Publisher: Asian Economic and Social Society
ISSN: 2225-4226
Volume 2 No. 11 November 2012.

Theoretical Issues on Contemporary Methods of Estimate the Lifetime Value of Hypermarket Business: Geospatial Approach as New Method

Abdul Manaf Bohari (School of Business Management, UUM College of Business, Universiti Utara Malaysia)

Ruslan Rainis (Professor in GIS, School of Humanities, Universiti Sains Malaysia, Malaysia)

Malliga Marimuthu (School of Management, Universiti Sains Malaysia, Malaysia)

Citation: Abdul Manaf Bohari, Ruslan Rainis and Malliga Marimuthu (2012). Theoretical Issues on Contemporary Methods of Estimate the Lifetime Value of Hypermarket Business: Geospatial Approach as New Method. Journal of Asian Business Strategy, Vol. 2, No. 11, pp. 250 - 261.

Journal of Asian Business Strategy, 2(11): 250 - 261

Theoretical Issues on Contemporary Methods of Estimate the Lifetime Value of Hypermarket Business: Geospatial Approach as New Method

Author(s)

Abdul Manaf Bohari
School of Business Management, UUM College of Business, Universiti Utara Malaysia

Ruslan Rainis
Professor in GIS, School of Humanities, Universiti Sains Malaysia, Malaysia

Malliga Marimuthu
School of Management, Universiti Sains Malaysia, Malaysia

Abstract

The business profitability is an important issue for the hypermarket business around the world and vast literature was found on its measurements, model, and approaches of studied. In general, related literature showed that various methodologies have been used to estimate the profitability via specific model where dominating by financial and accounting based instrument with specific aims on maximizing the customer lifetime value (CLV). In fact, the measurements that have been used are arising some issues on theoretical part of the CLV estimation which it has faced some problem regarding customer evaluation as a centre part of CLV. Traditionally, financial or accounting variables has been improved and reused in different ways continuously, where the method it self in is still stagnant as before. The objective of this paper is to overview the theoretical issues of contemporary method based on the CLV related model of financial and accounting of estimating hypermarket profitability. Secondly, this paper is highlighting the geospatial method as new way for estimate the CLV of hypermarket. In future, the potential use of geospatial method will be brings new hope on better predication the CLV which considers non-financial variables as compared to traditional CLV method.

Keywords: Contemporary methods, lifetime value, hypermarket, Geospatial approach

Introduction

Traditionally, the field of customer lifetime value (CLV) estimation has dramatically emerged as an important area of research in marketing. Beginning with work that started to consider the customer as an important asset of the firm, researchers touch on different views, as identified as CLV from firm and CLV from customer point of view. These traditional initiatives are important platform for extended research, specifically on CLV field, as important of managing customers as high priority assets. As a centre focused of CLV estimation, customer is important part where need to estimate precisely. According to Lenskold (2003) the value of retaining customers can be as much as 100 percent more profitable than acquiring new customers, yet acquisition marketing programs still tend to draw a greater share of marketing budgets. This is similar idea with by many scholars such as Blattberg and Deighton (1996); Berger and Nasr (1998); Carminati and Trouvé (2004); Venkatesan and Kumar (2004); Doherty (2005); Epstein *et al*. (2008); Graf and Maas (2008); Fader (2009); and Glady *et al*. (2009).

Recently, too many marketing managers fail to identify the most valuable customers and are either spending their marketing budget on the wrong customers or in the wrong channels of communication. The measurement of CLV should be able to guide marketing managers make three key decisions, as well as (i) which customers should they contact; (ii) what channel should retailers use to contact them; (iii) How much do retailer contact a customer. Typically, customer metrics such as Past Customer Revenue (PCR) and Past Customer

Value (PCV) are used to accomplish the task of identifying profitable customers. But these metrics are backward looking and do not provide a future picture of customer profitability (Venkatesan & Kumar, 2004). However, the PCR and PCV measurement never counting any variables that close related to customer in the marketplace. Beside this, the method of financial and accounting are widely used for many CLV related works to where it measures the profitability of hypermarket business, totally using traditional measurement of rate, interest, chuck rate, lease, and many more. Some of related works are found in Reinartz and Kumar (2000); Gupta and Lehmann (2003); Rust *et al*. (2004); Gupta *et al*. (2004); Malthouse and Blattberg (2005); Gupta *et al*. (2006); and Kumar *et al*. (2006).

Customer valuation has been discussed by several papers in the customer relationship management literature, for example Dwyer in 1997 discussed about CVL for supporting decision marketing support making; Berger and Nasr (1998) (CVL with focused on marketing models and applications); and Malthouse and Blattberg (2005) for answering the questions of ability to predict CLV. So far, financial instrument are core items of projecting CLV, as far customers engage with the business. However, some studies have criticized the CLV measurement, for some possible reasons. Reinartz and Kumar (2000) criticized the CLV demonstrated that a long life-cycle and the profitability of a customer were not necessarily related. While, Rust, Lemon and Zeithaml (2004) emphasized that CLV should focus on projected future financial return using the total value of the customer based. With regard to these works, most of these works are focused in using the financial or accounting method, just extending the previous version of CLV, and then, reused for projecting the results. Obviously, they are never considers truly new variables, especially spatial variables where it also has potential to in-enhance the capabilities of projecting retailers profitable customers.

The objective of this paper is to overview the theoretical issues of contemporary method based on the CLV related model of financial and accounting of estimating hypermarket profitability. Secondly, this paper is highlighting the geospatial method as new ways for estimate the CLV of hypermarket.

Customer as Major Issues of CLV Methods

Basically, customers are important intangible assets of any firms in the business, and for that, it's should be measures in long term projections. Although researchers have emphasized customer relationships and CLV, these concepts have had limited impact on the business and investment community for two main reasons: (a) they require extensive data and complex modeling, and (b) researchers have not shown a strong link between customer and firm value (Gupta & Lehmann, 2003). These two issues should be considers the location of customers as main stream for analyzing the customer relationship and CLV because geographical location is contained customers, firms and overall community related to the business. Using the financial or accounting model are fail to assessing the real contribution of customer because they are tied with spatial factor such as location, accessibility, and many more, as spatial factor has never consider in any work of CLV.

According to Peter (2010), there are sixteen business-critical reasons why a marketer should know the value of any given customer or segment - and the best way to understand customer value is to examine that value over the whole period of a customer's lifetime. Table 1 show six of sixteen reasons that should by the hypermarket to get clearer about the current need of CLV:

Table 1: The Six Business-Critical Reasons of CLV

CLV for different segments of customers Different segments and customer types have different CLVs. It follows that CLV could be used to calculate a changed customer profile. A company with an up-to-date data base could develop a system of defining CLV for individual customers and then use this form of index on a customer page. It could be to do with a claim, discount, invitation to an event etc. In addition, CLV could be used to decide whether to follow up on individual customers who have a higher risk of churn. It might also be used to trigger special services for new customers with a high potential CLV.
Market communication Nowadays, it's probably more than half of the communication budget that is wasted. This is odd, seeing that nowadays it is possible to precisely measure the results of marketing communications, especially when using direct marketing media like mail, the telephone and internet. A company can achieve much better results (such as awareness and image) by choosing target groups, communication channels, and even the message to be delivered using CLV.
Customer service Generally it is most profitable to invest in customer services in areas where there is the highest positive correlation with customer satisfaction. Services like hotlines, upgrading and invitation to events could be defined and targeted to customers who have the highest CLV.
Loyalty programmes The future profit from an investment in a new loyalty programme including the results of different forms of customer rewards (discounts, exclusive offers, special service, upgrading etc.) could be learned by calculating CLV, both with and without a loyalty programme. This could be further refined by calculating CLV as a result of two different programmes.
Managing the sales force CLV could be used to help decide which sales districts to focus on (what is the potential CLV in a given district?), how to allocate sales resources, how to reward sales agents (say a higher bonus for selling to customers with a high potential CLV or acquiring new customers with a high CLV), how to run sales competitions (say rewarding the sales agent with the highest number of total customers instead of the highest annual sales) and so on.
Complaint management If a customer complains about a serious problem, then a simple CLV index (or preferably an individual CLV score) will help front-line employees to decide what action to take immediately and how much to invest in solving the problem. The index (rating individual customers or groups of customers) might be shown on the computer call centre.

Source: Adapted from Peter (2010)

With regard to Peter (2010) as above, knowing the CLV of individual customers enables a firm to improve its customer selection, customer segmentation, and marketing-resource-allocation efforts as pointed out by Kumar, Lemon and Parasuraman, 2006). With a single view of the customer, according to Adam (2005), an organization can take the next step toward building stronger customer relationships, then executing more precise targeting and superior campaigns. Using a variety of analytical tools and processes to deeply analyze customer and prospect data, the company can conduct strategic market segmentation to understand its relative position in the marketplace; strategic customer and prospect segmentation to understand the behavior and value of customers; and tactical customer and prospect segmentation to continually improve marketing campaigns based on initial response. With regard to Kumar *et al*., and Adam, CLV can used for analyze

every single CLV for each customer, but it is not really enough for in-depth analyses of single CLV. This is because of single value of CLV is not related to geographical customer although believed that single CLV are effecting by many factors, both spatial and non-spatial factors.

Plainly, the value concept is one of marketing theory's basic elements where as identifying and creating customer value is regarded as an essential prerequisite for future company success. Nevertheless, not until quite recently has CLV received much research attention. Thus, ideas on how to conceptualize and link the concept to other constructs vary widely (Graf & Maas, 2008). Practically, in many industries, loyalty explains the differences in profitability among competitors more effectively than scale, market share, unit costs, or most other factors usually associated with competitive advantage as mentioned by Nunes and Johnson (2004). However, critically, the concept of CLV is lacking in used of understanding the spatial measurement as is never confirms about return on financial performance, too subjective in measuring the firm profitability, and cannot simply converted to financial value. In advance, CLV helps retailers to prospecting customer future CLV that contributes their firm performance and indicates future potential growth.

Criticised on contemporary method of CLV

Basically, Doherty (2005) explains that traditionally Return on Investment (ROI) calculations and justifications have involved the hard financial results of an investment. Many definitions exist but in general view, straightforward definition is for a given use of money or resources in an enterprise, the ROI is how much profit or cost saving is realized. These financial based ROI calculations depend totally on hard metrics, usually dollars spent and dollars saved or gained. A number of different techniques can be used to calculate purely financial ROI and some of these ROI calculation techniques include Present Value (PV), Net Present Value (NPV), Return on Investment and Internal Rate of Return (IRR). Again, as mention before, all of it is financial based method is based on monetary and accounting point of view.

Similarly, in traditional financial perspective, Gupta and Lehmann (2005) noted that CLV looks at a customer's value to the firm based on predicted future costs and transactions. It is defined as the sum of cumulated future cash flows discounted using the Weighted Average Cost of Capital (WACC) of a customer over his or her lifetime with the company. However, for most applications CLV is computed over the next 3 years of the customer's relationship with the firm and not his entire lifetime, the reason being nearly 80% of profit from a customer can be realized in the next 3 years.

Traditionally, companies are differentiating their customer based on service, either their satisfied or not satisfied with the services or not. Some of customer may consider themselves as "very satisfied" but rate their experiences as "excellent". In practical, the business continuously assumes that the customers are maintaining their satisfactions rates, although by time they are lose their customers in futures. So, this is the real problem related to estimating the CLV without using spatial based analyses, and still happened in the world of consumers. CLV based models, as well as the basic model discussed by Berger and Nasr (1998), Gupta, Lehmann and Stuart (2004), Venkatesan and Kumar (2004) and Glady, Baesens and Croux (2009); the Gamma model (Fader, 2009); and many more, the demand for used income as major instrument for predicting retailer future prospects continuously rise up and that for, CLV approaches were applied and modified by these researchers with hope to get more accurate and sharply results. However, Carminati and Trouvé (2004) found that information about customer profitability still not on the major priority for certain retailers, although at the same time they really need more insight information about customer behaviors, geographic and demographics. Thus, based on the works from Nunes and Johnson (2004) and Carminati and Trouvé (2004), customer value research must have consideration on the latest approach, includes geospatial approach.

The CLV valuation approaches, as well as the traditional financial approaches, such as Return on Investment (ROI), Return on Equity (ROE), price-earnings ratio, and many more are fail to modeling and linkages sharply, between relationship and CLV of customers, with the real location of customers. In addition, measures like CLV provide a forward-looking picture, but less is known about the factors that affect CLV and about the cost of maximizing CLV. Thus, evaluation of the usefulness of CLV and present it as a metric to understand customers and optimize the return on marketing investments have done by using rich customer transaction data from a large multinational firm (Venkatesan and Kumar, 2004). As opposite, geospatial approaches have capabilities in-modeling and visualizing overall the situation and activities related to customers value in the marketplace, such as customer relationship, customer interaction, customer behaviors, investment community, and many more. Thus, the important point is spatial approaches is the alternative in prospecting the precise locations of in the real environment of business.

Normally, the CLV is defined as the discounted value of the future profits yielded by a customer to the company. However, the issue is to predict the future profits when the timing and the profit of future transactions is not known, that is in a non-contractual setting. Actually, this already discussed by Lenskold (2003) identified non-contractual setting as one of the barriers for generating good results. Similarly, against, this researchers still stagnant with the financial based tools to estimates the company future profits although researchers knows that is not necessary to used it because of un-ability of financial instruments. In current market, pressure to get sharply precise results is highly demand. But, conversely, the use of CLV is still not compatible to produces relevant future results of profitable customers. This is supported by Venkatesan and Kumar (2004) that mention CLV has not considers real time based data from spatial and it's not covering several parts of customers. Actually, evaluation technique introduced and applied by some researchers is not accurate enough because never take the important variables from spatial environments into the valuation consideration. Factors that effecting the CLV and cost related to maximizing CLV never integrated into the models.

CLV is looks as the difference between what it costs to acquire, maintain relationship with customer, and retain a customer as long as they can, and the revenue generated from that customer over the customer lifecycle. Calculating and measuring the duration of lifetime is not simples, because of customer perspectives, believe and values are really different, effecting by internal and external factors surrounding the real environments of business. In another opinion, the main concept of CLV is the total customer portfolio, which contains various information and values. Thus, absolutely, it reflects the total customer value generated for the firm in the form of enhanced profitability. Within this context, maintaining long-term relationships are vital important, because of customers is likely to alter their behavior due to competitive factors in the marketplace and maybe change in their needs and wants, without any signals or signs. From study by Srivastava *et al*. (1998); Reichheld and Teal (2001); and Pauler *et al*. (2009), it look that the impact of customer-specific marketing expenses on customer retention and customer profitability. In general, results shows, from first-order dynamic panel data analyses, that the impact of targeted marketing expenses on customer dollar profit is positive for large customers. But, conversely, there is no effect for smaller customers. Thus, targeted marketing expenses seem to be a tool for relationship maintenance rather than customer development. In addition, targeted marketing is useful in retaining large customers that generate more profit.

During the last few years, marketing expenditures have come under increasing pressure, making it crucial to understand how marketing actions affect CLV (Gupta & Zeithaml 2006). The extension or even the merger of CV and CLV concepts may be able to provide the information that will lead to more efficient use of marketing resources. However, due to large gaps in the existing research, little is known about the actual link between CV and CLV. For example, the relationship between

marketing action and CV may be more complex than initially assumed, which is quite likely also true of other postulated relationships, including that between CV and the CLV components of customer acquisition, retention, and expansion; between CLV components and CLV; and between CLV and shareholder value. These latter relationships may, indeed, turn out to be nonlinear, as has been demonstrated for the relationship between customer satisfaction and CLV components. Furthermore, dynamic CV aspects have not been considered so far in this context. Berger *et al*. (2006) thus argue for implementing option theory into marketing research, but no empirical work has been done on the subject. This is an unfortunate oversight, as option theory would make it possible to incorporate CV shifts.

Practically, CLV models have long been used to focus direct marketing campaigns by allocating resources to those customers who are deemed to offer the most value to the company. Traditionally, customers are rank-ordered by their lifetime value and more marketing resources are targeted towards the customers with the greatest value. In Gopalan (2007), a framework for visualizing customer segments, called *Z-ranking*, is developed, along with a method for customer portfolio management, called the Life Time Value Perturbation Technique. Rather than viewing a customer's LTV as a quantity that is immutable, this framework adopts the point of view that the LTV can be perturbed, via application of appropriate customer management strategies. Through a series of 'What-if' scenario analyses, a firm can focus scarce resources on those investments that lead to the greatest increase in the value provided by a customer portfolio. The LTV perturbation technique is further embedded in a four-phase procedure that forms the basis for customer portfolio management, enabling the strategic marketer to continually identify and improve customer management strategies that lead to the greatest impact on direct marketing performance. But, sadly, research done by this scholar is not counting spatial information as main resources for prospecting the CLV of customers.

With regard to CLV and hypermarket business, Kumar *et al*. (2006) stated that knowing the CLV of individual customers enables a firm to improve its customer-selection, customer-segmentation, and marketing-resource-allocation efforts. While, Lao and Zhang (2007) mention that CLV is useful for estimating Customer Potential Contribution value (CPV); Glady *et al*. (2006) for Customer Loyalty Modeling, and many more. By taken these opinions, in this paper, the CLV model will develop based on geospatial method, so that it can to help the hypermarket or retailers to acquire and retain their most profitable customers, increase response rates, generate more revenue, and develop efficient marketing campaigns.

Technically, the calculation of CLV is straightforward, calculating as a net present value of the future cash flows of a profitable customer. CLV allows for product differentiation according to expected customer value in three different customer classification, as well as high, medium, and low-value customers. In that way, the retailers expected to gain substantial insight into marketing decision-making and they are able to determine an equitable of every single store performance. According to Pauler *et al*. (2009) the major problems faced by the management at supermarket chains is the determination of a fair and equitable assessment of individual store performance keeping in mind the variation in store features, competitive environment, and socio-demographic characteristics of the consumers facing each location. Specifically, in a densely populated highly developed urban environment, such trading areas have very high overlaps (90 - 95%) between stores, rendering the use of finite border models not only ineffective, but incorrect to use. So that, because of limitation of CLV in detecting spatial based issues, as arise by Pauler *et al.* (2009), it is important to explore another variables where as closely to spatial environment, such as location, lifestyles, drive time, and many more.

With some constrain in the method of financial and accounting, thus, developing new model that integrating spatial and non-spatial data is vital important to enhanced the performances of prospecting CLV of each customer where current factors related customer will accounting

on it. Therefore, geospatial or Geographical Information System (GIS) is one of the new approaches for enabling the retailer to prospecting more insight and accurate of profitability, compared to financial and accounting or any related model that lies on statistical and mathematical previously used by others researchers.

Geospatial method as new method of prospecting the CLV

Basically, Toppen and Wapenaar (1994) point out that a business activity like retail marketing is one of the most promising fields of geospatial application. In general, retail marketing is a question of demand (consumers) and supply (shops or shopping centers). Both aspects are easy to pinpoint to a geographic location and are therefore, it is interesting for performances any kind of spatial based data analysis using geospatial or geospatial tools. In the early phase of emerging geospatial in business field, the use of geospatial in retail marketing, mostly, was limited to mapping the results of marketing research. Nowadays, because of hardly change in geospatial technology, the mapping activity are become as basic requirement for retail marketing, and consequently, more and more analytical operations are performed within a geospatial environment. Some examples are the delimitation of catchment areas, the identification of retail sites, and competitor analysis, as mention in Zhao (2000); Environmental System Research Institute (ESRI) (2007); Pick (2008); and SAP AG (2008). Actually, for most of these operations, new tools had to be implemented within existing geospatial software and moreover, requirement for more powerful tools is a rise in retail marketing segments.

In the recent years, the application of geospatial in business has grown rapidly. Major retailers, automobile dealerships, video rental companies, media organisations, and fast food corporations are just some of the many businesses around the world that have discovered the value of geospatial. Thus, business strategists are finding geospatial to be an ideal tool for identifying and expanding markets, and increasing profits (Zhao, 2000). Moreover, in high platform business operation, geospatial are become more sophisticated to invest especially to small and medium sized business, because of it initial costs can be highly compared to estimates ones. Also, the tangible benefits of it capabilities can take several years to materialize in the real situations. In the one hand, the emerging of geospatial software in the marketplaces actually create more competitions among software vendors, and will motivate them to make better improvement in tools and application related to geospatial software. In the other hand, retailing will get the benefits in capturing and mapping their customer values, market segmentation, and any changes in the marketplaces. In the end, the retailers are be able to maximize the geospatial tools in prospecting their potential customers that will contributes highly value to their profitable or annual performances. In ESRI (2007), geospatial software notes as important software that can be apply to performance business based analysis, such as site and location, business continuity plan, facilities and equipments, retail trade area, and so on.

Recently, GITA (2005) mention geospatial is a sophisticated management, query and analysis tool that allows the users to identify display the geospatial relationships among related features. There are many generic questions that a well designed geospatial and integrated database environment can supply answers for specific question, including:

- Location: What is at a given location?

Data management is simplified when the user can quickly find out what exists at a particular location. The location can be described in many ways including place name, zip code, billing and street address, geographic coordinates, or by pointing to the feature on a computer screen.

- Condition: Where is it?

This is the reverse of the location question. Instead of identifying what exists at a given location, the user finds locations where certain conditions are satisfied.

- Trends: What has changed over time?

This actually can involve either location or condition and seeks to find the difference over time. Change is some this can be visualize by utilizing geospatial.

- Patterns: What spatial patterns exist?

These types of questions can get very sophisticated. For example, showing the spatial distribution of new business building permits and correlating this information with locations of existing community, including such things as schools, office building, residential area, police and fire stations, medical clinics, and many more to help determine if additional business premises are required to support growing areas within the community.

- Modeling - What if….?

These types of questions are posed to predict the consequences of proposed changes. For example, being able to model a variety of marketplace situations ranging from small shops to a hypermarkets and how the retail profitable effected by market environment, as well as customers, competitors, power of supply, and many more.

Technically, geospatial establish for as one of solution for handling and dealing with the character and structure of spatial and non-spatial data and usually its methods utilize for performing geographical based activities such as acquisition, data capture (analog and digital based), data organisation, classification and qualification, spatial based analysis, display and presentation, distribution and dissemination, management, as well as the objectives of GIS design and development in organization (ESRI, 2007). Conceptually, geospatial is a synergism of various disciplines, includes geospatial, computerised databases, applications development, computer science, graphical processing, visualization presentation, cartography, photogrammetry or air-photos, statistics, modeling, remote sensing, and many more. The almost important view is that applications of geospatial actually well develop as solution for the real-world problems include any kind of the objects related to geographical based events, as mention in GITA (2005). So, this would encompass the fields of natural resources management, un-natural resources creation, resources capacity planning, decision making, business and marketing, utilities management, and many more which cited in Pick (2008). Nowadays geospatial is used to managing and handling any field and research related to geographically issues where lifetime value is one of spatial issues.

Traditionally, CLV model was established and applied for estimate customer lifetime value, in various areas. Surprisingly, CLV model never operationalize in the real place, which is refers to physical environment of marketplace. Every single value of CLV is being able to mapping into the exact location, specifically in where customers located. This is important to ensure the retailers may get CLV in geospatial views.

Future prospect of Geospatial method

In most recent CLV research conducted, as mention before, they are successful to predicting CLV value and identified which customer are high in CLV and ones are low in CLV by using CLV calculators such as Model MAX introduce by ASA; The HBS Toolkit Lifetime Customer Value Calculator (Harvard Business School); and Customer Lifetime Value Calculators (VOX). However, an even more challenging issues with concerns how to turn unprofitable customers into profitable ones, especially using location as baseline. Actually, this would require knowledge of why certain customers behave in a more profitable way than others in specific location because different locations of customer almost have different level of CLV. In other words, what do profitable customers actually do which distinguish them from less profitable customers? Although customers have same level of monthly incomes, housing and demographic background, but it still difficult in analyze and differentiate profitable and un-profitable customers, because of differences in environment of market location. While the present study does not provide a rich understanding of this issued, it does suggest that spatial variables as new variable to ensure to be explored in more depth regarding CLV view, especially from the side of non profitable customers. Thus, it is important to explore the potential used of geospatial platform where it has offers more practical used of both financial-accounting and spatial information as discusses before.

Despite above mentioned disadvantages of CLV, geospatial will become as important technology in business field and some of new trend emerging in the markets, such as enterprise geospatial, web-based geospatial,

mobile geospatial, and many more whereas become more friendly, with integrates it function with the business functions. Overall, the industry revenues are estimated in the range of $20 billion, with a further estimated $40 billion in government spatial data collection. The main components of the industry may be divided into geospatial software and add-ons; geolocation technologies; and web-based enterprise-wide applications and infrastructure; and spatially-enabled enterprise database products (Pick, 2008). While, David and Morris (2005) noted that geospatial software worldwide revenues from leading vendors is contributes about $1,964.7 million in year 2004. Specifically, Daratech estimated the total geospatial industry and services in 2004 at $8.5 billion, with a somewhat lower services component of $6 billion. It includes specialized spatial hardware vendors with revenues in 2004 of $650 million (Daratech, 2004). With regard to these data, geospatial is future trends where possible to use continuously in future study as well as it growth in the current market.

In the real market, interest in the capabilities of geospatial for marketing analysis is growing dramatically. Similarly, Toppen and Wapenaar (1994) described the various kinds of geospatial applications for marketing research. So, geospatial identifies as application that can help to answer a number of CLV related questions, such as:

- Where are customers located?
- What are characteristics of buyers in the marketplace (market segmentation, classification of residential areas)?
- Where are Retails competitors located?
- What is the potential turnover in a region for product?
- What market share can expect for every single retailer?
- Where should Retailers locate their new branch?
- Should Retailers expand an existing branch? Or close the others branch?
- How should Retailers promote their product?
- Where and how should Retailers advertise their product?

In today's globalizing economy competition is getting more fierce and sophisticated. That means it becomes more difficult for products and services to differentiate themselves from other offerings than ever before. Many products and services face new competition from substitutes and from completely new offerings industry outsiders. Since product differences are closed at an increasing speed and many companies try to win the battle for customers by price reductions, products and services tend to become commodities (Recklies, 2006). The retailers can gain market share and thrive in a difficult economy if they clearly differentiate themselves from competitors (Janiak, 2009). However, the difficulty of analyze the location of customers as sources of competition is not easy to practice. This is because of mapping the competitive advantages and value of CLV on the spatial appearances and format has not applicable to any types CLV models. By taken these opinions, location is one of important factor that needs to integrate with CLV model.

In fact, geospatial is an important technology in analyzing the customer and CLV, but not really maximum utilization by retailers or business firms. Most of researchers such as Epstein *et al*. (2008); Baum and Singh (2008); Berman and Evans (2007); and many more noted that customer is crucial part that contributes to retailer profitability for a short and long term business life cycles. Moreover, others researcher, as well as Aeron *et al*. (2008), and Epstein *et al*. (2008) mention that by using CLV they can estimate contribution of every single customer to firm profitability for future prospect of business continuously performance. In addition, customer and CLV is interconnected activity and that is a reason why Glady *et al*. (2009) stress valuing customers is a central issue of any commercial activity. Furthermore, Gilbert (2007) stated that it is important to maintain CLV because it surely changes over the time. In perspective of competitive advantage, Bejou *et al*. Keiningham and Aksoy (2007) believe that understand CLV is the best way to gain the competitive edge in business.

Retail industry is a worldwide business and involved many customer, business and location in different country and value. Clearly analyses

of customer value can be produced by using geospatial technology and because of that, geospatial are considers as useful technology to helps retailer to penetrate the market and customer. Chen (2007) stress that the use of geo visualization system in the retail industry at micro-level, market, regional, and national scales. At the micro level, the measurement of the profitable operation of a leased retail space and indicates how the geo-visualization system could be used to support decisions relating to lease renewals, anchor tenant subsidies, mall access planning, and optimizing tenant mix. At the market level, geospatial used to view how an ethnic composition of businesses along the Greater Toronto Area's retail strips decreased over the 1993 - 2003 period. At the regional level, geospatial used to view how the geo-visualization application could facilitate the spatial analysis of retail sales by category across the entire regional portfolio of stores. At the national level, mapping retailer sales can be used for dominant metropolitan markets such as Toronto, Montreal, Vancouver, Calgary, Edmonton and Ottawa. In addition, geospatial enables retailers to employ buffer and logistic functions, derive new information from existing data, analyze, classify grids and map locations of attributes.

As summary, the monetary value of CLV generated from different components of either financial or accounting instrument where it was formulated as accounting or financial method. One of the most important components is customer itself where the data are acquired form customer database of the hypermarket. On the one hand, higher commitment to a company often leads to enhanced purchasing frequency, larger shopping baskets, lower customer price sensitivity, and a stronger resistance to counter offers from competitors. Some customers search less for competing product and service offers. However, on the other hand, non-monetary benefits also accrue and may contribute to CLV value. As implication, one of CLV disadvantages is it was not really counting non-financial instruments, as well as non-monetary benefits in the evaluation. Most of researchers are still investigates the best ways for in cooperating the non-monetary benefits into CLV calculations.

Conclusion

Overall, understanding market areas, trade area, and customers is critical to the success of any business and they always utilize projected CLV to estimate their future profitability. In reality, the business will face the huge competing with others business especially in prospering their customer market share. By using traditional model of financial-accounting to prospecting the CLV result, for example, the businesses are unable to identify if their trade areas overlap each other or cannibalize each other. This is because of traditional methods of CLV are unable to running under the spatial surface of geographical marketplaces and practically, the real result of CLV cannot generated as it in the real once. In the retailing industry on Malaysia, for example, one of the criteria in establishing hypermarket is to guarantee that there is no overlap in each hypermarket customer territory. It is because of that will creates another problem in future and the potential for cannibalization of any hypermarkets in nearest area. In addition, traditional CLV methods never have any ability to identify spatially all the retail trade area, customer segmentation, product distribution, and many more. Finally, the retailers need to considering geospatial as main platform for produce more precise result of CLV as it impact on future business prospects.

Prospecting the CLV of customers really need something news especially in approach and platform of projection. The hypermarket needs to prospecting their CLV because it will helps them in set up or re-examine the business models, deploy strategies to take advantage of their core competencies, and move ahead of the competition. By the way, retailers will get clear understand and started formulating the marketing strategic plan for seeking the opportunities and strategic risks especially from the real field of marketplace. This is similar to Janiak (2009) noted that opportunities exist at all times, but are accentuated when firms and industries are undergoing rapid changes.

References

Adams, A. L. (2005). Find and keep the customers you want: The customer insight mandate. Chicago: Accenture Inc.

Aeron, H., Bhaskar, T., Sundararajan, R., Kumar, A. and Moorthy, J. (2008). A metric for customer lifetime value of credit card customers. Journal of Database Marketing and Customer Strategy Management, 15: 153 -168.

Baum, M. and Singh, I. (2008). Winning the customer service battle. Chicago: A. T. Kearney, Inc.

Bejou, D., Keiningham, T. L. and Aksoy, L. (2007). Customer lifetime value: Reshaping the way we manage to maximize profits. New York: The Haworth Press, Inc.

Berman, B. and Evans, J. R. (2007). Retail management: A strategic approach. New Jersey: Pearson Prentice Hall.

Berger, P. D., Eechambadi, N., George, M., Lehmann, D. R., Rizley, R. and Venkatesan, R. (2006). From customer lifetime value to shareholder value. Journal of Serv Res, 9(2): 156 -167.

Berger, P. D. and Nasr, N. I. (1998). Customer lifetime value: Marketing models and applications. Journal of Interactive Marketing, 12(1): 17 - 30.

Blattberg, R. C. and Deighton, J. (1996). Manage marketing by the customer equity test. Harvard Business Review, 74 (July/August): 136-44.

Carminati, A. and Trouvé, O. (2004). The CIES marketing study leveraging customer insight to achieve high performance. Chicago: Accenture and CIES.

Chen, R. J. C (2007). Significance and variety of geographic information system (GIS) applications in retail, hospitality, tourism, and consumer services. Journal of Retailing and Consumer Services, 14: 247–248

Cronin, J. J. (1985). Determinants of retail profit performance: A consideration of retail marketing strategies. Journal of the Academy of Marketing Science, 13(4): 40-53.

Daratech (2004). Geographic information systems markets and opportunities. Cambridge, MA: Daratech.

David, S. and Morris, H. (2005). ESRI: Extending GIS to enterprise applications. Framingham, MA: International Data Corporation.

Doherty, M. (2005). Finding your spatial return on investment in local government. Intergraph Corporation: Mississauga, Ontario.

Environmental System Research Institute (ESRI) (2007). GIS for retail business. GIS Best Practice (Febuary 2007). California: ESRI.

Epstein, M. J., Friedl., M. and Yuthas, K. (2008). Managing customer profitability: Determine which customers are most valuable to your organization. Journal of Accountancy (Business and Industry). Harvard Business School: December, 2008.

Fader, P. (2009). Understanding customer lifetime value: Conceptual overview and implementation in excel. Pre-Conference Workshops.

Forecating Summit (2009). Hilton in the Walt Disney World Resort, Orlando, Florida. Febuary 23-25 2009. Retrived on March 30, 2009 from http://www.forecasting-summit.com/pre

Graf, A. and Maas, P. (2008). Customer value from a customer perspective: A comprehensive review. Journal of Financial Business, 58: 1-20.

Gilbert, S. J. (2007). How do you value a "free" customer? Research and Ideas. Boston: Harvard Business School.

GITA (2005). Business case development and return on investment methodology. In. A Practitioner's Guide to Business Case Development and Return on Investment Methodology for Geospatial Information Technology. Aurora: GITA Research Division.

Glady, N., Baesens, B. and Croux, C. (2009) "A modified pareto/NBD approach for predicting customer lifetime value", Expert Systems with Applications, Vol. 36, pp. 2062–2071.

Gopalan, R. (2007). Customer portfolio management using z-ranking of customer segments and the LTV perturbation method. Journal of Database Marketing & Customer Strategy Management, 14: 225–235.

Gupta, S., Lehmann, D. R. and Stuart, J. A. (2004). Valuing customers. Journal of Marketing Research, 41(1): 7–18.

Gupta, S. and Lehmann, D. R. (2003). Customer as assets. Journal of Interactive Marketing, 17(1): 9 - 24.

Gupta, S. and Lehmann. D. R. (2005). Managing Customers as Investments. Philadelphia, PA: Wharton School Publishing.

Gupta, S., Hanssens, D., Hardie, B., Kahn, W., Kumar, V., Lin, N., Ravishanker, N. and Sriram, S. (2006). Modeling Customer Lifetime Value. Journal of Service Research, 9(2): 139- 155.

Janiak, S. (2009). The age of transformation: A retail outlook for 2009 and beyond. New York: Deloitte Touche Tohmatsu.

Kumar, V., Lemon, K. N. and Parasuraman, A. (2006). Managing customers for value: An overview and research agenda. Journal of Service Research. 9: 87.

Lao, G. and Zhang, Z. (2007). A three-dimensional customer classification model based on knowledge discovery and empirical study. In K.C. Chang *et al*. (Eds.) (2007). APWeb/WAIM 2007. Berlin: Springer-Verlag, pp. 510 - 515.

Lenskold, J. (2003). Retention marketing profitability: ROI challenges influencing the retention versus acquisition debate. Marketing Profitability White Paper Series. Manasquan, New Jersey: Lenskold Group Inc.

Malthouse, E. C. and Blattberg, R. C. (2005). Can we predict customer lifetime value? Journal of Interactive Marketing, 19(1): 2 -16.

Nunes, P. and Johnson, B. (2004). Mass affluence: Seven new rules of marketing to today's consumer. Boston: Harvard Business School Press.

Peter, C. (2010). The 16 business benefits of Customer Lifetime Value. The Wise Marketer, February 2010.

Pick, J. B. (2008). Geo-Business: GIS in the digital organization. Singapore: John Wiley & Sons, Inc.,

Pauler, G., Trivedi, M. and Gauri, D. K. (2009). Assessing store performance models. European Journal of Operational Research, 197: 349-359.

Recklies, D. (2006). Effective executive. Tripura: ICFAI University Press.

Reichheld, F. F. and Teal, T. A. (2001). Loyalty effect: the hidden force behind growth, profits, and lasting value. Boston: HBS press Book.

Reinartz, W. J. and Kumar, V. (2000). On the profitability of long-life customers in a non-contractual setting: An empirical investigation and implications for marketing. Journal of Marketing, 4(4): 17 - 35.

Rust, R. T., Lemon, K. N. and Zeithaml, V.A. (2004). Return on marketing: Using customer equity to focus marketing strategy. Journal of Marketing, 68: 109 - 127.

SAPAG (2008). Maximizing store profitability with sap for retail: Levers that improve store performance. Retrived on January 28, 2009, from: http://www.sap.com/retail.

Srivastava, R. K., Shervani, T. A. and Fahey, L. (1998). Market-based assets and shareholder value: A framework for analysis. Journal of Marketing, Vol. 62 (January), pp. 2-18.

Toppen, F. and Wapenaar, H. (1994). GIS in business: Tools for marketing analysis. The Hague: EGIS Foundation.

Venkatesan, R. and Kumar V. (2004). A customer lifetime value framework for customer selection and optimal resource allocation strategy. Journal of Marketing, 68: 106-125.

Zhao, L. (2000). Integrating rank correlation techniques with GIS for marketing analysis. Geo Computation 2000 Sydney. School of Geography, The University of New South Wales.