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Today's Intelligence Banking

(Case study HSBC Thailand)

**“Think of BI as using data about yesterday and today to make better decisions
about tomorrow”**

(Business Intelligence For Dummies)



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Abstract

Title: **Today's Intelligence Banking**
(Business intelligence for retail banking industry)

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Problem statement

“What are the benefits and limitations of implementation of Campaign management system in HSBC Thailand”

Purpose:

To study how business intelligence work for banking business with a focus on campaign management. To Understand and learn how to analyze and get more insight customer profiles in order to customize and develop full cycle of campaign management by using the cutting-edge tools available in the current market. Moreover, the case study goes deep into each process of campaign management tools as one of the BI tools supporting marketing decision. In addition, the thesis also identifies benefits and limitations of campaign management system from the case study.

Methodology:

Most of the primary data will be gathered from the insight interview with the people who currently work in the thesis' scope areas. These areas include the sales and marketing from both banking and business intelligence solution providers. The primary data are partly collected by interview with the HSBC marketing department and product team to identify the problem challenging HSBC campaign management. Furthermore, the author will gather the secondary data from website to study the trend of business intelligence in the recent market and to understand banking industry in a global market compared with Thailand. The information from HSBC documents are also another important source for analysis of the existing campaign in the real situations.

Target audience

The people who involve implementation of business intelligence tools these people include the marketing team, business analyst and IT people.

Conclusion

Campaign Management System provides a lot of benefits to the company. It enables the organization to compete in the market in an intelligent way. After the system is successfully implemented, marketing team can design a better campaign for each cycle due to knowledge learnt in the past. The knowledge is extracted from raw data that was once difficult to analyze.

However, there are some concerns needed to be addressed. Without a proper use out of it, the system is nothing but a tool. The company and staff attitudes should turn from product centric into customer centric and deploy it across the enterprise.

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Oneta Pongsacharoennont
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List of abbreviations and definitions

BI: Business Intelligence

CMS: Campaign Management System

CRM: Customer Relationship Management

CRMS: Customer relationship Management System

NVP: Net present value

AOP: Assets oriented programming

OALP: Online analytical process

ROI: Return on Investment

HSBC: The Hongkong and Shanghai Banking Corporation Limited

BKH: Bangkok Headquarter

PIB: Personal Internet Banking Department

OTP: One Time Password

IVR: Interactive Voice Recognition

(Source: SAS white paper: The Total Economic Impact of SAS Marketing Automation 2004)

1. Introduction

Nowadays business intelligence concept is becoming a new trend that is widely accepted in various industries. For banking industry, BI tools have been using to support many business functions. Campaign management system is one of those powerful parts of business intelligence in serving marketing decisions. The creative uses of marketing campaign help the bank maximize the returns on investment such as retail banking and credit card business. This thesis will give the overview of how campaign management can help the retail banking in Thailand generate revenue and improve the operation effectiveness. The author has mapped the knowledge of business intelligence and campaign management from the literature studies and gathered the technology from the reality, from the primary data in the case study of campaign management in HSBC Thailand. Moreover, in the conclusion part the author also identifies the limitations and benefits of implementation of campaign management system. This chapter will give the background of the thesis along with the company profile. In the later part of this chapter, the choice of topic along with the purpose, delimitation and target audience will be presented.

- **Background**

In the world that rich of information, too much information has become a problem for management level in many companies. With flooded of information, it would be hard to extract the intelligence from those data and it would be even harder to make use of those information in the proper way. Therefore, business intelligence has become a wide spread concept that allows corporate to get more insight customer profiles. Together with business intelligence, data warehouse serves as a foundation to integrate customer information from proprietary database to the integrated analytical database which provides the customer single view. The single view of customers allows us to see our customers in many dimensions. Then the next step of decision making has been taken by many leading business unit.

This thesis studies business intelligence function with a focus on marketing automation and campaign management, one of the main functions of business intelligence in supporting marketing decisions. These functions include “Marketing Automation”. The goal of marketing automation is to automate the campaign process effectively. There are three functions of marketing automation “campaign and customer analysis”, “Campaign management” and “Centralized management and control of disparate systems”.

The campaign management concept would help a company to manage efficient campaigns by providing the analytical result as an input to develop and tailored-made the customized campaign for the specific customer group or individually. This thesis will study the case of HSBC Thailand, The bank has a tentative plan to implement the campaign management system in the year 2009.

- Choice of topic

The idea of business intelligence has taken more and more important roles in today's business process. With the interest in this new valuable concept, the author has personal passion to study around the business intelligence area. Along with the background in IT, the author had an opportunity to work in banking industry with HSBC Thailand for a year. The author sees the synergies to integrate the knowledge from the two interesting areas to serve business functions. Moreover, under the field of study focusing on International Marketing, the thesis topic "Campaign management for banking" seems to be a suitable topic for combining business intelligence technology with international marketing theories to serve marketing decision in banking business. In the current market, retail banking has become a more and more intense market nowadays. Campaign management system has played an important role in banking industry to differentiate their services by applying intelligence knowledge and customizing their offers to attract the target customers.

- Company profile

The company that the author choose as the case study of campaign management implementations is "The Hongkong and Shanghai Banking corporation"(HSBC Thailand) because HSBC Thailand has a tentative plan to implement the Campaign Management System(CMS) in the upcoming year (2009). In the period that the author writes this thesis, the company is currently working on the process to gather local requirements and limitation of CMS. Therefore, the result of the study would benefit both company and the author in studying CMS.

About HSBC Group

HSBC is one of the largest financial services organisations in the world. The slogan of "The world's local bank" is widely known around the world. Being the world local bank, HSBC has the international network in Europe, Asia-Pacific region, Americas, the Middle East and Africa. HSBC has a network comprised over 10,000 offices in 83 countries and the headquarter is located in London.

With listings on the London, Hong Kong, New York, Paris and Bermuda stock exchanges, shares in HSBC Holdings plc are held by around 200,000 shareholders in some 100 countries and territories. The shares are traded on the New York Stock Exchange in the form of American Depositary Receipts.

Through an international network linked by advanced technology, including a rapidly growing e-commerce capability, HSBC provides a comprehensive range of financial services, personal financial services, commercial banking, corporate investment banking and markets, private banking and other activities.

The HSBC Group has an international pedigree which is unique. Many of its principal companies opened for business over a century ago and they have a history which is rich in variety and achievement. The HSBC Group is named after its founding member, The Hongkong and Shanghai Banking Corporation Limited, which was established in 1865 to finance the growing trade between China and Europe. (The Hongkong and Shanghai Banking corporation 2004)

About HSBC Thailand

HSBC was established as the first commercial bank in Thailand in 1888. With access to global expertise and enriched local knowledge, HSBC Thailand provides a full range of financial services including corporate and institutional banking, global markets, securities services, trade finance, payment and cash management services to corporate customers, personal financial services and credit cards to a growing retail customer base in Thailand. HSBC is globally recognised for its high service standards, ethical practices and full commitment to corporate social responsibilities to benefit the local economy.

(The Hongkong and Shanghai Banking Corporation 2004)

- **Retail Banking Industry in Thailand**

In the year 2007 the retail banking industry has played an important role in the financial market in Thailand. Recently the retail banking in Thailand has grown rapidly since the financial crisis. “As banks, having learned the lesson of the risk concentration – began to shift their strategies to diversify their portfolios and revenues by making inroads onto the retail market segments” (Dr. Tarisa Watanagase, Governor of the Bank of Thailand)

In these recent years, the consumer loans have increased 20 percent annually while corporate loans have grown only three percent. Housing loans, personal loans and credit cards now play an important role in the banking system in Thailand. “Competition in the retail banking business has been intense, with more variety of product offerings and new delivery channels introduced to satisfy customer needs. Non-bank players have also been aggressively competing for market share in the personal loan and credit card market although with focus on people in the lower range of income groups.”(Dr. Tarisa Watanagase, Governor of the Bank of Thailand) Therefore most of the banks need to improve the service and increase the operation effectiveness. The banks in Thailand put the investment for reducing the operational cost and service delivery time to effectively manage. Those new banking tools such as internet banking, mobile banking, electronic money service along with modern operational process and risk management system in order to automate application process, credit approval process, and the efficient use of credit scoring models and credit information system have increased both number and value of usage for retail banking industry in Thailand.

The information by Dr. Tarisa Watanagase, Governor of the Bank of Thailand at Excellence in retail Financial service Convention 2008, Bangkok, 15-16 May 2008

- Problem statement

Problem statement: “What are the benefits and limitations of implementation of campaign management system for HSBC in Thailand”

- Purposes

The main purpose of this thesis is to give an overview of how business intelligence works in banking business with a focus on Marketing Automation and campaign management. The second purpose is to learn how to analyze and retrieve more insight customer profiles to customize and develop a full cycle of campaign management by using the cutting-edge tools available in the current market. This thesis also covers the process of how to get the valuable knowledge from using the Business intelligence concept in order to gain competitive advantages beyond the competitors in retail banking business.

As campaign management is considered as the heart of Marketing Automation, the business intelligence is a crucial part that supports marketing decisions. The purpose of the case study is to study on the implementation of campaign management system. The case study aims to investigate “How campaign management work in Retail banking in Thailand” and “To identify the benefits and limitations of implementation of Campaign management in HSBC Thailand”.

- Delimitations

In the study of this research, there are many limitations. The major one is the confidentiality of information. Most companies refuse to give information in these areas because the information about how companies manage campaigns and how they design their customer segmentation are considered as the strategic issues. Therefore, most of the companies keep these information confidential and refuse to revive the information around the thesis scope. The focal company in this case study also refuses to answer some questions in the interview. So the author gather the information about the BI tools form the vendors that provide these systems instead. Moreover, none of the bank in Thailand has been fully implemented the campaign management system yet. There is only one Thai bank that already starts the implementation process and will fully implement in the next year. However, This bank still refuses to give the information and informs that the project is confidential.

- Target audience

The main target audiences of this thesis are those who are in charge of campaign management project including IT people and banking people who are working in the marketing team or related to campaign management area, especially for implementation of Campaign management system.

The second group is anyone who are interested specifically in campaign management and marketing for banking industry, people who have problems with conducting campaign or students who are studying about the business intelligence concept focusing on how to use BI tools to maximize profit by supporting marketing decision.

2. Literature Review

In this chapter present the related studies form existing related literatures. The author describe the combined information from the literature studies beginning with the general idea of business intelligence and data warehousing, the two interrelated concept that support each other. Then the author presents the study of business intelligence deep into the specific part of BI tools, the marketing automation and campaign management. The “marketing automation” is the Business Intelligence’s part that supporting the marketing decisions. The marketing automation has been developed based on the world’s technology level. The existing studies have studied over the evolution of marketing automation and the marketing automation functions presented under the marketing automation in this chapter. Currently the world’s computer technology is able to support the marketing automation in the fourth generation. There three key functions of marketing automation include “Campaign and customer analysis”, “Campaign management” and “Centralized management and control of disparate systems”. As the heart of marketing automation is the effective campaign management, so that the last section of this chapter is the explanation of campaign management with the details of how campaign management work with the supportive environment.

- Business Intelligence (BI)

Firstly, let’s look at different perspectives of Business Intelligence definition.

“Business intelligence (BI) A generic term to describe leveraging the organization’s internal and external information assets for making better business decisions.”(Kimball&Rross 2002, p.393)

“Think of BI as using data about yesterday and today to make better decisions about tomorrow. Whether it’s selecting the right criteria to judge success, locating and transforming appropriate data to draw conclusions, or arranging information in a manner that best shines a light on the way forward, business intelligence makes companies smarter. It allows managers to see things more clearly, and permits them a glimpse of how things will likely be in the future.”(Scheps 2008, p.9)

Business intelligence include any system that turns transactional data into valuable insight information that helps people run their business more intelligent is called Business Intelligence. At the present, the term of business intelligence is still not formally defined yet. Different sources interpret different definitions in their own ways (Scheps 2008, p.9). But, at least, there is one thing in common about business intelligence. It represents a system that stands on top of operational system then extracts, transforms and loads data into various formats to support business process, especially in decision making. The system provides flexibility for user. It stores data at the lowest level of granularity so that users can see the report up to any level they require during analysis. Moreover, business analysts have quick, real-time access to all of the information without having to make special IT support requests. The structure will be designed to support the analytical process.

Business Intelligence has a wide variety of reporting selections. It uses OLAP technique to create 3 dimensional reports. These are reports that represent factual information by each subject area that users want to see such as sales performance, campaign response rate. Then decision makers can decide which activities they should do next to improve the performance.

Another type of Business Intelligence reporting is predictive report. This type of report uses data mining technique which uses statistical analysis to predict data. For example, the system can use product holding data of customers who own more than one product to analyze for cross sale opportunity. Or we can use product churn data to predict customers who will be likely to leave us soon. Then some marketing campaigns can be launched to make loyalty program.

Business Intelligence can be applied to use in many business activities. With a good use out of it, the system can help move the company into an ever more competitive environment. In the past, we make a decision based in an old-fashioned way, or recollection of data in the past or even guessing. With this technology, it enables us to make a decision based on fact, the company performance to cure the right point.

- **Data warehouse**

“Data warehouse is a collection of integrated, subject-oriented databases designed to support the DSS function, where each unit of data is relevant to some moment in time. The data warehouse contains atomic data and lightly summarized data.”(Inmon 2005, p495)

“Data warehouse the conglomeration of an organization’s data warehouse staging and presentation areas, where operational data is specifically structured for query and analysis performance and ease-of-use.”(Kimball&Ross 2002, p.397)

With data warehouse the customer information from operational proprietary database can be integrated to the analytical database or data warehouse that providing customer single view. As data is transformed from the operational environment to the data warehouse environment, it is also integrated. Data Warehouse and Business Intelligence is a couple that cannot be separated. With the data warehouse, business intelligence becomes a possibility. Without the data warehouse, business intelligence is just a theory (Inmon 2005, p.402). Basically, data warehouse is designed to store all information across enterprise to create a single version of truth. Data such as operational data or transactional data that is dispersed across the company will be consolidated and integrated. For example, if data of credit card and personal loan of retail banking business are stored separately, it is very painful to find out which customers hold both products.

The basic data warehouse architecture, it extracts data from operational data source systems then transform and consolidate to create a single view of data and then store into the data warehouse. The “Data Mart” which store information of each specific subject area will use data from data warehouse and then load and delivers reports to business users. As an end to end process, it can be seen that all of the information that end users see is definitely comes from data source system. The quality and

completeness of business intelligence reports depend highly on the quality of data source.

- **The Marketing Automation**

From the business intelligence and data warehouse, the advanced technology has change the way marketers operate their marketing activities with marketing automation. The marketing automation is another part of business intelligence designed to support the marketing activities. The marketing automation has developed along with the evolution of business intelligence over decades. The following paragraphs describe the evolution of marketing automation.

The Evolution of Marketing Automation

“In four decades, then, we have witnessed a shift from mass marketing – push as much product as possible to the world – to a targeted customer focus – identify”

According to the SAS white paper (SAS Inc. 2004, p.4) , from the originating of marketing automation in 1960s until today the marketing automation have evolved by leveraging the computer technology to overcome marketing campaign challenges. The development of marketing automation are recognized and divided into four distinct generations. The generations of Implementation of Marketing Automation:

The first generation of marketing automation

Marketing automation originated in 1960s but at the beginning the concept wasn't widespread accepted until 1980's. With the computer technology, in the first generation of marketing automation the marketer could efficiently target, segment and reach their customers. In the first generation, the solutions still based on the standalone systems. This means the data from each system has been stored in proprietary database.

“This generation operational point solutions, usually based on a proprietary database and standalone systems, improved the effectiveness of a simple campaigns with turnaround time of several months”(SAS Inc.2004, p.4)

The second generation of marketing automation

In the second generation the marketing automation took more focus on the cross-functional analysis and The campaign management have been considered with overall business process. “This generation of cross-functional solutions reduced the marketing department's reliance on IT, supported faster campaign turnaround cycles and made progress in integrating sales and service channels across all touch points”(SAS Inc.2004, p.4)

The third generation of marketing automation

In the third generation, data integration has taken the further step to support the Customer-centric view. With the customer-centric view the marketers could see the customer in single view. The single view of customer information provide and consistent and coherent view of the customer across the different channels. The data integration includes the integration across all touch point and sales force automation from call centre systems and electronic channels.

In addition, this further step of integration also refers to the ability to feed back the campaign management results to enhance the campaign management with the close-loop marketing.

The fourth generation of marketing automation

The fourth generation is the most advanced generation that the evolution could take a further step to create the in-depth customer intelligence.

“In the fourth generation of marketing automation is the critical underpinning for today’s merchandising environment, with higher expectations, pressure for faster turnaround at lower costs and narrower windows of opportunity.”(SAS Inc. 2004, p.5) As defined by SAS Inc.(SAS Inc. 2004, p.5) In this most advanced generation, marketing automation enhance many solution that intelligently serving marketing decision for marketers.

Firstly, with the advanced analytics marketing automation, marketers could turn business data (customer information) to customer intelligence at the right time. Second, in the fourth generation, the powerful capabilities have been introduced to serving the diverse needs. The capabilities for all marketing team (Business user - >Quantitative Analysts ->IT) to conduct their job in the right way depending on their roles , marketing automation could tailor the campaign to fit the customer behaviour deliver the right campaign to the appropriate segments or individual customer and optimise the customer contact.

Moreover, the systems be able to automatically triggers or monitor the customer state and allow the marketers to contact, retain or deliver the campaign to their customer at the right time. “Enable more opportunistic marketing than ever by responding to triggers that indicate a change in customer’s state, as delivered by demographics of analytics” (SAS Inc. 2004, p.5) . In addition, IT infrastructure introduced in this generation supports the current and future intelligence with the centralized data management and security. The smooth flow of data and create the most effective analytics.

Currently, we are in the fourth generation, the marketing automation in fourth generation could create in-depth customer intelligence pay off in many ways. The advanced marketing automation help marketing team building the strong relationship with customer to create long-term loyalty and maximize life time value of the customer by manage the campaign for pushing up-sell and cross-sell product to the right customer segments. These appropriate campaigns, include right deliver message, customized offer, and suitable communication channels that targeting the right segments, create the maximum returns on marketing initiatives.

Marketing Automation key functions

According to the functions of marketing automation defined by SAS 2007 (SAS advance marketing automation 2007, p.1). There are three key function of marketing automation.

The first one is “Campaign and customer analysis”. This key function aims to automate the marketing data. In order to analyze the customers and campaigns intelligently, the data should be gathered in closed-loop to create the self learned system.

By mean of intelligence, the closed-loop analysis would lead to the prediction of the campaign effectiveness.

The Second key function is “Campaign management”. According to SAS white paper (SAS Inc. 2004, p1) “At the heart of any marketing automation solution is the capability to effectively automate essential campaign process,” The goal of marketing automation is to automate the campaign processes. Those campaigns process management include the management of the operating campaigns, communication channels and tracking result back to generate the report for further analysis.

The last main key function is “Centralized management and control of disparate systems”. This key function allow marketer to integrate all data from different source to analyze and plan the campaign more effectively. By applying the customer-centric data warehouse, the marketers could create and plan the effective campaign with the cross functional view of data from the existing sources.

“The most advanced generation of marketing automation technology seamlessly combines these functions to produce a centralized, fully integrated environment for total marketing performance” (SAS white paper: Advanced Marketing Automation 2007, p.1)

- **Campaign Management**

As we study the marketing automation in the fourth generation, there are three main functions of marketing automations are “Campaign and customer analysis”, “Campaign management” and “Centralized management and control of disparate systems”. The three main functions are interrelated. These key functions are aim to support marketers in execution of effective campaigns, the heart of marketing automation. Therefore it’s important to understand “What is Campaign management”. The concept of campaign management is described in the paragraph below.

Campaign management system helps marketers to segment their prospective customer and specify the appropriate interaction with the individual. Customer may leave the companies due to different reason. With the Campaign management system the marketer would be able to define these customer group by identify the key field in database to select the customer group. After define the segmentation. Divided the group of customer, the marketers could design the offers and execute the campaign. When execute a number of campaigns the campaign management system allow the companies to handle collisions between the customer segments. “Over time the

effectiveness of the segments are evaluated, with refinements incorporated continuously (this kind of marketing is sometimes referred to as "continuous customer management")." (Therling 2001)

In conclusion the business intelligence with the supportive structure from data warehouse can create the various BI tools serving many business units in organisation. Banking nowadays, there are many BI tools for banking industry including Marketing Automation, Credit Scoring, Fraud detection, Risk Management etc. In this marketing thesis the author focus on marketing automation for banking. The literature study in the above paragraphs given the background of evolution of marketing automation and the detail of marketing automation along with campaign management, the main key function of Marketing Automation. The details of campaign management are described in the above paragraph and will be mentioned in the case study. This information from the literature are the essential source for identifying the benefits and limitations of the campaign management system in the case study that will be presented in the analysis and conclusion chapters. After finish the literature study then the next chapter the author will present the conceptual framework for the case analysis. The chosen frame work is" The four phase of intelligence-based of marketing automation" the details are given in the next chapter.

3. Conceptual framework

This chapter provides frameworks for the case analysis. The main concept is “The four phases of intelligence-base of marketing automation”. The four phases describe each process of campaign management. These processes explain how campaign management creates the effectiveness and competitive advantages. This concept will be used to map the real situation in the focused company in analysis part and as well as given the model to create guidelines of how the company should develop in order to get maximum profits in the conclusion part.

- **The Four Phases of Intelligence-Based Marketing Automation**

The fourth generation of marketing automation introduces the close-loop of campaign management. Each state of marketing process is interdependent and contributes the maximum returns and excellent performance to the organization in different ways. SAS Inc has divided the systematic and profitable marketing incorporates into four key phases: (SAS Inc. 2004, p.6)

These four phases of campaign management process for conducting effective campaign management are “Plan”, “Target”, “Act” and “Learn”. In the closed-loop campaign management, the first phase is “Plan”. In this phase, the idea from strategic focus will be developed into targeting and positioning. Then in phase “Target” after complete the targeting and positioning, marketers define the customer communications including campaign offers and communication channels from the output of previous phase. The next phase is “Act”. In this phase it is a time to launch the campaigns. From customer communication to measurement, in this phase the performance will be based on the company operation effectiveness. These operations also include the tracking process to gather the response from each campaign. Then the last phase is “learn”. The information from the measurement will be transferred into knowledge base as an input for planning phase for marketers to plan and develop the effective campaigns with the data from measurement to strategic focus. Then the marketing team can conduct the closed-loop campaign management. The figure 3.1 below shows the cycle of the four phases of intelligence-based Marketing Automation.



Figure 1: The four phases of intelligence-based marketing automation
 (Source: SAS inc., SAS White paper: Advanced Marketing Automation, 2004, p.6)

Details of each phases connected to the customer intelligence are described below.

Plan: (Strategic focus => Targeting and positioning)

To explore the market strategy and evaluate the market investment, planning by using the intelligence results from the previous campaign to develop a more effective one. In this phase, marketers will focus on planning the most effective campaign and strategies for marketing campaign. The marketers should finish identifying the opportunities of the current market within this phase.

Target: (Targeting and positioning => Customer communications)

To find the right target group for the right campaign, marketers will select the suitable channel and suitable offer for each target group (to develop the customized campaign). In this phase, the marketers should design the campaign activities and define the target group or customer segment that tends to respond.

Act: (Customer communications -> Measurement)

To launch the campaign according to the plan, marketers will deliver messages to the right customers through the right channels supported by each department such as Call centre, Direct mail, Internet banking, Digital marketing, etc. In this phase those plans that have been automated by campaign management will be conducted to follow the plans from the first and second phases. With automated campaign management tools, customer communication could be reached through the pulling lists, customized email and direct mail materials for the selected customers, and then capture the responses of

each campaign and customer segment by tracking mechanism or we can call the measurement.

Learn: (Measurement -> Strategic focus)

To track the response, marketers will monitor success and failure closely to identify the factors in order to improve the next campaign. In this phase, marketers will also transfer the data in to the knowledge base with the intelligence tools or process. This is the learning process by extracting valuable knowledge from experience in the past. This phase mainly focuses on learning from the previous campaigns with analytical tools and utilizes the tracked response to predict and create a more effective campaign in the future.

In conclusion, there are four phase of marketing automation including “Plan”, “target”, “Act” and learn. Each phase has a focus on different process in the cycle of marketing automation. The four phase are supporting each other with the data connection between each phase. In the intelligence-based marketing automation the information from various phase can be develop with the loop to create and be transferred into knowledge.

Therefore the connection in four phase of intelligence-based is important for execute the effective campaign and the capability of campaign management system. After presents the conceptual framework for the case study in this conceptual framework chapter, in the next chapter the author presents the Methodology part for this thesis given the method of how to collect the information for the case study.

4. Methodology

To develop and customize the right campaign, the insight information about the company business and requirement are essentially needed. Even though the technology tools nowadays have high capability to generate the knowledge, the tools itself can not lead to the real valuable knowledge. To get maximum benefit from those technology, gathering the right business requirements is even more important. Therefore the proper method and the validation of information gathered are considered as a key factor for campaign management research. This chapter present the method of data collecting both primary data and secondary data. Moreover the in the case study under this chapter the author also give the reason for choosing company for the case study. And at the end of the chapter method of How to analyze data are presented.

- Data collection

In this thesis the author uses both primary data and secondary data. Most of the primary data were gathered from the insight interview with the people who are currently working in the thesis' scope areas. These areas include the sales marketers and technical consultant from both Bank (HSBC) and Business intelligence solution provider (SAS). The primary data are partly gathered by opened interview in the HSBC marketing department to identify the problem challenging HSBC campaign management and investigate how HSBC manage campaigns. Moreover, the author also gathered the secondary from website to study the business intelligence trend in the recent market and to understanding the banking industry in global market and in Thailand. The information from HSBC documents and marketing material including HSBC newsletters are also another important source for analyze the existing campaign in the real situations. The details of primary and secondary data are provided below.

The primary data are gathered by conducting the insight interview with HSBC officer who responsible for implementation of campaign management system project. The Interviewee, Mr. Thawisak Kamolsakkamchorn, is the Assistant Vice President of Customer Relationship Management Strategy of HSBC Thailand. Mr. Thawisak is responsible for the customer relationship for retail customer in HSBC BKH. He also will take a responsible to the upcoming implementation of Campaign Management System in the next year. The interviews with MR. Thawisak are conducted for three times during the information gathered. The first one was an open interview conducted on 5 May, 2008. This interview aimed to discuss about the problem area and the general picture of how HSBC concern about Campaign management. The second is the structured interview. This interview was done by e-mail. The list of questions was sent to MR. Thawisak on 12 May, 2008. The purposes of this interview are listed below.

Purpose for the written interview:

To identify the business issues and problems

To identify limitation/constraint in order to find the suitable solution

To understand the criteria for grouping customer profitable
To understand HSBC customer segmentation
To pattern the cross-sell and up-sell activities

The question of the interview with Mr. Thawisak are provided in the Appendix A. the question were designed based on the four phases of the intelligence based- marketing automation included “Plan”, “Target”, “Act”, “Learn” the details of this concept are presented in the conceptual framework chapter. The question number 1-7 under the first part aim to get the overview of campaign management in HSBC Thailand. Then under the second part, the questions number 1-6 aim to capture the idea of customer segmentation in HSBC Thailand for analysis of “Plan” and “Target” phases. The questions number 7-8 aimed to clarify the planning process for campaign management in HSBC Thailand. The question number 9-15 aimed to gather the information for analyze the tracking mechanism of the campaign conducted by HSBC Thailand to fulfil the “Act” and “Learn” Phases in the analysis part. Then the rest of questions under the second part, 16-20, 20-24 and 25-26 aim to gather the details of cross-selling and up-selling products, Customer retention and customer acquisitions for HSBC in Thailand. Lastly, the questions under the third part mainly aim to identify the benefits of successful CMS implementation.

After the answer from the second interview had been sent back, then the author also conducted the third interview via Telephone with Mr. Thawisak on 20 May, 2008. The third interview aimed to capture the clear answer from the second interview and discussed the current business issues for banking industry in Thailand.

Another interview with HSBC staff is the with Internet banking department on . The Interviewee is Ms. Chyabhorn Athawethworawut, HSBC Internet Banking Manager. She is responsible for the implementation of “2G” the new technology for internet banking and website. The interview was conducted on 17 May, 2008 via the telephone. The Purpose of this interview is to understand the overview of the internet banking and online channel for banking industry. In addition, since “2G” is the advanced technology for customers web pages for individual customer, another purpose is to study the role of e-channel and “2G” in campaign management in HSBC Thailand.

For the technical perspective, the author decided to interview some of SAS specialists to gain knowledge about what is campaign management and business intelligence technology. According to Gartner, the IT research company, the research states that SAS remain leading vendors in the multi channel campaign management market. The author organized an interview into three interviews. Firstly, the author had a chance to discuss in an open interview with Mr. Chaiwat Khachondecha who is the specialist in SAS campaign management solution. The purpose of this interview is to understand the idea of How Business intelligence could apply for serving campaign management. After the session ended, the author rearranged all the information gathered and then structured a set of more detailed questions for a close interview. Information that Mr. Chaiwat gave related mostly on how companies in Thailand use campaign management system and what the benefit is.

After study the literature form SAS white paper, the author conducted another interview with Mr. Chaiwat again. Mr. Chaiwat had portrayed the concept of business intelligence and the close relation with campaign management. With many years of

experience, Mr. Chaiwat shared a lot of business perspective and pointed that why business intelligence is becoming a new trend that many organizations are interested in within the past few years.

Lastly, because business intelligence and data warehouse cannot be separated from each other, Mr. Chaiwat introduced Mr. Phoomkit Fangmongkol who is a SAS Data Warehouse consultant. The interview was conducted on 11 May, 2008. Mr. Phoomkit explained the reason why it couldn't be separated because, as a nature, business intelligence or even campaign management is a system that relies on the quality of data in order to enable business users to make intelligence decisions. Data Warehouse serves as a foundation for business intelligence. It engages mostly with data consolidation across enterprise.

For the secondary data, firstly the author gathered the marketing campaigns and information about banking industry in Thailand from Electronic source. The author explore the HSBC global website (www.hsbc.com) to get the overview of the HSBC Business along with product's information. Then the author set the scope and limitations according to the HSBC Group Policies. However the HSBC premier is another important group for the focal company. Therefore the author study more details about the campaign for this profitable group by explore the HSBC Premier global website(<http://www.hsbcpremier.com/>) This site give information about the HSBC Product for specific group of HSBC customer. Then the author study the campaign conduct by HSBC Thailand from HSBC Thailand official website (www.hsbc.co.th) to learn about HSBC Thailand and the banking products for local market Moreover the local website also published the information about the campaign conduct through e-channel. Lastly the information about rule and regulation for banking in Thailand the author gathered the information form Bank of Thailand official website (www.bot.or.th) This information aim to study the rules and regulations for banking industry in Thailand in order to identify the limitations and constraints for retail banking campaign with understanding banking industry in Thailand. Extended from the electronic source, some of the secondary data are gathered from the various document. The author explored the HSBC newsletters to study the executed campaign. In addition SAS white paper such as the white paper "Advance marketing automation" and "The Total Economic Impact of SAS Marketing Automation" are those important source providing the information about the technology nowadays.

During and after choosing the topic, the author has study over the existing literature around the topic area. Since the topic is related to the new technology, most of the literature studies are those published on internet. To get the cutting edges technology information, the author study most of the literature form the experts and the leader in Business intelligence. Among the BI tools providers, SAS is the leader in the world's market. The figure below show the vendors provide the BI tools in the world's market.



(<http://mediaproducts.gartner.com/reprints/sas/vol5/article1/article1.html>)

Not only the leader but also took a step ahead the other vendors in this industry. SAS provide the BI tools with the set of functions that design for different customer industry. For details of SAS strengths see Appendix C. According to the interview with Mr. Phoomkit, For banking industry, SAS have the guideline for the functions and platform those designed for Banking industry already while other vendor still need a period of time to study over these user requirements. Therefore most of the literature reviews are based on SAS White paper. These literatures include the SAS white paper in Advance marketing automation and The Total Economic Impact of SAS Marketing Automation”.

In addition, the literature study are also include the study over the books related to the case study such as Building a data warehouse for decision support written by Laura L. Reeves to get the idea about data warehousing. Moreover the literature study are include the study from various Journals around business intelligence and data warehouse such as UK data warehousing and business intelligence implementation from www.emeraldinsite.com/1352-2752.htm and the study of overview of BI application from journal “Data-driven decision making for the enterprise” to get an overview of business intelligence applications from www.emeraldinsite.com/0305-5728.htm

- Choice of company

To gain knowledge about the benefit of campaign management system, the author choose HSBC to be a case study. According to the World's Largest Bank 2008 ranked by Bloomberg, HSBC ranked the third by market capital (<http://financialranks.com/?p=69>). HSBC's strategies value the cutting edge technology in order to improve its operation effectiveness. In the HSBC worldwide, campaign management system has been launched already in the past few years. In Thailand, it plans to launch within 2009. Among credit card issuers in Thailand, HSBC is one of the leading credit card issuers. It focuses on medium-high value customers and the market competition is very stressful. Many campaigns must have been initiated in order to attract customers. To compete with its competitors, the effectiveness and response rate of each campaign can be a key indicator that measures success. Moreover, retention program is also crucial because the cost of customer acquisition is much higher than keep valuable customers staying. With an in-depth study on HSBC business case, the diversity of HSBC's customers characteristic can give some idea to the author about how campaign management can improve its business process.

- How to analyze

Since the campaign management system are truly new technology for banking industry in Thailand, none of the banks in Thailand has fully implemented the system yet. Therefore in this thesis the author analyzed the information from the real situation in HSBC recently. The analysis combines the visions of HSBC executives along with the capability of the powerful tools in the markets. Most of the analysis both benefits and limitations are the predictions base on the reality in HSBC mapped with the conceptual of business intelligence the four phase of intelligence-based of marketing automation.

5. Finding

In the chapter the data needed for the analysis part are presented. This information is gathered from the interviews with HSBC staffs and SAS consultant the expertise. In this thesis part first the author present the information about how HSBC in Thailand manage it's campaign nowadays. These include the customer segmentation, customer retention, campaign management, campaigns evaluation process and the tracking mechanism. Then in the following section the information about marketing campaigns that HSBC currently conducting are presented. Lastly the information are presented about the campaign management system in the world's markets along with the functions and capability of BI tools in current market.

- **Customer segmentation and identify the profitable customer**

HSBC Thailand plan to develop the customer segmentation based on Age, Personal Income, Occupation, Gender, and proxy of customer's time deposit. Anyway, this idea still very green and should take some more time for people to accept. The marketers and product team in HSBC Bangkok headquarter (BKH) still come up with their product first. Then they would look for the target group who will buy those product or find the customers to match their (good) product instead of segmentation customer first and focusing on about how to support each customer. The criteria for Customer Segmentation in HSBC Thailand, the key input data to design campaign at HSBC BKH are "Customer spending behavior", "Segmentation", "Payment behavior"(Transactor/Revolver), "delinquency level/history". The general idea of how to define the criteria that HSBC will use to categorize the customer is also another important key for customer segmentation. The Customer Segmentation and his/her profitability will be key criteria to categorize HSBC BKH customers. BKH currently have idea on 'current value' to find NVP of all customers belonging with HSBC. But anyway Mr.Thawisak personally thought that this idea does not work in the real situation

Moreover, how to identify profitable customers is another important issue for customer segmentation. HSBC BKH plan apply on Net Interest Income, Net Fee Income deducted by cost of individual customers for identify profitability of customers. But anyway this idea still have not adopted yet in BKH. The priority of customer segment for customer retention depends on how you detect your profitable customer. If you know that he/she is profitable, you have to do your best to retain him/her.

After identifying profitable customers HSBC also should ensure the profitability of those profitable customers. For HSBC BKH Ensuring profitability of customer is depends on our customer contact strategy. For example, after you can identify such 'good' customer, the marketers should set up rules inside CRMS individual solution to detect customer behaviour upon visit our various channel or proactive to contact customers". However the depth detail of those rules that should be set to ensure the profitability of customer is confidential for the focal company.

To maximize the customer value, considering the cross-selling and up-selling is important. For HSBC in Thailand, the Cross-selling and up-selling product are credit card, personal loan and HSBC premier. HSBC BKH cannot include 'Insurance'

as one of HSBC BKH product because it is unable to book into HSBC BKH system due to Bank-of-Thailand's regulation.

- **Tracking and measurement of HSBC Marketing Campaign**

Anyway BKH will apply the use of various BI tools depend on sophisticated level of analysis. HSBC basic tools will be SAS, Cognos or Business Objects. About the tracking system HSBC have separate system to capture the tracked result and then generate the report for evaluation. Currently the data will go to CRMS.

HSBC BKH track the effectiveness of each communication channel by the various system that work separately. The systems are listed below

- Email: KANA (www.kana.com)
- SMS: No system
- Direct mail: Staff should input customer response back to CRMS
- Internet: Sales campaign manager in 2G
- Direct marketing (direct phone): Sales should input customer response back to CRMS

About how HSBC evaluate the campaigns result, normally one should detect both effectiveness and its efficiency to ensure that our people and manage their workload too. About sales channels evaluation, each sales channel should be able to manage their action rate, lead conversion to successful sales, pending leads, etc. The Product should control whether you get new sales, x-up-selling as expect.

For campaign result, HSBC BKH marketing team still evaluate their campaign by the campaign level instead of customer level. The marketer would take responsible for the campaign under his/her responsibilities. In the reality, some customer can apply the same 1Thai baht value on multiple campaigns. But it still doesn't effects their presentation because BKH marketing present their result by campaign.

For the customer profitability by mean of profitability that customers generate to HSBC. Since the profitable customer should be identified and given priority, Mr.Thawisak the interviewee will definitely drive this project to happen across HSBC. BKH always have problem on their jammed telephone at call centre because BKH always treat all customer the same. These problems waste a lot of time, effort on non-profitable customer. So that HSBC in Thailand is now plan to apply CRMS to analyze the revenue, e.g. Interest Income or Fee Income, by individual customers. About the marketing channels, right now BKH still rely on telemarketing channel only because of various limitations.

- **HSBC plan for Campaign Management**

Right now HSBC have the premier service and develop the specific offers for the specially customer. The special customers are the HSBC Premier customers who the criteria to select premier group is the total relationship with HSBC more than 3 million baht.

There are various how-to for prioritization the campaign for each customer segment. Some of those are customization of HSBC BKH decision system inside CRMS individual solution or just a simple flag inside HUB (internal enterprise system) to identify different customer segment of each customer. To manage a number of campaigns and customize those campaigns to fit the business need, HSBC BKH will implement the in Campaign Management System (CMS) in the next coming year. The tentative plan to implement is midyear 2009. The interviewee, Assistant Vice President CRM strategies will take responsible for this business intelligence tools.

After implement the system HSBC staff plan to manage the data flow to support the new system. About how the data will flow in campaign development for HSBC BKH in the future, Firstly the marketers should be able to apply use of business intelligence tools, e.g. SAS, Cognos, Business Objects, to analyze his/her customer. Then the bank should enable multi-channel by using Campaign management Systems. The most valuable input and output for CMS is the customer information. The customer information could partly captured by customer response from CRMS. Finally another important step is to analyze results for each campaign. The analysis should be done by using Business intelligence tools. Then the closed-loop development should get the knowledge back to the next development.

About the data that can be captured by CMS. These data is significant issue for campaign management. The customer data is important for BKH to better serve their customer. For example if BKH can capture the customer preference, Some customer may do not interest now but need us to call them back in fixed period of time in the future. Then BKH call centre or direct marketing could contact the right person and have more potential to sell the product at the right time.

CMS might not help improve their personal financial service as much as it should be. Because HSBC BKH still have the volume of credit card customer is much bigger than other product right now HSBC BKH have the powerful CRM systems to serve credit card separately. The new CMS that BKH will implement next year is aims to support all the products under personal financial services. It depends on how HSBC target it's growth and market too. If HSBC BKH continues to focus on card-base customer, new system may not be a key issue. But anyway if BKH expects more and higher AOP has been applied, CMS and other CRM system which enable closed loop CRM may be their key to success.

The 2G HSBC Internet banking and website

Recently, the big project that HSBC BKH implemented for supporting the customer centric view is 2G. Currently HSBC BKH just launch the new advanced technology for digital marketing called "2G" the second generation. The system

allows BKH to customize the content on web pages and Internet banking for different customers. This mean when different customer visit BKH website they will see the different pages including promotion content. For general visitors BKH can track the visit by IP address. Moreover if the customer has registered with us and has username they can log on. Then, the system could identify customer and can offer the promotion or information that designed for the specific group of customer who might be interested in. For example if the customer have silver card they might be interested in gold card or platinum card. Then the promotion message would be tailored to fit the customer interest.

HSBC Online channels and marketing campaigns

Last year BKH PIB (Bangkok headquarter Personal Internet Banking) have conduct the many campaign to push the online channels. One of those campaigns is the campaign called “e-points” the campaign aims to attract the customers to e-channel. The program mechanism is that if the customers send transaction via internet banking or just log on to the internet banking to check their personal information then they could get the e-points. The amount of point are differ depend on different transactions. Then the customer can redeem the points online. Moreover BKH always try to push online channels by initiate campaign or give top up premium for application online. Currently BKH give the top up central vouchers the customer who submit the Personal loan application online or credit card application via online channel. By summit these applications online BKH reduce cost for sales point. But anyway the application that we received online are just for the information of customer only we still need the customer to submit the physical documents that will be follow up by sales team. Currently, there are many campaigns conducted by HSBC targeting the different group of customers with different offers. These campaign mainly aim to up-selling or increasing the spending for credit card. The campaigns include the HSBC’s red tanks, HSBC’s red cart and HSBC’s red dining giving the different offers. For more details of these campaigns see appendix B. These campaign force the customer to register for the campaign before get the benefits. The campaign registration is store in database. PIB need to generate report manually and send them to marketing team as requested.

- **Business issue for implementation of campaign management system**

One of the common problems that most of SAS’s customers need SAS team to solve is that the customers are overwhelmed with huge amount of transaction data. For example, At True Corporation, which is one of the biggest mobile phone operators in Thailand, the system generates 200 million of calls a day. At Tops Supermarket, the third biggest retail business which has 30 branches national wide, the system stores 30 million purchasing transactions per day. For KTC, Krung Thai Credit Card which is the number one credit card operator in Thailand in term of number of customers, the system captures more than 100 million transactions daily. To store all those data costs a lot of money. How can they turn those disperse data into valuable insight information? This is the main job at SAS team.

Campaign Management system in the market

From knowledge and experience with SAS team, the three main cases in campaign management in Thailand. Marketing officers, in general, already know that 20% of their customers contribute 80% of revenue. But their current systems cannot bring them further. They don't know which customers are top performers or which customers generate loss revenue. With SAS Campaign Management Solution, they can segment a whole bunch of their customers in many perspectives based on business needs. In the old fashioned way, the marketers usually segment them based on their profile. With SAS System, SAS is enabled its clients to classify their customers by usage behaviour, revenue and profitability contribution from the transaction captured daily. Then the marketing officers can think of the strategies about how to move the customer from loss segment into top performers segment.

In the past, the companies run their campaigns in a massive way. But the response rate is not very acceptable. Moreover, to communicate with the customers, each campaign associated with a certain cost for each channel such as direct mail, phone calls, campaign booth. With SAS Campaign Management Solution, we enabled our customers to target their campaigns with a very specific group of customers and channels. The system can also track each response in order to monitor the performance of each campaign. Then the result will be shown in the BI reports so that the marketing officers can learn and develop a better campaign strategy.

Time constraint is also one critical issue. At Tops Supermarket, business users ask IT department to provide information about purchasing behaviour to launch a new campaign but they have to wait for 3 months to get the information. It is too late for a competition. After they implement SAS, the processing time is reduced more than 50% to one month or less. And it also enables the users to query their information needed by themselves from SAS Campaign Management tool. This gives business users more flexibility and also reduce the work load for IT department.

- **How Campaign Management work**

According to the interview with SAS, the process of how campaign management system work in managing campaigns is divided into four important steps. Firstly, The marketer and management executives should identify problem & Business issue (Plan: from knowledge to strategies) These include identify the key data to analysis the Business issue. The marketers should analyze those data to capture the input for planning campaign and identify the criteria to categorize the profitable customers along with unprofitable customer, top profitable customer to create campaign and ensure the profitability of customers.

The second step is "Customer segmentation". The customer segmentation is about how to focus the right customer group. In the targeting and positioning phases, the marketer should be able to design the right offer to the right people through the right channels at the right time. Moreover the marketers need to categorize customer in the strategic way to understand customer in specific group or individually. With CMS, The marketer can segment customer with the appropriate keys to serve different business issues by the knowledge form BI tools.

Thirdly, the marketers must design and develop campaign for each customer segments as example below

- For profitable customer: design campaign for Cross sell and up sell product
- For the customer group that have the potential to purchase but not active: Develop campaign for Customer activation
- For potential customer in the market to acquire more profitable customer: develop campaign Acquisition campaign
- Churn management: Conduct the retention campaign at the right time once the system detects the churn pattern and take action to retain the profitable customers and Top profitable customers.

Follow these steps the marketers can design affective channels for each campaign and customer groups by using report from BI tools. Campaign Management System could help the bank find the suitable channels for each campaign and each customer segment by mapping the relevant field of customer profile and result for each channel together.

The fourth step is to track the result and make a proper measurement to gain valid data. In order to turns data into knowledge with powerful BI tools marketer must conducting the effective tracking mechanism to create the close-loop of development with integrated system and data ware house. In reality, the key of this step is that do you know what are the key data, rules or criteria that lead to the particular knowledge.

- Marketing challenges of the new millennium

According to the SAS white paper in Advanced Marketing Automation (SAS Inc 2004, p2-3)The idea to tread the customer individually has become possible with the computer technology. The table below shows the scenario and challenges for marketing automation.

Table 1: The scenario alludes to the emerging of marketing challenges

The scenario alludes to the emerging of marketing challenges	
Proliferation of customer touch point	
Challenge	How to gather a consistent view of customer through the diverse touch points, while still personalizing the view of each individual customer?
Heightened expectations for marketing campaigns	
Challenge	How the marketers could be sure there accurately targeting the right audience with the right offer at the right time?
Lack of cross-functional cooperation	
Challenge	How can you implement a technology framework that supports the entire marketing team and the entire process, from setting strategy, to targeting opportunities, implementing customer communication initiatives and measuring result?
Rapid growth in organization data	
Challenge	How can marketers access, consolidate and clean all available customer data to create a comprehensive foundation for deriving the best customer intelligence?
New regulatory challenges	
Challenge	“How can a company consistently enforce a customer contact policy and ensure that the different business units aren’t sending multiple of conflicting offers to the same customers?”
The need to respond more quickly and effectively to customer behaviour	
Challenge	“How can companies most effectively keep up with the listening(event-driven)end of the customer dialogue and translate that information into more profitable, timely customer interactions?”
Resource constraints that limit possibilities	
Challenge	“How can a marketing organization determine the best possible set of offers to present, to which customers, with the bounds of resource constraints, available offers and marketing goals?”

6. Case Analysis

From the conceptual framework the four phases of intelligence-based marketing automation, The fourth generation of marketing automation introduces the close-loop of campaign management. Each state of marketing process are interdependent and contribute the maximum returns and excellent performance to the organization in different ways.

SAS Inc has divided the Systematic and profitable marketing incorporates into four key phases: (SAS Inc. 2004, p.6) See the four phases that conduct in HSBC in Thailand.

Plan: (measurement -> strategic focus)

In order to explore the market strategy, The marketer need to evaluate the market investment, Plan the marketing campaign by using the intelligence result for the previous campaign to develop campaign. In the Plan phase of campaign management the marketer should utilize the result from the executed campaign as the input for strategic analysis. Searching for opportunities in the market with powerful knowledge, the marketers focus on planning the most effective offers and strategies for marketing campaign.

Product centric-view to Customer centric-view

Currently HSBC BKH analysis the campaign and customer base on products. The marketer in marketing team divided their roles and responsibilities based on their product under their team. Therefore the marketers are able to analyze the customer data only for those products under his/her responsibility. Normally BKH campaign manager would present the success and failure rate form the campaign related on the products. Therefore the marketers in BKH cannot see the real time or online reports that represent the customer data across the various products. Since the System has not fully been integrated, the database for each system could not freely be communicated. This means the opportunity to have the vision over the customer across different business units. Lack of cross-functional analysis lead to in accurate analysis and the data would not be fully utilize in transferring to the knowledge.

The relevant of the information such as customer profiles and various communication channels and different offers from different business units cannot be presented in the 3 dimensional reports. Hence the marketers could not make use of the customer analysis data by other product. These would limit the opportunities in searching for strategic market or identify the business issue.

Identify and Ensuring the profitable customer

Another important issue is “How HSBC in Thailand identify the profitable of customer” and “How HSBC in Thailand ensure the customer profitability” in this issues From the interview BKH plan to apply the identification of customer profitability on Net Interest Income, Net Fee Income deducted by cost of individual customers. But anyway the idea has not applied in BKH yet. With the implementation

of CMS, The system would be able to identify the profitable customer and top profitable customer by analyze the key indicator form the system intelligent analysis.

According to the information from HSBC BKH, after identifying profitable customers HSBC BKH also should ensure the profitability of those profitable customers.

HSBC BKH Ensuring profitability of customer depends on the customer contact strategy. HSBC could ensure the profitability of customer by identify such 'good' customer, then CRM team set up rules inside CRMS individual solution to detect customer behaviour upon visit though multiple channels or proactive to contact customers. Even though the detail of those rules should be set to ensure the profitability of customer is confidential, we can see that the rules have been set and updated for generating report manually or batch run quarterly. With CMS we could let the system monitor these patterns. The BI tool and implementation of data warehouse for the overall system could tiger once the system detect the churning pattern and let the BKH take acting on time.

Target: (strategic focus -> Targeting and positioning)

In this phase, the marketers target the campaign activities and define the target market or market segment that trend to buy. From the strategic focusing to the targeting and positioning process, In this phase now the marketing team have known the market opportunities in the market already. Then come to the designing process. Design the right campaign offer to the right target customers through the right communication channels with the right message at the right time.

Even though HSBC Group have been changed the marketing structure customer centric view, HSBC BKH still currently design their campaign from the product centric view. The marketing team come up with the product they want to sell or the product they have first. Then they look for the customer group who want to buy this product. Therefore in the Targeting phase HSBC are mainly aims to target the right customer group. BKH could look for the right target by segment their customer with the right criteria.

Targeting the right customer means find the right segments for the campaigns. HSBC BKH now segments customer based on Customer spending behaviour, Segmentation, Payment behaviour (Transactor/Revolver), delinquency level/history. Actually with the powerful implementation of CMS, HSBC BKH could segment their customer according to the campaign or for the customer segment could be different for each campaign. The powerful system and integrated data will allow HSBC BKH to customize segments at anytime for any campaign.

Designing the right Channels, Currently BKH has many online campaigns to push the number of Internet banking user and website visitors. Because HSBC in Thailand has only one branch due to Bank of Thailand regulations, they are trying to push the customer to the online channels. Their conduct the campaign to attracted the customer to the online channel by conducting the online activation for online channels. These

campaigns mainly communicate to the customer by email, telemarketing, SMS and direct mail. The problem is that when the customers change address or phone number the customers seldom inform the bank. So that the customer contact information fields in BKH system are not always updated.

Moreover right now HSBC Internet banking department are implementing the second generation (2G) technology for internet banking and website. The 2G system can tailor the interaction message for the group or individual customer (tracked by one time password (OTP) or user name or IP address depend on access levels). This is another advanced step to offer the right message to the right customer at the right time. HSBC BKH opinion about this is that if the customers come to HSBC it's mean that they interested in HSBC brand. Then it's much easier to sell HSBC products by cross-selling products to these customers rather than contact customer randomly.

Giving the right offers, as state in the finding chapter that currently when initiate campaign HSBC BKH comes up with the product first. Example of customize offers campaigns that HSBC execute right now are "HSBC Red tank", HSBC Red Cart", "HSBC Red Dining". The cash back rebate campaigns that launched at the same time with different offers to target different customer according to their life style. Then BKH try to cross-sell other service channels such as "HSBC Red Cart" have top up offers for the customers who redeem rewards point via online channels.

The products BKH consider for up-selling and cross-selling are credit card, personal loan and HSBC premier. Technically BKH cannot consider 'Insurance' as their product because they are unable to book into their system due to Bank-of-Thailand's regulation. However HSBC BKH has applies the idea of offering the right thing to the right customers since BKH segment the customer by behaviour. The example of this is E-points program. Details given by internet banking manager that If the credit card holders who always purchase via online channels or account holders who always visit send the transaction via internet banking, BKH offer the e-rewards point then the rewards points that could be redeem for special online offers via e-channel only.

Act: (Target and positioning -> customer communications)

This phase is the time to launch the campaign according to the plan deliver message to the right customers through channel supported the campaign such as Call centre, Direct mail, Digital marketing. With CMS the plans that have been automated by campaign management would be conducted to according to the designed campaign from the plans early phases

This phase "Act" BKH more depend on the operation effectiveness. HSBC have many standalone systems to support the marketing channels in the campaign operation.

The communication message from BKH would be sent out through the various channels. Since these system are separately operate such as the system generating Direct mail, SMS sending system, Email sending system, The message sending out could be easily redundant and confusing. Since the campaign may offer different to the different customer and through various channels. A customer might receive the inconsistent campaigns offers form many channels or form the same channel but

different campaigns. These problems will create a number of calls and questions to call-centre and Internet Banking Department.

CMS could help ensure that they are contact the customer again and again. Ensure that the separated system would not generate the redundant of message to the same customer. This mean the integrated system could help BKH maintain consistent in each campaign avoid confusing in manage a number of campaigns. More these could avoid customer dissatisfaction and reduce cost of the redundant efforts on campaigns. More over the CMS can le BKH have a customized campaign message on auto generated monthly statements and reduce the cost of mailing and printed ad materials.

Call centre have play an important role. In this phase since people in Thailand prefer to call for information than any other channels. Moreover the customer also frequently activation or registration campaigns via IVR, website and internet banking. These channels must support the campaign by given the information. Since the systems are not cross - product integrated call-centre staffs can only see the customer information form one system one at a time. So that, call-centre staffs cannot see the information of the customer from different systems. As a consequence they would be unable to support the various customized campaign.

In this phase tracking mechanism must be operated in the proper way to capture the accurate and valuable result for the campaign back to learning process in the next phase. HSBC BKH has the tracking system for tracking the result form each campaign by separated system by each channel. For example the campaigns registration rate, the spending under executing campaign can be gather to generate the report as a batch processing.

HSBC BKH have the tracking system for track the result form each campaign by separated system by each channels for example Email by KANA system, for Direct mail the staff must input customer response back to CRMS. For Internet, the sales campaign manager in 2G is the systems that manage the tracking result. For Direct marketing, Sales must input customer response back to CRMS

With CMS, All the tracking result would be integrated to the data warehouse and can allow the marketer to monitor the performance of channels and number of campaigns anytime. The CMS can create report in many dimensions with online analytical processing (OALP).

Learn: (Customer communications- > Measurement)

To Track the result, monitoring the success and failure to identify the knowledge to improve the next campaign, in this phase, the marketers could transfer the data in to the knowledge with the intelligence tools or process. This is the learning process by gaining the valuable knowledge form experience. Learning from the previous campaigns with analytic tools and utilizes the tracked result to predict and create the truly effective campaign in the future.

According to the interview with HSBC Currently HSBC BKH has done measurement after the campaign ended. During the campaign execution the campaign manger could

manually monitor the progress rate (customer response rate, campaign registration rate) from each channel manually. The most valuable input and output for CMS is the customer information. The customer information could partly captured by customer response from CRMS.

There are many campaign such as “HSBC’s Red Tank” ,”HSBC’s Red Dining”, ”HSBC’s Red Cart” needed registration to monitor the success of marketing communications. These program ask Customer to the register to get the privileges when purchase via HSBC credit card. Currently, the registration mechanism for evaluation in BKH has been applied on SMS, IVR and internet banking registration. With this program registration the marketers could evaluate the success of communication channels and campaigns’ offers while the campaigns still executing. However the result in BKH only be captured by generate the fixed report in paper or electronic fixed report from proprietary database. The campaign managers only see and present the result form his or her campaign under his/her product sections. The cross functional analysis can only be done manually when the marketing team requested. In addition the cross campaign’s report would be generated after executed campaigns ended only.

According to the CMS capability, with CMS the real time evaluation could be even more effective. Because the data from all channels will goes to Data warehouse and ready to be captured and analyzed at anytime. Moreover the system can customize and generate the pattern for prediction by identifying new key data based on current input from updated result. These enable the bank to follow up the market trend and be the first to explore the market opportunities (Plan phase).

The learning phase is the key to capture information and transfer it back into knowledge for strategic planning phase. With CMS, according to AVP CRM strategies opinion, this learning phase is another important step is to analyze results for each campaign by using the intelligence tools. In analysis, the closed-loop development should get the knowledge back to the next development.

7. Conclusion

From the concept of Business intelligence, the data could be intelligently transfers into customer knowledge and customer intelligence by various BI tools. After study the literature related to the business intelligence and marketing automation in the fourth generation, we could conclude that marketing automation are the tools to manage and develop the effective marketing activities to maximize the customer value individually. The marketing automation transferring customer information into the customer intelligence (knowledge) with the three key functions “campaign and customer analysis”, “Campaign management”, “Centralized management”.(SAS Inc. 2004, p1).

After studies of marketing automation in the latest generation mentioned in the literature review combined with the study in reality for case study HSBC Thailand and finding about the tools functions from the SAS Thailand the author can conclude that the campaign management as a major part of marketing automation can help the Bank Targeting the right people with the right offers and the right message through the right channel at the right time.

- **Benefits of implementation campaign management system**

According to the literature review we found that the campaign management as the heart of marketing automation can help the bank maximize the customers value through its functions and capabilities. The Campaign management system has plenty of benefits that described in the following paragraphs

Firstly the Campaign management system supports the customer single view. This means the information of one customer in different system would be integrated in one system and we could see the relevant data connected to the particular customer in the consistent view “See the customer in consistent view”. Data warehousing let the marketing team integrated the customer information form proprietary database into the single warehouse that allow marketing team to access and capture data into the tools to analyze and generated the intelligence to Support the customer-centric structure.

Secondly we could identify customer profitability. As we know the 20% of customer (top customer) generate 80% of bank revenue. Therefore knowing the bank customer then target the right group with priorities would help the bank manage its resource to support the right customer with the balance effort or investment with the returns. Knowing customer and know who we should try the best to strengthen the relationship and offer the best offers. Plan the churn management by knowing who are the top profitable customers and profitable customers, so that the bank should try the best to retain and create loyalty.

The CMS allow the marketing team to target the right customer with the right offer through the right channels at the right time. After identify the profitable of customers, then HSBC BKH could plan to have the right campaign for those profitable customers. The effective planning could utilize the information gathered from various systems that would be integrated in the data warehouse. Then the

analysis would be more effective with integrated information and the 3 dimensions report form OALP. The CMS Implementation includes the implementation of technology that supports the marketing from strategies to targeting to customer communication to the measurement and learning. CMS fulfilled the idea of developing customer knowledge in closed loop. The information gather from the executed campaign would go back to the loop to be transferred into knowledge by analyzing process for further developing effective campaign and customer profiling.

Moreover the CMS could help the bank ensure the consistency of customer while conduct a number of campaigns for different business Units and in addition the bank could handle the multiple campaigns for various group of customer or individual customer in the same time. In the past it was so confusing to conduct many campaigns the customized for small group or individual customers at the same time. Moreover the different business unit might conduct the different campaign aiming the same group of customer make the customers confused and the bank would lose the budget on redundant effort. But today with the CMS as a tool to manage and develop campaign it's possible to offer the different campaign to the customer individually and gather the result of those campaign and communications channels that relevant to each other connected to those customers.

Lastly the CMS help the bank create revenue and maximize the life time value of each customer through cross-sell and up-selling. The CMS could manage the data from various business units and see the different relevant between those data. So that the marketing team could see the customer in single view and then develop up-selling and cross-selling product or campaign to the right customer. With these benefits the bank could conduct the right campaign to retain customers in time the system could track the pattern and identify the possibility of churning customer in time. Moreover the bank can manage to push cross-selling and up-selling to the right customers with the right products to maximize the value of each customer.

However the benefits of CMS from the study of literature review and the finding part are still the ideal benefits for HSBC Thailand. Since HSBC Thailand haven't implemented the system yet. All of the predicted benefits would just be the ideal benefits that might not work in reality. Since the most of benefits will only effectively work in supportive environment. But in reality there are many constraints and limitations that would be an obstacle for the best effectively uses of campaign management system. Some of them might be seen after implementation of CMS.

- **Limitations of implementation of campaign management system**

From the case study and the analysis of information gather from HSBC Thailand the author can conclude that there five major limitation for HSBC Thailand in implementation of campaign management system.

First of all, the number of retail customers in HSBC BKH is not as many as it should be. Like in Vanesualla and Mudives, foreign bank in Thailand allow to operate only one branch.(ATM or counter service are considered as a branch.) due to Bank of Thailand Rules and Regulations. The number of retail customer compare to the

cooperate customers significantly lower. Customer in Thailand are not familiar with using internet banking or IVR, they prefer to visit the bank for information. So that only one branch is considered as a limitation in targeting the retail customers.

Secondly, the implementation of campaign management system required budget and effort. The high capital Investment and time constrains are the major limitations that many bank in Thailand still pending the implementation of CMS. It would be hard to balance returns on investment since the implementation of CMS required a significant investment on time, effort and budget. The revenue that created by the supportive system might not cover the investment of implementation of CMS. However in this issue it's since the CMS is just a tool to achieve goal but what is more important is How to creatively use the tools to achieve goal.

Another limitation is the lack of system knowledge and expertise. Campaign Management System is considered as a new high technology in Thailand especially for the banking industry in Thailand. None of the bank in Thailand has fully implemented the system yet. Therefore it lack of expertise in Thailand to support the system could be another problem to fully utilize the system's capabilities and generate the maximum profit from CMS.

Moreover the IT infrastructure in HSBC might not fully support the new system. With the existing IT infrastructure the new system could only partly be applied in HSBC BKH in supporting the marketing decision. There are many proprietary systems working separately to support different product in HSBC BKH. Without the compatibly integration and smooth communication between these systems, The CMS could not work on intelligent analysis and could not perform the effective closed-loop of learning process by maximum benefits of BI tools. It will take years to reconstruct all the system to compatibly support the new CMS to perform the maximum functions.

The last and the most important limitations is the staff attitude. The management structure in HSBC is not support the customer centric view. The management level and marketing team, product team Analyst IT department have to change the way they have worked and look at the business issue in the new way from Product-centric view to customer centric-view. Changes in management perspective needed to be applied.

In conclusion there are many limitations for implementation of CMS. Most of them are required years to overcome. Among the various limitations the last one "changing people attitude" is the most important. This could be the first step for implementation of CMS. Because CMS is just a tool to optimizing and managing the campaign in order to maximize the returns on investment. But what is even more important than what the tools could do is "how to use the tools" in the proper way. Even if we successfully implement the tools in HSBC BKH, the staff might not change the way they work and look at problems then the powerful tools would be worthless. The marketing and product team including the management level need to look at the problems and identify the business issue in the same direction. Then proper use of the CMS will be able to support the management directions. The related staff should be train and change the attitude and the way they work. The working system form the whole organisations have to be changed to support the customer centric

view. They should change the vision in employee mind from product centric view to the customer centric view. Then develop and identify business issue base on customers instead of product even if without the CMS. If HSBC BKH could change the management structure and staffs' attitude then the other limitations would be overcome as a sequence.

8. Recommendations

This chapter the author present the recommendation for the focal company based on the benefits and limitations from the thesis study. According to the conclusion there are many benefits of implementation of Campaign management system. The advanced technology will help HSBC BKH execute the effective marketing campaigns. However HSBC BKH should also concern about the limitations that the author describe in the earlier part. HSBC BKH should carefully conduct the change management. As mention in the conclusion part, the most important limitation is the management structure and staff attitude. The management structure should be reorganized to support the customer centric view. The staff should be aware of the advanced technology. They should change the way they doing their job and look at business issue. This could be done form now before the implementation of the campaign management system. Because Campaign management system is just a tool to help people working more effectively, but the most important is that the people who using these BI tools need to understand and know how to use the tools to achieve their goals. It's should start from the management level should start point down the directions then the staff including back end and front end staffs could follow those directions.

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Appendix

Appendix A

Interview details

Interviewee: Mr. Thawisak Kamolsakkamcchor
Assistant Vice President of CRM Strategies
Date: 5 May 2008, 12 May 2008, 20 May 2008

Interviewee: Ms. Chyabhorn Athawethworawuth
Internet Banking Manager
date: 17 May 2008

Interviewee: Mr. Chaiwat Khachondecha
Presale Consultant - Customer Intelligent Solution
Date: 9 May 2008

Interviewee: Mr. Phoomkit Fangmonkol
SAS Data warehouse Consultant, ex-SAS Data Mining consultant)
Date: 11 May 2008

Questions for written interview

The First Part: Overview of the Campaign management

1: How HSBC in Thailand develop campaign for personal customer

- Customer segmentation
- How Data flow in process
- Planning and campaign development
- Tracking mechanism
- How HSBC evaluate the campaign result, customer profitability, marketing channel effectiveness

2: What are the business issue or problem that HSBC currently facing in managing campaign for personal customers?

3: What are the initial reasons of CMS implementation

4: What will be changed after HSBC implementation of the CMS

How the CMS work

In what process CMS would help (Plan / Target / Act / learn)

What are global requirements for the CMS

What will be the local amendment in requirements for the local CMS

5: How HSBC will benefit from implementation of the CMS

6: What are the benefits of HSBC's CMS implementation

In term of revenue

In term of operation effectiveness

In term of reputation / brand awareness / service quality

7: What are the limitations of CMS implementation

In term of Cost

In term of Technology (compatibility/data structure)

Resource

The second part: Overview of how HSBC currently manage campaign for personal customer

Customer segmentation(Plan &Target)

- 1: How do you identify profitable customer?
- 2: How do you ensure profitability of customers?
- 3: How do you categorize your customers and what are the criteria for your customer segmentation?
- 4: For each customer segment how do you prioritize the business issue (customer profile/ customer retention / cross sell up-sell/ profitability / loyalty)
- 5: What campaign to you plan to make to those segment?
- 6: How do you design campaign for each customer segment?

Planing

- 7: What are the key input data to design campaign?
- 8: 8.1What kind of report you currently use as an input to design campaign?
8.2 What kind of report you will get as an input to design campaign?

Act and Learn (tracking)

- 9: How do you evaluate customer sales channels and products?
- 10: 10.1What kind of report you get as a result from tracking successful campaigns?
10.2What kind of report you will get as a result from tracking successful campaigns?
- 11: How the information from previous campaign would be captured for the development of the next campaign as and knowledge?
- 12: How do your track the effectiveness of each communication channel?
Email:
SMS:

Direct mail:
Internet:
Direct marketing (direct phone):
Above the line:

13: How do you track and evaluate the success of each campaigns?
(Registration mechanism etc.)

14: What kind of information / data that is the key for develop the next

15: Do you have any campaign developed for specific group of customers?

If yes;

-What are the criteria that you use to select the customer group?

-How do you develop the offer and design campaign for those customer group?

-How do you prioritize these campaign and customer group?

Cross-selling /up-selling

16: What are the current campaigns to support cross-selling and up-selling to your existing customer?

17: Which customer segment do you want to push up- sell/cross sell product?

18: What product / services do you consider for cross-selling (please prioritize)

19: What product / services do you consider for up-selling (please prioritize)

20: What kind of report / data are important for cross sell / up sell ?

Customer retentions

21: How do you identify potential of churners?

22: Which customer is priority for customer retention?

23: How do analyze customer churn?

24: What kind of report are you receive from churn analysis?

- What kind of data or report is important for churn?

- What any other information you needed for churn analysis

- What any other information you needed for customer retention programme?

Customer acquisition

25: What are the current campaigns to support acquisition of new customer?
(member get member etc.)

26: How do you analyze potential customers

The third part: What are the benefits of successful CMS implementation

1: How do you apply the campaign management concept?

3: What are local amendments needed for localization?

4: How will CMS help you develop campaign management for personal customer?

5: What kind of knowledge you would get from CMS?

6: In which process would become more effective with CMS? (Which manual process will be removed etc. customer single view: see report in any dimensions)

7: What kind of data will be captured (what cannot be captured with out the CMS)

How those data significant to Campaign Development?

How do you get more insight customer profiles?

8: Could you give the idea of how data will flow and will be analyzed in your system

9: How do you think you could develop a better campaign for your customer with the CMS?

10: How do you think you could develop the tracking mechanism for the executed campaign?

11: How do you think the CMS could help you reach the each goals?

-Revenue (profitability)

-Customer Acquisition

-Customer retention

-Cross sell / up-sell

-Branding (Brand awareness / Brand Loyalty)

-Consistent service “The world local bank”

Is there anything regarding to the above-mentioned matters you would like to add

Appendix B

HSBC campaign Mechanism

HSBC's Read Tank

The customers will get up to 5% cash back for every 800 Baht spent at PTT Service stations nationwide.

5% cash back for HSBC Premier MasterCard

3% cash back for HSBC Visa Platinum

2% cash back fro HSBC Gold and Classic

In order to get these cash privilege the customer must register for the campaign via these channels:

SMS: type PT Followed by 16-digit credit card number and send to 4268888

IVR: 02-502-0402

Online: www.hsbc.co.th

* HSBC Premier MasterCard is privileged not to register for cash rebate

HSBC's Red Cart

When customer shop at Tesco Lotus get 5% cash back every HSBC credit card enjoy 5% cash back on every 3,000 Baht accumulated purchase at Tesco Lotus every branches nationwide 1 april – 30 june 2008

In order to get these cash privilege the customer must register for the campaign via these channels:

SMS: type TL Followed by 16-digit credit card number and send to 4268888

IVR: 02-502-0402

Online: www.hsbc.co.th

* HSBC Premier MasterCard is privileged not to register for cash rebate cross promotion; When customer redeem HSBC Rewards every 4,200 reward points the customer will get special top up Tesco Lotus Gift Voucher

HSBC's Red Dining

The customer Get5% cash back for every accumulated purchase amount of 2,500 baht per month (at least 3 transactions) at any participating restaurants in restaurant category with HSBC credit card(all card types) 1 April – 30 June 08

In order to get these cash privilege the customer must register for the campaign via these channels:

SMS: type DN Followed by 16-digit credit card number and send to 4268888

IVR: 02-502-0402

Online: www.everydaydiningdelight.com

* HSBC Premier MasterCard is privileged not to register for cash rebate

*Special for customer who register via www.everydaydiningdelight.com get assotional 200 reward points.

Different type of HSBC Acquisition campaigns

HSBC Visa Platinum card Acquisition campaigns

(source: http://www.hsbc.co.th/1/2/personal-en/promotions/apply-platinum-en?WT.ac=platinum_acquisition)

When apply for an HSBC Visa Platinum card the customer will get free fuel up to 140 litres the Campaign mechanism are below:

Get 140 litres when spending at least 60000 baht within 2 months after card approval
Get 100 litres when spending at least 50,000 baht within 2 months after card approval
Get 40 litres or 15,000 reward points when spending at least 20,000 bah within 2 months after card approval.

*special for the customer who apply supplementary card together with primary card the customer will get the extra 10 litres.

HSBC Personal loan online acquisition campaign

Campaign mechanism:

When apply for HSBC Personal Loan Online the customer get free central gift Voucher valued at 500 Baht on-top.

Apply Channels: Apply online or call the direct number

Marketing message:

Hassle-free: Easy to apply without collateral or guarantors required

Flexible loan amounts: Borrow up to 4 times your monthly salary or 1,000,000 baht

Instant disbursement: Get money transferred to your assigned account

Less payment: Enjoy more saving on amortised principal calculation

Personalised terms: Choose from 6 to 12 month payment terms according to your budget

Convenient repayment channels: Make repayments by direct debit from your HSBC account. On 08:00 - 18:00 PM.

Members get members

HSBC Member Get Member Programme (1 January - 30 June 2008)

Different Program mechanism:

- HSBC customer who refer HSBC Self-Employed Instalment Loan customer will receive Central voucher valued at 2,500 baht.
- HSBC customer who refer HSBC Premier customer of HSBC Personal Loan customer loan amount of 100000 baht and above will receive Central voucher valued at 1,000 baht.
- HSBC customer who refer HSBC Platinum credit card customer will receive Central voucher valued at 800 baht

- HSBC customer who refer HSBC Personal Loan customer loan amount of 50,000 - 99,999 baht will receive Central voucher valued at 500 baht.
- HSBC customer who refer HSBC credit card customer will receive Central voucher valued at 400 baht
- Special for every 3 successful referrals the referrer will receive and additional Central voucher valued at 1,000 baht (can be a combination of products)

Appendix C

SAS Strengths

from (<http://mediaproducts.gartner.com/reprints/sas/vol5/article1/article1.html>)

With continued high visibility and strong growth in core campaign management revenue (almost 50% growth during 2007) and substantial campaign management wins with a strong analytic vision toward campaign management, SAS remains in the Leaders quadrant.

SAS has good basic and advanced functionality for campaign management, as well as strong advanced analytics capabilities, such as predictive analytics, and cross-campaign optimization.

SAS Customer Intelligence 5.1, released in September 2007, included a major release of its customer intelligence suite, updates to marketing optimization (which included multithreaded optimization solvers and contact policy enforcement), incremental releases for campaign management and a new module of inbound marketing called Real-Time Decision Manager. SAS partners with SpeedTrap, a U.K.-based company providing online behavioral analytics. A more-visionary item on the SAS road map is to apply its strengths in analytics to mine social networks, which could become a strong differentiator when integrated in multichannel campaign management.

References report that SAS Campaign Management performs above average for displaying/exposing the underlying data structures, and allows for adequate control of cells and extracts. Scheduling and automation of campaigns are described as robust and stable. SAS should be on shortlists of analytic-intensive marketing departments that want tight integration between basic and advanced multichannel campaign management.

(<http://mediaproducts.gartner.com/reprints/sas/vol5/article1/article1.html>)

Appendix D

Definition

Discount rate: the interest rate used in cash flow analysis to take into account the time value of money. Although the Federal Reserve Bank sets a discount rate, companies often set a discount rate based on their business and investment environment. Forrester assumes a yearly discount rate their current environment. Readers are urged to consult their organization to determine the most appropriate discount rate to use in their own environment.(p.20, SAS White paper: The Total Economic Impact of SAS Marketing Automation 2007)

Net present value (NPV): The present of current value of (discounted) future net cash flows give and interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made unless other projects have higher NPVs.

Present value (PV): The present or current value of (discounted) cost and benefit estimates given at an interest rate (the discount rate). The PV of costs and benefits feed into the total net present value of cash flows.

Payback period: The breakeven point for an investment. The point in time at which net benefits (benefits minus costs) equal initial investment or cost.

Return on investment (ROI): A measure of project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits minus costs) by costs.

(Source: SAS white paper: The Total Economic Impact of SAS Marketing Automation 2004)

Data warehouse

“A data warehouse is an analytical database that is used as the foundation of a decision support system. It is designed for large volumes of read-only data, providing intuitive access to information that will be used in making decisions.”(Reeves, p.24)

Source data

As defined by Reeves (Reeves, p.28) source data is the data in different sources(databases, files, segments etc.) that will be extracted from the operational system.

Target data

“The target data is the data that goes into the fields within the data warehouse database.” defined by Reeves (Reeves, p.28).

Decision support system

According to Laura (Reeves, p.23) A decision support system is a system which support the decision making by providing the information needed for analysis for the user to make the decision.

Customer single view and Data warehouse

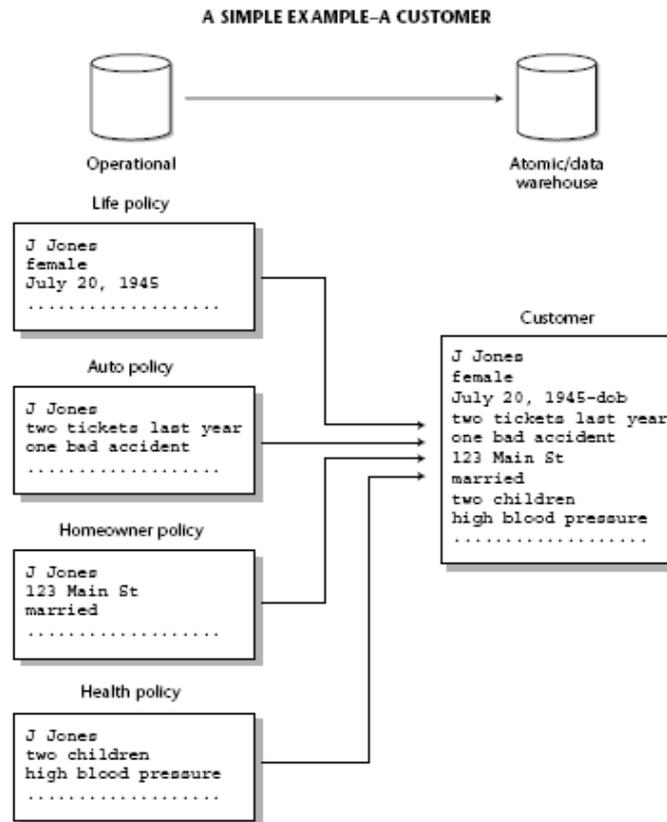


Figure 2.1: a simple example – a customer (Inmon 2005 p.19).

From the Figure 2.1 shows the example of customer information from operational proprietary database integrated to the analytical database or data warehouse that providing customer single view. As data is transformed from the operational environment to the data warehouse environment, it is also integrated. Data Warehouse and Business Intelligence is a couple that cannot be separated. With the data warehouse, business intelligence becomes a possibility. Without the data warehouse, business intelligence is just a theory (Inmon 2005, p.402). Basically, data warehouse is designed to store all information across enterprise to create a single version of truth. Data such as operational data or transactional data that is dispersed across the company will be consolidated and integrated. For example, if data of credit card and personal loan of retail banking business are stored separately, it is very painful to find out which customers hold both products.

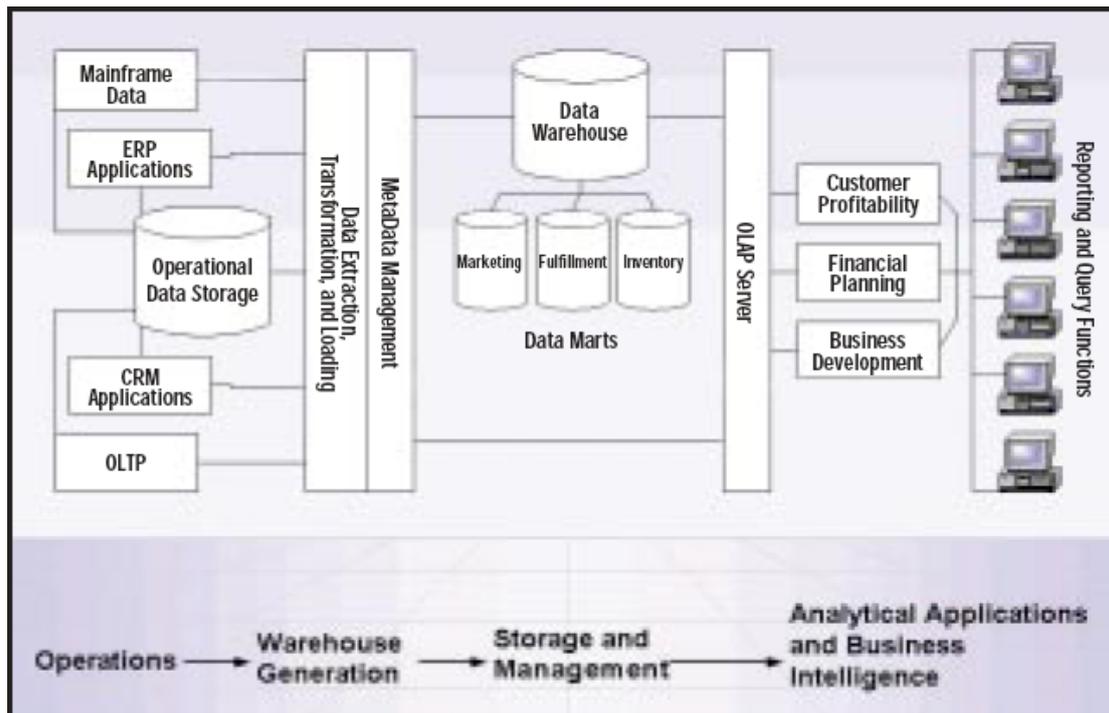


Figure 2.2: Basic Data Warehouse Architecture (Netezza White Paper, 2004, p4)

“Multiple sources contribute to infrastructure stresses. Businesses must constantly juggle new data with archived data, new sources with existing.” (Netezza white paper, 2004, p4)

In the figure 2.2 above shows the basic data warehouse architecture. It extracts data from operational data source systems then transform and consolidate to create a single view of data and then store into the data warehouse. The “Data Mart” which store information of each specific subject area will use data from data warehouse and then load and delivers reports to business users. As an end to end process, it can be seen that all of the information that end users see is definitely comes from data source system. The quality and completeness of business intelligence reports depend highly on the quality of data source.