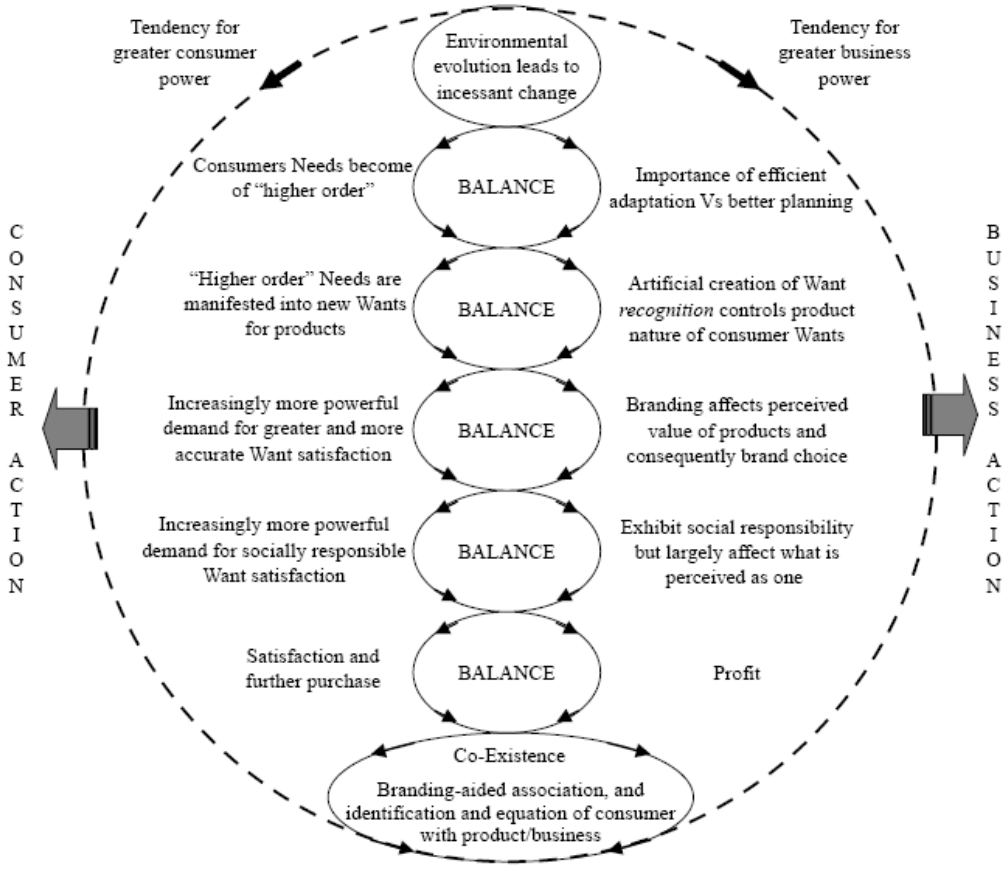

Figure 4: Business-Consumer Relationships (Vrontis and Thrassou, 2007)

4.4 Results pertaining to Research Question 2

The second research question concerns the Strategy and Organisational Aspects that need to be taken into account when addressing the Mobile Location Space. The results are as follows:

4.4.1 Collaboration

The mechanisms of organisational and strategy aspects are those normally applied to other technologies and especially, those practices applicable in new technologies, the Internet and mobile technologies. In the literature, with respect to the Mobile Location Space, there is no specific reference made to such aspects - possibly because of the early stage of development. However, a major theme regarding this stage of development and the nature of the technology is collaboration. This is especially so given the perspective adopted in this research in its search for possibilities for structuring an environment conducive to the attainment of higher values.

A collaborative effort between all local parties involved is suggested in order to have a unified stance on how to interface with the public. This collaborative effort may include individual firms, industries, regulators and consumer groups.

The model proposed includes collaboration from all relevant stakeholders. The collaboration implied in the model including regulators and societal groups may serve to protect the interests of both industry and society.

Collaboration has as objectives to:

1) Achieve collaboration between authorities and business and consumers (see Katos and Adams, 2005).
2) Develop an acceptable code of ethics for interaction with the consumer (see Bindé, 2005).
3) Coordinate, from a business forum, the stance that industry and firms should hold in the relationship. Thus businesses will have a common reference point from which to address relevant issues.

4) Ensure compliance with local privacy and security standards and norms in order to instil user confidence and trust.

Effective collaboration is usually the case in non-competitive environments such as non-governmental, charitable and humanitarian organisations and as such may not be the best possible solution in industry which is competition based. Here, it is assumed that ‘best’ implies the maximum possible progress for the smoothest overall transition to the next evolutionary level of all concerned. This study intends to advocate the inclusion of a humanitarian aspect into industry as it was possibly never meant to be exclusively competitive, devoid of ethics and morals, or higher values (Young, 1997 and Alvey, 2000). If business has not taken it into account as yet, the market will move to bring about this condition, and MLT may be the technological evolution that makes this manifest. Herein lie the uniqueness of MLT and the justification for a structure premised on well intentioned collaboration.

Recognizing that the benefits of the process are for the consumer in general and that the objective needs to be consumer driven, the solution arrived at will be decided by consumers and will therefore be accepted and sought after by the public.

Well intentioned collaboration however, is difficult to achieve, especially when influential businesses are involved. A solution, even if consumer-driven, could only be arrived at if all parties cooperate. The political forces should be balanced.

Collaboration is thus a means to gain the necessary trust in the processes of MLT by the consumer market and the industry stakeholders. Additional reasons for suggesting cooperation relate to the fact that the organization and applicability of the technology is not inherently suited to control by a single entity. Poire and Sabel (cf. Faulkner and Campbell, 2003) showed that clusters of companies within regions had alternative competitive advantage, and complementarities of processes and capabilities. Clusters have also been touted as one of the ways in which to leverage competencies (Porter, 1998). The Location Business Model proposes a type of local cluster which is made up

of a concentration of companies and industries in a geographic region which are interconnected by the markets they serve and the services they provide.

4.4.2 Strategy in the Location Space

For the Consumer Focus that is being advocated, the study provides a view of the important issues regarding the environmental changes that are likely to occur and clarifies the strategic concerns that need to be addressed.

On the part of firms, Infrastructure Strategy considerations are minimal at this introductory stage of development since firms do not control any aspects of the infrastructure technology. At least at present, the network operators make infrastructure decisions.

Strategy considerations that firms should take into account are:

1) The importance of information or Knowledge Systems and strategic issues related to it.

2) Recognition of environmental change and the need for a strategic stance.

3) Knowing the importance of consumer orientation in this space and how to approach the consumer.

4) Aligning all three: knowledge systems, strategy, and marketing to the consumer (see Hamel and Prahalad 1994; Prahalad 2004, and Kaplan and Norton 2006).

5) Developing competencies and knowing when to enter this market.

6) Being open to diverse partnering and integration into various value networks and realize the resulting benefits.

The general outlook on MLT is currently changing as market research firms and telecommunications carriers begin to consider service deployment more seriously.

4.5 Summary of the results

This research has presented adequate tools with which to conceptualise the process of making Location offerings to semi-virtual consumers. Additionally, it has been shown how this technology should be viewed from an industry perspective as well as from the point of view of individual firms that may choose to enter into this technological space. The need for collaboration has been emphasized, indicating the importance of receiving the validation of regulating bodies, and noting the way in which public knowledge of this validation gains societal acceptance.

The wireless organisation has become a reality, but success requires a thoughtful mobility strategy closely tied to business and consumer values. It is extremely difficult to process the information of the Location of a consumer, as it would imply more complex information system processes as well as more complex business system processes.

The decision to enter the Location Space may not be simple. Each business would have to weigh the situation independently. Firms that think Location is or will be significant to their business, should adopt a Location Strategy to create a market presence, to make gains from their positions as cost leaders or to increase their differentiation. They can only pursue both cost leadership and differentiation if they are the only firm in their industry to adopt Location technology. If they are to enter the Location Space, then they should do so first but with sufficient capabilities to satisfy quality expectations.

Javalgi et al. (2004:469) argue that “The next evolution of firms … should follow the strategy of […] meeting the needs of the consumers. The focus will be on efficiency and collaboration [and] companies may merge together, broaden and deepen their product offering projecting an image of size and strength, creating credibility and reducing uncertainty in the mind of the consumer”.

Many different actors are involved in the Location technology space. The Model implies collaboration as a means to bridge discontinuities with consumers, introduce a mechanism for business harmony and potentially contribute to

society. Actors' roles have been sketched, their positions relative to one another marked, and their place mapped in relation to the rest of the world, economic and societal players, and the larger system entities.

CHAPTER 5: DISCUSSION OF THE RESULTS

5.1 Introduction

In this chapter the results obtained are explained.

The specific solutions of the previous section serve to provide the structure necessary and the strategy aspects to consider. Here the solutions are placed within the framework conceptualised to be inclusive of the holistic view needed to account for the higher values perspective of this research.

5.2 Literature Used

The quality of literature used is reflected in the strong bias towards academic works. Reference is made to the research presented in previous chapters and the literature review.

5.3 The Business Model Structure for higher values

The details of the technology are complex and have not yet been mastered by the proponents of the various interrelated technologies.

A model in accordance with Osterwalder et al. (2002) for Mobile Location Services in Consumer Environments was advanced. Given the holistic view needed this could possibly be referred to as an Industry Model as it addresses an industry level and is inclusive of industry, policy and society in addition to business.

5.3.1 The Location Space Industry Model

There is a need to direct this to the Industry level for the following reasons:

1) This topic needs to be addressed for the public as a whole and helps conform to the norms of society, as the technology addresses the Individual
2) The issues of Privacy, Security, and Trust are only likely to be achieved by national laws enforcing the strict levels demanded of those providing the services and that will be accepted by the general user public
3) Collaboration is required to engage industry for the larger social benefits and not only for financial returns
4) The nature of this technology requires intensive collaboration between all stakeholders, societal groups, government and technical associations such as standards bodies

The Industry level provides the positioning of this technology in the social structure, but does not indicate how this technology could be implemented by providers of services to the consumer. The Model also positions the firm and explicates their role and the important technological aspects for them to consider. It delineates those aspects and indicates how they should be viewed and acted upon within the context of the industry and with the purpose of providing a congruent service and image to the general consumer public. Such detail does not form part of this conceptual model.

5.4 Organisational and Strategy Aspects

Organisational aspects were presented in the previous chapter and the strategy aspects are explained here.

5.4.1 Strategy in the Location Space Explained

There must be an emphasis on the importance of technological change, anticipation of those changes and preparation for their inevitable occurrence. The literature agrees that one of the most important issues facing business is that of change (see for example, Hamel and Prahalad 1994; Hamel 2000, and Ohmae, 2000). The rate of technological change is accelerating and business and society are unable to keep pace. Mobile Location greatly helps advance the

sales force (Clark 2006, and Desisto 2008), marketing (Rashid et al. 2008), and services (Maoz et al. 2008). Economic progress is augmented by the use of this and other technologies by state and private enterprises (Marshall, 1920) and the benefit of innovation to an economy was even recognised by Karl Marx, a vocal proponent of communism - which may be interpreted as a non-innovative socio-economic system, - and Joseph Schumpeter (cf. Fagerberg et al., 2006). Schumpeter distinguishes five types of Innovation: 1) products 2) new methods of production 3) new supply sources 4) exploitation of new markets and 5) new ways to organise business. He holds that the nature of innovation is systemic.

The proposed solution consisting of the 'framework with collaboration' is a means to organise business and markets that will be created by the technology. Since the nature of the technology is innovative and disruptive, it will cause a systemic impact on business and society. The argument for the importance of society observing a unified stance from business is justified by Van de Ven's (1999) view that innovation, as a process of firms, is embedded in the broader framework of society. He also states that "the innovation journey is a collective achievement that requires the key roles from numerous entrepreneurs in both public and private sectors" (Van de Ven et al. 1999:149).

5.4.2 The Framework

The proposed framework provides a perspective on:

1) How to think about Location Technologies
2) The importance of paying attention to the approach of a semi-virtual consumer
3) The importance of the Strategic Alignment of all the organisations' activities

The point of view of industry is required since new industries will be created (Watson et al. 2002, and Srivastava, 2004) and the intervention of current industry and policy and/or regulatory bodies is necessary. There is also the need for a common point of reference for the consumer public.

a. *The Industry View*

The industry view can be interpreted to be the structural perspective that such a framework should take.

The Elements of the Framework for the Industry view are:

- Consumer directed, Market Orientation
- Ubiquitous and Location Systems
- Uniform Publicity

i. Consumer Orientation

The consumer should be the input that directs the efforts of business. Ideally, cooperative consumer interest groups situated in local regions should be small enough to address the individual needs of each consumer. This will be very difficult but the risk of alienating individuals and groups should be minimized. With time the information base will inevitably be created but the goal is to gather this information with the consumer's consent, and by agreed standards of interfacing with them. Consumer participation builds trust. This takes into account the evolving consumer, individual and society.

ii. Ubiquitous Location Systems

The term Information Systems is not used here to distinguish from the related concept in the present day terminology. Hardware, software and all aspects of the technical details of the ubiquitous infrastructure must be transparent to the user experience. All software would have to be current and the issues of versioning are best managed at the industry level. There cannot be problems of different versions of device software as is presently the case. There should be policies set in place to deploy the latest standards on security and user interfacing so as not to allow for doubt on the part of the consumer.

Notwithstanding whether control lies with network operators or individual firms, business decisions are independent of where the infrastructure is physically situated relative to the firm or where the control of the infrastructure lies. Strategic business decisions as to what is important and how to use this

information is assumed to be controlled by the firm effecting these decisions. Firms should not be made to feel that they are not in a position of control or that their decisions will not affect their futures, as some of the urgency is removed if firms relegate responsibility to the operators.

iii. Uniform Publicity

Industry needs to portray a unified stance to the consumer market. Members should share all the objectives of the collective. Rao and Troshani (2007:70) state that “It is vital that the nature of these services should also feature strongly in marketing communication campaigns”. Consumer confidence and eventual trust are the objectives of marketing in the Location Space. Although offerings may be local, the message should encompass the legislature under which offerings will fall.

b. *The Firm View*

The firm view can be seen as concentrating on the following four aspects of strategy.

The Elements of the Framework for the Firms view are:

- Core-competencies
- Alignment of all processes and IS, Marketing and Strategy
- Customer approach
- Market entry

i. Core-competencies

Core-competencies in this area of new technology seems to be an integral part of entry, progress and success in this field.

ii. Alignment

All Internal Processes need to be finely tuned and aligned with the overall Strategic Objectives of the firm. Systems should be connected to consumer systems if possible and integrated into the supply chain. There is a need for

feedback and response. Agents need to interact with consumer agents on the move and be aware of consumer context.

iii. Customer approach

The way the consumer or customer is approached will be crucial. Customers need to be approached with care, shown hyper-responsiveness when they make a request or react to an offer, and must be provided with the kind of positive experience that will foster a relationship beneficial to the firm. Given the ease with which they are able to switch to other known firms, non-response will result in a negative association with the firm in question. The ability to successfully deliver a positive user experience and earn trust is likely to augment perceived value, and potentially lead to “undreamed of opportunities” (Watson et al. 2002:344).

iv. Market Entry

Deciding when to enter the market will be important. Entry should be made when all processes are sufficiently aligned to deliver what’s expected or the result may not be favourable, either for the firm or the industry.

It is unclear in the Location Services space whether entering the market first beneficial, especially since the competition is not available in the persons’ interaction space. The firm will only see the effect on the bottom line. Entry is suggested only when the firm is able to do so with quality services and an appropriate approach. If a firm is reasonably sure that entering first into the Location Space, or if entering at all will destroy value, then it may indeed be more prudent not to enter, in order not to risk damaging the image of the company or the industry, if the timing is not right. If the company gets itself ready for the move then it should enter. However, the risk of moving late has to be viewed very carefully, and will depend on whether the early warnings can be spotted.

5.5 Conclusion

The Structure and strategy, the general perspective of industry, the stance firms should take and the risks they face were discussed.

There is a fundamental transformation occurring in many domains.

Organisationally there is a noticeable effect on the transformative possibilities in the area of costs. Great cost-savings and efficiencies can be achieved across the value networks which are highly likely to cause intense competition (Mumford, 2006) that will make the competitive landscape of the future barely recognisable. There is also profound transformation taking place regarding worker interaction, real-time collaboration tools, mobility and worker behaviour and motivational needs. Location technology potentially provides organisations with the possibility of accessing sensitive aspects of their customers and consumers, and if done well, this could augment brand value considerably.

Socially, in advanced economies, there is a tendency towards society possessing increasing power which creates a social effectiveness, and is transforming human interaction. This tendency provides a sense of social belonging and orientation as well as security, and may lead to ideas of world peace (Karamchetty, 2000).

For individuals, the transformation allows for personal communications to achieve a high level of personal effectiveness. Mobile Location Technology provides the user with orientation, which satisfies the need for security and a sense of belonging. It provides directions to many places, and points the way home. It probably holds solutions to the internal need for the broader concept of home (Annison, 2000), which many are in constant search of, as was evident from a friend's comment that her choice of online user identity – 'homewardbounder' – was indicative of her "looking for home, and never finding it". This is assumed to be a normal condition but it may be possible that this search could culminate in an attainment of a sense of home via the use of a technology such as MLT. The human condition can often be better understood through music, art or poetry than written texts, analysis or research.

The Spanish songstress, Amaral, probably echos the needs of many artists and none-artists alike with her lyrics (translated), ‘Wants to live, wants to feel … wants to run freely, and wants to find her place’. Mobile Location Technology could probably help her discover her physical place, which could be a step towards her finding her emotional, cognitive and spiritual place.

Personal effectiveness, particularly in terms of causing an effect at a distance via this technology, could be interpreted as the ‘conquest of remoteness’ as per Heidegger. This actuation at a distance could contribute to realizing ‘self-actualisation’, the pinnacle of the hierarchy of needs proposed by Maslow, even if only by facilitating individuals’ relation to the physical world and their mobility within it.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

By observing the confluence of diverse trends made possible by Mobile Location technology and recognizing possible negative effects, this study has attempted to clarify future trends, outline the importance of affecting factors and predict the future technological landscape.

This research has introduced the concept of a holistic model for the adoption of a technology. It has put forward the reasoning and motivations that lay foundations for actors to take their positions, and gives the general directions along which to align their purpose.

6.2 Conclusions of the study

It is believed that the tools are sufficient to the task of enabling businesses to correctly approach consumers in a highly sensitive technological context by being better informed and therefore less likely to fail. Collaboration between the actors is implied in the framework.

With respect to higher consumer values, it is suggested that the possible development of the human psyche and probable general improvement of the human condition, is important enough to warrant the additional effort required to explore the full potential of the technology. Regulations and society have been shown to be important aspects of the acceptance of technology and regulatory bodies thus have considerable responsibilities in this area as well.

As business can only work from the position which it finds itself, and cannot adopt non-profit models to enable this type of technological environment, practical ways for the creation have to be explored. At this time strategy is not related to competitive positioning or competition among firms because in this early stage of Location technology, competition is not yet an issue. Watson

(2002) advises managers to apply the positioning of their firms in the future location competitive space using Porter's industrial analysis. They should then try to find niches, differentiate or try to lead on cost. However, differentiation and cost leadership are not necessarily exclusive strategies within innovative technologies as Kim and Mauborngе (2004) suggest in their Blue Oceans Strategy. Cost may turn out to be a very important factor in ensuring survival in the market in the first place. The value network has to be spanned; partners and integrations made (Javalgi et al. 2004) in order to gain additional benefits, and above all, superior consumer experience must be delivered (Kotler, 2002; Prahalad, 2004).

6.3 Recommendations

For the Mobile Location Services industry, the Framework presented should serve as a model for identifying relevant players and structuring relationships.

With regards to Firms, management should carefully examine this new space and potentially new rules of engagement and take care to select the appropriate Business Model for their firm as competition will likely be more intense in this technology space, and inter-firm partnering of a much more complex nature.

The findings suggest that firms, particularly consumer-facing enterprises, should consider entering the Mobile Location Services space, however, that they should do so only when they are certain of their ability to meet consumer needs effectively.

6.4 Suggestions for further research

For further research the issue of context must follow the development of Location Strategy and is particularly relevant to the stage when services are actually implemented and sold to users. It is important to recognize however, that it is the knowledge of context that will shape service design.

This work has been a conceptual study and provides a Framework with which to understand the topic. A Business Model by which to structure business

relationships was also outlined. However, extensive in-depth research into the revenue details of the proposed model is needed as it is presently by building the services model from solid business case revenues that could make for successful implementation of the model.

Location Technology currently is at the level of mobile guides and physical points-of-interest, and is yet a far distance from higher values. Much research can be done in this area.

A general rethink of the entire system and approach to profits, the self-interested goal assumption and the need to incorporate a necessary wider more holistic view of human activity needs to be pursued.

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APPENDIX A

Mobile User Values high to low.

Table 5: Mobile User Values high to low.

Source (Maslow, 1998)	(Lindeman and Verkasalo, 2005)	(Pura, 2005)	(Rao and Troshani, 2007)	(Venkatesh et al, 2003)	(Nysveen et al. 2005)	(Kim, 2007)	(Jih and Lee, 2004)
Values	(Shwartz Values)					m-Loyalty	Trust
Self-actualisation	Self-direction	Social	Social Influence	Personalisation			Valuing Friendship
Social	Universalism	Emotional					Work achievement
	Hedonism Stimulation	Conditional	Emotional		Enjoyment	Enjoyment	Enjoying Leisure
Esteem	Achievement		Image		Expressiveness	Playfulness	Fashion
	Power		External influence		Peer pressure		
Security	Benevolence		Innovativeness	Relevance			Service & Quality
		Epistemic	Knowledge	Context/			Information
Basic needs	Security	Convenience	Security & Privacy				Convenience & Privacy
	Conformity	Monetary	Economic				Safe Transactions
	Tradition		Usefulness		Usefulness	Usefulness	Shopping utility
			Ease-of-use	Ease-of-use	Ease-of-use	Ease-of-use	

APPENDIX B

Consistency matrix

Research problem: To conceptualise a holistic framework for achieving higher consumer values through the adoption of Mobile Location Services in the Business-Consumer domain and to describe organisational implications.					
Sub-problem	**Literature Review**	**Research questions**	**Source of data**	**Type of data**	**Analysis**
Suggest the needed structures for establishing a framework for the MLS Industry that will achieve higher values.	(Ballon, 2007) (Hawkins and Ballon, 2007) (Methlie and Pederson, 2007) (Osterwalder et al. 2005) (Pateli and Giaglis, 2005) (Poel et al. 2007)	What is the structure of the business model necessary to support higher values using MLT in the B-C domain?	Research	Qualitative	Inductive-Deductive Method.

Research problem: To conceptualise a holistic framework for achieving higher consumer values through the adoption of Mobile Location Services in the Business-Consumer domain and to describe organisational implications.					
Sub-problem	**Literature Review**	**Research questions**	**Source of data**	**Type of data**	**Analysis**
Indicate any organisational implications to be considered.	(Hamel, 2000) (Hamel and Prahalad, 1994) (Kaplan and Norton, 2006) (Prahalad, 2004) (Porter, 1998) (Rao and Troshani, 2007) (Stewart and Pavlou, 2002) (Watson et al. 2002)	What are the organisational and strategy aspects to consider?	Research	Qualitative	Deductive Method