



A Framework of Customer Intelligence for Construction
Equipments of Small Retail Business in Thailand

by

Sopis Benjaphimarnpong

Submitted in Partial Fulfillment of the
Requirements for the Degree of
Master of Science
In Technology Management
Assumption University

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Master Project Approval

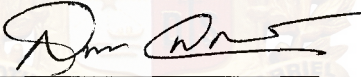
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 Equipments of Small Retail Business in Thailand

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ABSTRACT

The economic recession that hit the country in 1997 led to a dip in retail business as consumers lost their jobs and confidence and became more conservative in their spending habits. Despite rising oil prices and a weakening of the baht, inflation remained largely subdued throughout the year, allowing the Bank of Thailand to maintain a low interest rate policy to accommodate restructuring. Most of Construction equipments in Thai retail business faced higher competitions. But the most important thing they face was the inefficiency of the inventory system. They can't provide what customers' want that make customers' dissatisfied, sometimes it's less opportunity for customers to give data about themselves which can be used to improve company's offer to them. Moreover, overwhelming of some products and imbalance of some construction equipments that made hedge of products in the inventory that can create problems for customers. Some products can't meet customers' demand, which creates lot of problems in the construction's equipments shops. Staff skills are one of the problems because it's consequent failure to internalize idea of holding on customers. All of this can't be solved to create customers' satisfaction that's why a lot of problems have happened until now.

So Customer Intelligence (CI) can help many Thai retailers to solve these problems. They hire specialists who can consolidate and integrate their customer data to create individual customer profiles that reflect buying patterns and behaviors. They use new kind of Customer Intelligence to create data reporting, query, analytical and data mining tools to discover these customer profiles. The result helps determine their best customers, understand target customer sets, determine which customers you should retain, and to whom you can offer additional products and services. With more customers communicating online, retailers are required to know whom their customers are and how they prefer to shop in an e-business economy. Whether the customer does business through traditional means or online, by producing a single customer view, the Customer Intelligence (CI) can help you understand where your customer shops and what your customer buys to better adapt to selling channels and future marketing strategies, leading the way through alleviate many problems in Thai retail business.

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CHAPTER I: INTRODUCTION

1.1 Overview of retail business and competition of construction equipments in Thailand.

After the economic crisis since 1997, the growth of retail business in 1999 has notably resumed according to the 1.6 percent sale increase in 1999 of some department stores and discount stores from the same period last year, totaling 108.05 billion baht. The sales have consistently risen in the first quarter of 2000 to 27.2 billion baht, representing 5.5 percent up over the corresponding period a year ago. The growth of retail business has moved in the same direction with the expansion of the economy. Therefore, the growth of Gross Domestic Product (GDP) in 2000 projected by the SCB Research Institute at 4.2 percent will contribute the flourished trend of Thailand's retail business. Discount stores have held a majority market share since 1999, instead of department stores because discount stores have rapidly expanded their new branches while many medium and small-scaled department stores had closed down. However, most of the construction in retail business targeting the medium and low-income clients continue to grow well because their targeted customers are different from the other business, for example, the discount stores. The overall retail business in 2000 is still highly competitive. The construction equipments in retail business have the most serious competition because of the rapid expansion and the cost competitions, particularly in Bangkok where most of HomePro from many camps open the new branches in the heart of Bangkok and vicinity and are usually sited nearby each other. Meanwhile, many construction equipments hold the sales promotion activities to beat other rivals including the improvement of goods and service to serve the consumers' demand. The branch expansion of retail business will see a slowdown as in the past two years.

Thailand's retail landscape, especially, has changed significantly over the past five years, due mainly to the influence of international retailers that have brought in new business practices and changed the way millions of people shop, especially in urban areas. The eventual entry of large foreign players was inevitable, but it was hastened by the economic crisis of 1997, which left many local retail operators in a precarious financial state. Without financial help from new strategic partners, local retailers could not restructure debts or raise funds to expand.

A new, more budget-conscious and demanding breed of consumers also emerged from the crisis. Once they started to grow accustomed to the lower prices and better service offered by the big operators, there was no turning back.

All this was bad news for any traditional local retail operators that had failed to adapt and upgrade. Calls for government regulations to curb the growth of multinationals found support in some quarters, but it has become clear that consumer choice will ultimately dictate which businesses survive. The change has been most apparent in the supermarket and discount store sector, with chains such as Tesco Lotus, Carrefour, Big C (Casino Group) and Makro continuously expanding their outlet totals from 1998 and posting healthy sales. Given their greater bargaining power with suppliers, the big chains can sell products at lower prices. They counter claims of retail job losses with assertions that they have created thousands of more jobs, not just in their stores but also among supporting industries and suppliers. Exports of Thai-made goods to their networks abroad, especially in Europe, bring in further revenue, they argue. The department store segment is the only area still controlled by majority Thai-owned retailers such as Central Retail Corp, Robinson and The Mall Group. Local shopping patterns have been transformed. Consumers now prefer to buy household goods from discount stores, which are more convenient, with ample parking, air-conditioning and a host of additional features such as food outlets and mini-bank branches as additional attractions.

Wet markets and other traditional venues where shoppers can bargain will always have their place, but even these have felt the pinch. The owners of many small shops, for example, now go to the mega-stores to buy essentials that they can resell at respectable mark-ups to their neighborhood customers. Supermarkets and convenience stores that lack the scale of the bigger operators have been forced to reposition themselves to focus on niche markets. Japan-based Seiyu Supermarket, for example, sold its business to Tops, part of the Netherlands-based Royal Ahold group. Tops in turn has moved to counter the impact of giants such as Carrefour and Tesco Lotus by finding new niches, such as smaller outlets in inner-city areas that combine the features of convenience stores and supermarkets.

Another supermarket operator, Food Lion, adopted a new concept to compete with nearby wet markets, while Jusco made an alliance with Power Buy, the electrical and

electronic goods division of Central. Small, family-run shops also have been offered the possibility to upgrade by joining the networks of convenience-store chains, which have lowered their franchise fees as an inducement. As part of a larger network, small shops can modernize, obtain lower wholesale prices and keep retail prices more competitive.

In the face of major changes across the entire retailing spectrum, the government has been criticized for failing to promote a clear policy for the industry, and of doing very little to curb the expansion of foreign retailers. A law on retail zoning is now being drafted, but the danger is that it could be seen as targeting one specific group and harming foreign investor sentiment.

One of the government's responses has been a proposal to set up a non-profit organization to help conventional retailers cut their supply costs and compete more effectively with large stores. The new body would represent small retailers and purchase supplies in bulk on their behalf from manufacturers, thus closing the price gap with the big chains.

Expansion

The number of discount stores is expected to exceed 200 within the next two to three years. Currently there are 100 discount stores across the country including Tesco Lotus (33), Big C (30), Makro (21) and Carrefour (16), compared with 50 outlets in 1997. Discount stores not only play a role as retailers but also as wholesalers, selling products to smaller grocery stores.

Market analysts estimated that the country had 260,000 retail outlets in 2001, of which half were modern in design and business practices. About 30-35% of total retail space was controlled by major chains including Tesco Lotus, Carrefour, Big C and Makro, up from 10% to 20% five years ago. The figure is expected to reach 40% by the end of 2002. The number of small grocery stores, meanwhile, has been steadily declining by 10-20% per year, according to the estimates. There have been other casualties along the way, including long-established provincial department stores and familiar names in Bangkok such as Merry Kings, New World, December and Welco. Daimaru

Department Store, the first Japanese department store to establish a presence in Thailand, has also closed its doors, along with Yaohan.

In Bangkok, several new fronts have opened on the retail battleground, including Rama III, Rama IV, Bang Bon, Phra Khanong, Bang Khae, Ratchadaphisek and Rattana Thibet. Each location is now packed with five to seven retailers of all types. Retailers in main provinces such as Chiang Mai, Chiang Mai, Ubon Ratchathani, Nakhon Ratchasima, Phitsanulok and Hat Yai are also seeing the growing influence of the major chains. Since the crash in 1997, only two major new shopping centers have opened: The Emporium in Bangkok and The Mall in Nakhon Ratchasima, both developed by The Mall Group.

Adjustment

The largest locally owned retail players have adjusted over the past five years by moving to focus on their core businesses and cut non-core operations. Central retail Corp (CRC) sold stakes in CenCar Co to its French partner, Carrefour, and ceded majority control of Big C Supercentre to France's Casino Group. CRC also sold its supermarket holdings to Royal Ahold, which subsequently took Tops Supermarket on an expansion spree.

As a result, CRC was able to concentrate on its core Central department stores and on expanding promising businesses such as Power Buy and Super Sport.

The Charoen Pokphand Group, an agribusiness conglomerate, exited the supermarket and discount store fields, selling its Sunny Supermarket business to Belgium-based Food Lion and its holding in Lotus Supercentre to UK-based Tesco Co.

Shopping center developers, meanwhile, have frozen new projects and are focusing on renovating existing shopping complexes. Some have changed their positions to focus on specialized niche markets. A shift toward new forms of marketing activities including electronic commerce and catalogue sales is also evident. As well, shopping centers have adjusted their merchandise mix to offer more packaged foods and entertainment products such as CDs, VCDs, books and magazines.

Some department stores are competing directly with discount stores by transforming themselves into information technology outlets, while others have joined with foreign supermarket chains to battle the discount stores.

New magnets such as bowling lanes, movie theatres and theme parks are showing up at some outlets. And while large-scale marketing activities used to take place three or four times a year, operators now feel the need to dazzle customers on a monthly or even weekly basis with specially themed promotions.

Along the way, retailers have learned the importance of market research and the use of information technology to better understand consumers. Family-style management has given way at many retail businesses toward professional operations with strong IT input.

The change in the retail landscape is also being felt by manufacturers, whose margins have shrunk because of the discount stores' aggressive bargaining. Traditional provincial wholesalers are also being squeezed out by highly sophisticated distribution and logistics operations, most of them owned by the chains or operated as joint ventures.

Manufacturers complain that the powerful discounters charge them high entry fees when they want to put their products on the shelves in the mass-market stores. At the same time, discount stores have broadened the range of their house-brand products to further pressure brand-name suppliers.

Some manufacturers have found the losses too hard to bear and have exited the business. Others, though, have decided to change their policies and become sub-contractors for discount stores.

To survive, Thai traditional business in construction equipments have to invest the computerized systems to better track production and control costs as well as higher bargain power to suppliers. Staffs have been trained how to handle orders from modern suppliers, and products are better classified by segment. Finally, high competition between traditional retail business and superstores are still happen in Thailand in term of construction equipments. So Customer Intelligence is one of

Information System that can help Thai retailers alleviate the inventory management problems as well as provide the best service to customers.

1.2 Project's objective.

- To define the problems of the construction equipment in Thai retail business.
- To analyze the budget requirement in a framework of Customer Intelligence (CI) in Thai retail construction equipments business.
- To identify the key success factors and characteristics of retail business by using Customer Intelligence (CI).
- To identify a framework of Customer Intelligence (CI) in Thai retail construction equipments business.

1.3 Problem Statement.

The economic recession that hit the country in 1997 led to a dip in retail business as consumers lost their jobs and confidence and became more conservative in their spending habits. Despite rising oil prices and a weakening of the baht, inflation remained largely subdued throughout the year, allowing the Bank of Thailand to maintain a low interest rate policy to accommodate restructuring. Most of Construction equipments in Thai retail business are facing higher competitions. But the most important things they face are a too inefficient inventory system. They can't provide what customers' want, creates customers' dissatisfaction, sometimes it's less opportunity for customers to give data about themselves which can be used to improve company's offer to them. Moreover, overwhelming of some products and imbalance of some construction equipments that made hedge of products in the inventory that can create problems to customers. Some products can't meet customers' demand that makes lot of problems to the construction's equipments shops. Staff skills are one of the problems because it's consequent failure to internalize idea of holding on customers. All of this can't be solved to create customers' satisfaction that's why a lot of problems have happened until now.

To solve the problem and create a competitive advantage in construction industry in terms of Thai retail business, we can use Information System applications

in our business and create customers' satisfaction by using Customer Intelligence to alleviate our problems and find the best solution as much as possible.

1.4 Significance of study.

This project is emphasizing on how to use Customer Intelligence to help Thai small retail companies in Thailand by comparing between the traditional of small retail business in term of construction equipments in Thailand and small retail companies in term of construction equipments by using Customer Intelligence to implement in the Thai retail companies as well as the key success factors after using Customer Intelligence (CI) to solve the problems as well as create competitive for Thai retail companies.

1.5 Data dictionary

Customer Intelligence (CI): Tracking products, customers, and sales people produces a mass of useful data, but that data can also hide a company's key business drivers.

Customer Relationship Management (CRM): A strategy used to learn more about customers' needs and behaviors in order to develop stronger relationships with them.

Point of Sales (POS): systems sitting on store counters collecting enormous amounts of data.

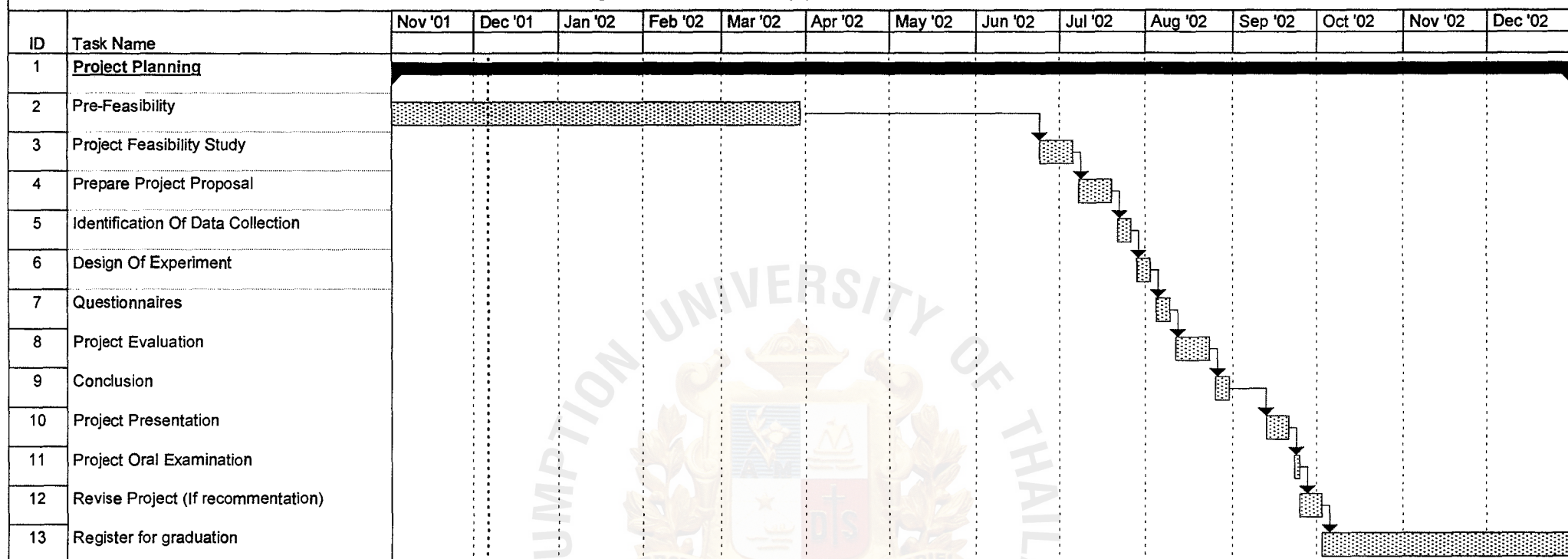
Enterprise Resources Planning (ERP): Systems that improve accounts payable, general ledger and other accounting functions.

Online Analytical Processing (OLAP): Database layers that provide speed-of-thought access to more summarized information with read-write capabilities to support modeling and planning.

1.6 Scope and Limitation.

This project concentrates on construction equipments companies in Bangkok by using 100 questionnaires through Thai retail business and HomePro. The project will focus on the tools to help Thai construction equipments in retail business. By the way construction equipments in Thai retail business has many wide range of products so it's impossible to cover all construction equipments products and all construction industries. Therefore, only a few products related in the construction retail business are chosen for this study.

The Customer Intelligence For Construction Equipment Of Small Retail Business In Thailand



Task



Summary



Rolled Up Progress



Split



Rolled Up Task



External Tasks



Progress



Rolled Up Split



Project Summary



Milestone



Rolled Up Milestone



CHAPTER II: LITERATURE REVIEW.

2.1 The Information Technology tools we use in the Thai retail business

Now Technology has an important role in Thai retail business especially reduce times and cost to help retailer so that they can serve their customers on time to create customers' satisfaction. The demand of high technology, for example from point-of-sale (POS) promotions to merchandise flow is increasing. The rapid shift from running cash register tapes to using data from the sophisticated POS computers in today's stores clearly illustrates how comprehensive collection and use of information can increase sales and promote efficiency.

Unfortunately, while retailers have excelled at capturing vast amounts of data, they have often overlooked the fundamental need to make sense of it all. While many retail organizations have invested significant capital to implement unified, enterprise-wide platforms for their operational systems, they have often neglected to provide an equivalent unified platform for their customer intelligence (CI). Even the largest retailers still face barriers in using all this information for strategic planning and deployment of resources beyond the current quarter.

In the increasingly competitive retail environment, successful retailers will be those that employ truly integrated, enterprise-wide Customer Intelligence based on collaboration, unified information and common analytical applications through using high technology. Retailers have a strong command of sales history, but where future projections are concerned, even the best chains often depend on straight-line projections and guesswork.

A common analytical customer intelligence that translates the data into consistent, meaningful and actionable information can help retailers to fully leverage their data across the enterprise. In today's increasingly competitive retail environment, retailers that employ truly integrated, enterprise-wide Customer Intelligence (CI) based on collaboration, unified information and common analytical applications will position themselves to reap the benefits of this strategic approach and create customers' satisfaction with on-time delivery and help retailers to reduce stocks in hand.

2.2 Defines theory or system of Customer Intelligence (CI) we use for this project.

- **What is Customer Intelligence in Thai retail business structure in term of construction equipments?**

Customer intelligence (CI) is an evolutionary and learning process. Companies learn and adapt their offerings and business strategy as a result of the insight gleaned from their customers. Customer intelligence is part strategy, part analysis, and part technology. It encompasses a wide range of solutions, from data gathering and data warehousing to personalization and analytic application. Ultimately, companies can use Customer Intelligence to create the ability to understand the value of their customer relationships. It's difficult enough these days to attain and measure overall profitability but CI can help Thai retail business to accumulate the profitability by rearranging all the old traditional into the new one in order to create customers' satisfaction and alleviate the problems. That challenge gets exponentially more difficult when it comes to measuring the profitability of individual customers especially when they're coming to you across multiple channels.

Most businesses still don't have a real understanding of who their customers are, which ones are the most profitable, how to project their lifetime value, or where to focus marketing activities and customer loyalty-building campaigns. Customer intelligence can help you to understand — and predict — the changing needs of your market. Create customer and prospect profiles from both traditional and e-business channels. Customer Intelligence can help many Thai retail businesses by:

- Identify your most profitable customers.
- Discover and plan how to communicate with customers.
- Optimize multichannel marketing campaigns.
- Anticipate and drive customer needs.
- Retain your most valuable customers and attract more just like them.

While most of retail business today are concerned with determining the key performance indicators for their customer-relationship-management projects, there is in fact no single right way to measure the health of customer relationships. Some

companies opt for a few, high-level metrics such as customer satisfaction and market share; others perform frequent, detailed customer surveys and in-depth analyses.

But whatever metrics or level of detail you apply, "customer intelligence"--i.e. establishing clear goals and easy business-level tracking of customer initiatives--is essential for CI (Customer Intelligence) as follows:

1. Who are my customers?

Understand customer segments and key characteristics to target appropriate products and services and recognize emerging trends. High-level metrics include: the number or percentage of customers by geography, business characteristics (company size, revenue, industry), or consumer characteristics (age, income, lifestyle, family size); deal size; new vs. repeat customers; annuity stream; and number or type of products purchased. Changes in these characteristics can signal new risks and opportunities.

2. How loyal are my customers?

Once you understand key customer characteristics, understand who's staying and who's leaving. Measure loyalty in terms of both the number of customers retained and the amount of revenue generated to see patterns that might otherwise be missed--such as a few big customers making up for many smaller customers leaving.

3. Who are my most valuable customers?

Prioritize customer retention efforts by determining the best--not just the biggest or most frequent--customers. While difficult to calculate precisely, customer value can often be approximated by tracking discount rates, product profitability, and customer acquisition costs, as well as the cost of service (the number of support calls) and account management (the number of dedicated or shared resources). Each of these should be assigned a relative weight.

4. How satisfied are my customers?

Customer surveys and company service metrics can help determine customer satisfaction levels and problem areas. Use customer surveys to understand key customer expectations. Track service levels to get early warning on potential problem

areas. Pay special attention to company handoff points, which are often where problems occur. Typical metrics include call-hold time, on-time shipment, order accuracy, product quality, product availability, first-time fix (reopen rates), shopping cart or call queue abandon rates, customer response time, and customer complaints.

5. How well do I understand and respond to critical customer events?

Most customers don't decide overnight to stay or leave. Instead, they progress--or fail to progress--through a series of decision points, based on interactions with the company. Customers who agree to a product trial must have a positive experience to become a buyer. New customers often need to buy several times before their buying "habit" turns them into a true customer. Dissatisfied customers often show dissatisfaction by slowing new purchases before they cancel standing orders. Changes in purchase frequency and amount, usage frequency and duration, payment promptness, and other behavior are all indications that customers are becoming more or less loyal.

6. How effective is my customer acquisition process?

Track each major stage of the sales and marketing cycle. Cost metrics such as cost per lead and cost per sale are important in assessing the revenue return against the cost. Effectiveness metrics, such as length of sales cycle, lead freshness, forecast accuracy and fallout analysis, help optimize resource deployment, especially for business-to-business companies with long sales cycles and expensive direct sales resources.

7. How well am I leveraging partners?

Almost every company depends on partners for fulfillment or joint promotions, or leads, sales, consulting, or implementation services. Understand key deliverables (leads, product information, proposal input, product availability) and handoff points, and track results. Measure partner follow-through and customer satisfaction levels, and reward your most valuable partners.

8. Where are my competitive threats?

Win rates and market share against key competitors will help you assess market momentum and competitive threats. In industries such as pharmaceutical, consumer packaged goods, and transportation, use external data to compare your product sales with competitors'. Collect and analyze competitor information in sales force automation or other applications.

Customer intelligence is the Information Technology that can help Thai retail business, but it must be assembled and used to be effective. Start by estimating values, such as customer service costs, that can't be calculated exactly. Next, focus on key metrics for high-value customer segments or areas where customer retention is at the greatest risk. Finally, determine what actions you will take in response to the customer information gathered. In this way, customer intelligence helps ensure not only the success of your customer relationships, but, ultimately, in the business.

2.3 Definition of Customer Intelligence of the other industry related to Thai retail business in terms of construction equipment.

There is not found Thai other industry related in the Thai retail business in terms of construction equipments using such kinds of technology because these systems are rather new for Thai people although there are some educated people who know these systems but it may take a long time to make customers and the other people to know about these kinds of new system.

There are many organizations in the foreign countries that like to use Customer Intelligence to know what customers' want and improve their sales volumes but in Thailand it is not done yet due to the newness of the Information System, ignorance of Thai people although some educated people know these systems but it's only specific groups. We may have to a long time to educate more people to accept these kinds of new systems. So these are the good Customer Intelligence company example that can be identified as:

Truis: A CVM Supplier Pioneering 'Customer Intelligence'

Customer intelligence can describe information about customer demographics, interaction histories, relationship attributes, hot issues, emerging opportunities, and reference customers. It is critical for the effective management of customer relationships, the development of new business, and in speeding high-impact, new products to market. Truis is a service and software supplier that helps its clients capture and manage customer intelligence for increased business effectiveness. Through structured, qualitative interviews, Truis helps clients integrate the captured information with other customer information and drive managerial decision-making based on that intelligence.

Company Background

Truis was founded in April 1998 with the vision of empowering companies to "reach out and talk to customers, listen, and learn from them." That vision included driving customer understanding derived from those conversations throughout the organization into all of the plans and processes that ultimately impact the customer. Initially it developed a service comprising a comprehensive methodology for the collection, management, and distribution of qualitative customer feedback in B-to-B (business-to-business) markets. In response to client demand, Truis designed and launched the Truis IQ System, a Web-hosted, customer intelligence management application. Since that time, Truis has grown to be a significant supplier of CVM solutions and services for B-to-B clients.

Truis currently has 50 employees and a growing stable of clients, including Business Objects, Cisco Systems, Citrix, Commerce One, Digital Island, DigitalThink, Extensity, Informatica, Microsoft's bCentral, and VA Linux Systems. Profitable since its founding through 2000, Truis completed a \$8.25 million, Series A round of financing in late 2000 that supports the development and marketing of its Truis IQ customer intelligence application. Investors include Canaan Partners, RRE Ventures, and private investors.

Truis' Customer Intelligence Management Solution

Truis delivers value to its clients through a combination of a tested planning and deployment methodology and a Web-based, hosted software solution.

Truis IQ Methodology

Truis begins an engagement with a client by taking it through its "Truis IQ Methodology," a step-by-step process that facilitates the creation, deployment, and use of a proactive, ongoing customer intelligence program. The methodology comprises the following five phases:

- ***Increasing demand*** — communicates the value of the program; motivates departments to participate; and ensures that individuals understand their roles and responsibilities.
- ***Collecting intelligence*** — develops a substantial channel of customers from whom feedback can be gathered; facilitates collaboration with sales, marketing, service and other departments to develop VOC and customer data collection strategies; and initiates collection of information via a series of structured interviews.
- ***Managing intelligence*** — maximizes the relevance, availability, and reliability of customer information while building successful relationships with both customers and internal departments.
- ***Distributing intelligence*** — delivers the right information to the right people at the right time; demonstrates strategic uses of customer intelligence in meeting business objectives; and obtains approvals to prepare deliverables (e.g., customer quotes) for external use.
- ***Measuring impact*** — evaluates success of the program; enhances internal buy-in and commitment to customer intelligence program; and identifies opportunities for improvement.

As Truis implemented this methodology with clients, it became clear that customers needed a Customer Intelligence application that helped them automate the mechanics of maintaining and using the methodology. Thus, the Truis IQ System was designed as

a hosted, Web-centric management dashboard and information repository for implementing and leveraging the Truis IQ methodology.

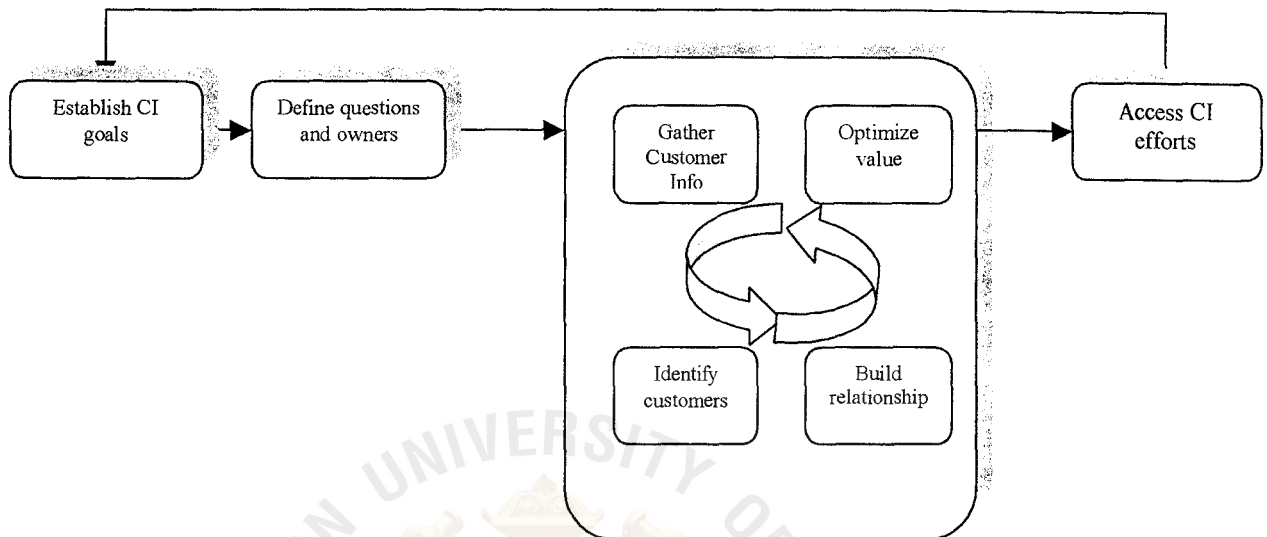
Truis IQ System

The focus of the IQ System is to capture and use customer-interview-based intelligence throughout the organization. The system's strengths cluster into three primary areas: intelligence reporting, communications, and administration/security.

- ***Intelligence Reporting:*** The IQ System enables users to segment and group customer populations based on a variety of attributes. That generates a wide range of predefined or ad hoc reports on those customers. For example, users can obtain win/loss reports; lists of hot issues; lists of customer references sorted by industry, product, or service; or simply track and view the contact history, demographics, and relationship attributes of a particular customer. These capabilities can save time, enhance the effectiveness of marketing and sales efforts, and improve customer relationships.
- ***Communications:*** The IQ System enhances communications between the firm and the customer, as well as among departments within the firm. For example, customer change requests for new products can be logged, distributed to the members of new product teams, and reported back to the customer. Similarly, the system can facilitate cross-functional focus and coordination, addressing upcoming marketing opportunities.
- ***Administration and Security:*** The IQ System administration module enables customer intelligence managers to manage end-user profiles; establish the business rules for managing automated processes such as notifying stakeholders of new customer issues or updated reports; and to configure system wide settings for system access, report distributions, and so forth. Truis uses advanced technology and systems for Internet security, including Secure Sockets Layer (SSL) protocol, automatic data transfer tampering detection, user ID and role-based access controls, and a state-of-the-art data center with multiple security mechanisms in place.

Although, Thailand is not using this Information System (Customer Intelligence) but this may popular in the future very soon.

2.3 The Customer Intelligence Operations Process



This picture show Customer intelligence activities fall into four main areas. Each area feeds into a loop for designing and implementing the customer intelligence strategy.

Gaining a 360-Degree View of the Customer

This first activity involves much of the strategy-building process. In particular, it identifies critical questions and the key pieces of analysis and customer information that can help answer the strategic questions. Some of the key questions that many e-businesses ask when formulating a customer intelligence strategy are listed in the table. You can use these questions as a checklist for your strategy-building activities. Each person that you designate as the owner of the questions can provide the answers to the analysis activities, best practices, and technologies columns. Best practices and technologies are the ways that you implement the activities. Best practices tend to be largely manual processes, and technologies can automate many kinds of analysis and best practices.

Identifying Customers and Building Relationships

These two areas involve three key activities:

- Identifying segments of customers, products, or other relevant information that can help your company effectively target the sale of your products and services
- Gaining insight into each customer's buying behavior and preferences to create targeted and personalized offers
- Identifying the prospects and customers most likely to take specific actions such as purchase, return, enroll, activate, or cancel so you can better respond to their needs

Although there are many solutions that can help you build predictive models to identify customers and their buying habits, you can also take a more direct route for completing each task. You can ask your customers what they want. You can conduct surveys and focus groups to determine how satisfied they are with your products and services. You can have your customers respond to online surveys when they log in and register at your site. When you interview your customers, forecasting and predictive modeling complement your empirical research efforts.

ANALYSIS ACTIVITIES. Analyzing and modeling customer information is key to identifying and building relationships with customers. Building segmentation models, ranking and scoring customer information and segmentation models, and creating customer behavior models are all important tasks. Analysis activities to undertake can include:

- **Interaction Analysis.** Interaction analysis measures how different segments interact. It typically compares two different segmentation models, for example, comparing risk to value segments to product segments.
- **Dependency Analysis.** Dependency analysis shows how members of a specific segment exist within other segments. It determines similarities between segments and identifies clusters for evaluating customer behavior.
- **Cross-Segment Migration.** Cross-segment migration identifies how people change over time. It tracks how specific high-value buyers have moved to become medium- or low-value customers so that the company can take action.

- **Category Management Analysis.** Category management analysis defines how you track and measure specific product-related activities. By creating segments of products, stores, time periods, and customers, this analysis activity helps simplify the visual communication to help extract consistent meaning from your data.
- **Promotion Analysis.** Promotion analysis tracks and measures the relative performance of groups of products, customers, and time periods. It measures the relative performance of promoted and non-promoted products for control and indexes the performance of different time periods.
- **Market Basket Analysis.** Market basket analysis determines which products consumers tend to buy in concert with other products, providing clues for cross-sell and up-sell opportunities.
- **Survey Analysis.** Survey analysis tracks the relative responses of different groups of customers to a questionnaire or survey. It compares and contrasts these groups to a larger population and to each other. Seeking feedback from customers and then measuring and acting on the responses is an integral part of a multichannel e-business strategy.

Optimizing the Value of the Relationships

This last area is one of the most difficult activities to implement, and you can't begin it until you've undertaken the first two. Optimizing the value of your customer relationships implies that you've successfully built customer relationships and you want to deepen them. To do this you will need to understand the value of the customer to your business. You'll undertake activities such as:

- Estimating the time to next purchase or the time period in which the customer is most likely to act so you can be responsive to the customer's needs.
- Estimating the long-term value of customers and change in long-term value caused by various types of marketing actions.
- Developing business planning and forecasting models. Planning models can translate customer interaction plans into projections of changes in the size of segments of the customer base as well as e-business revenue, costs, and cash flows by month for a specified number of years. Ultimately these models can even help to define the value of the company's total customer experience.

Forecasting models can also estimate detailed operational "demand-chain" service performance measures such as hourly and daily inbound telephone calls or Web order volumes, daily catalog order volumes, and even catalog response rates.

- Identifying key metrics and performance indicators that best depict the extent to which critical processors are being executed, the success of marketing activities, the degree to which major strategies are being followed or are achieving their objectives, and your company's overall "flight deck" strategy.
- Using decision-support tools to help automate analysis tasks and customer interaction processes.

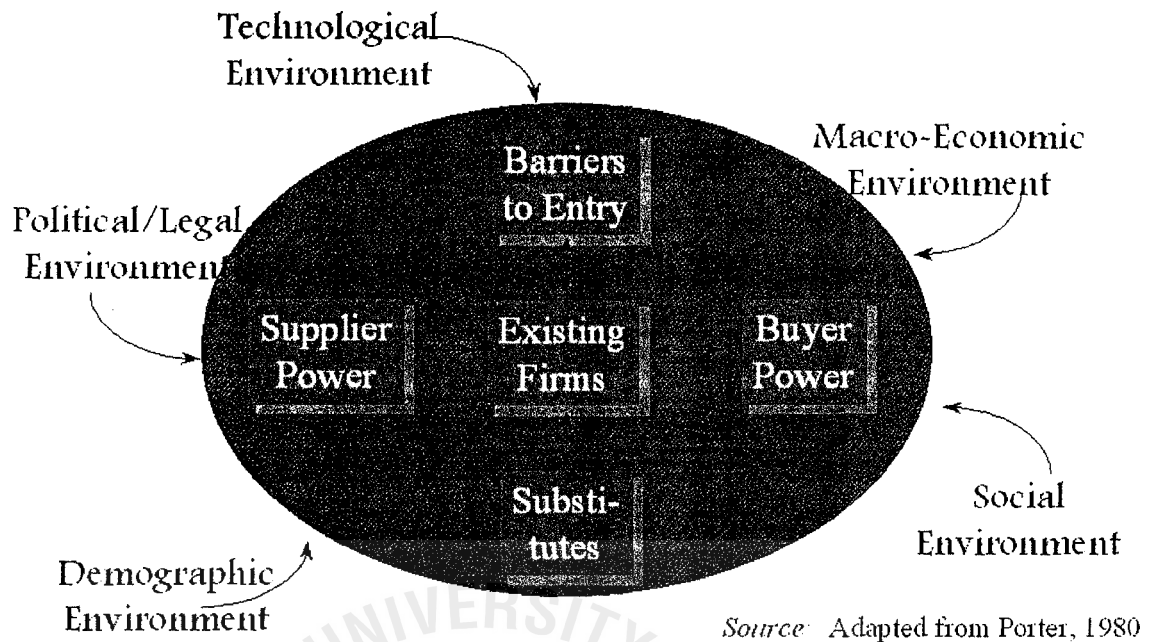
2.4 Major ways of achieving competitive advantage in Thai retail business in term of construction equipments. (Use 5 forces, 3 generic strategies)

As Michel Porter said on competitive strategy and competitive advantage form as the main bases for the core concepts as:

2.4.1 The five competitive forces of industry structures:

In construction retail business, there are 5 basic forces that determines its competitive structure, these are:

- 1) The threats of new entrants.
- 2) The threat of substitutes products and services.
- 3) The bargaining power of suppliers.
- 4) The bargaining power of customers.
- 5) The rivalry among the existing competitors.



These 5 competitive forces determine an industry's and similarly, a firm's growth and profitability because they influence the prices firms can charge for their products and service, the costs they have to bear, and the investment required to compete in the industry—the elements of return on investment. Hence, a good understanding of the industry structure and the rules of competition embodied in the 5 competitive forces is a fundamental basis in determining the appropriate competitive strategy of a firm. Ultimately the goal of competitive strategy is to be in a position in the industry where a firm can best defend itself against the 5 competitive forces or can influence them in favor.

Industry profits may be conceptualized as a fixed pie. This profit pie expands or shrinks through the influence of the major structural forces. Changes in the size of the profit pie also change the profit share of individual firms in the industry. Next, we examine how each structural force shapes industry profits and competition.

Barriers to Entry

An important determinant of profitability is the number of competitors within an industry who compete for a share of industry profits. This number of competitors depends on who can enter the industry and effectively compete in it. Entry barriers are economic and technological forces that prevent outside firms from competing in an

industry. These barriers protect existing competitors from outsiders attracted to join the industry, some of whom might be highly-diversified and powerful. If entry barriers are low, threats from potential entrants are viable because outsiders can easily come into the industry and increase competition within it. This reduces the total profits industry participants can share. If entry barriers are high, outsiders cannot easily join the industry. This protects the industry and its profits. Entry barriers depend on technological and commercial relationships within the industry. The most important barriers to entry are cost advantages, product differentiation, access to distribution channels, and miscellaneous barriers such as patents and monopolistic control over raw materials.

1. Cost Advantages

In some industries, economic efficiency increases with the scale of operation of a production unit. As volume increases, average costs decline. **Scale economies** exist as long as a firm can distribute overhead and other fixed costs over many units. In every industry there is a minimum economic scale at which a production unit must operate for it to be efficient and competitive. If this minimum scale of operation is large, it requires a large amount of capital to establish and reduces the number of viable competitors. To see how economies of scale act as barriers to entry, consider two contrasting industries: the ballpoint pen industry and the automobile industry. Ballpoint pens can be assembled in a small workshop. They need a small assembly line and pre-molded parts. A few molding machines can mold the pen body, clips, rings, washers, and ink tubes. The cost of setting up this kind of workshop could be as low as \$50,000. In contrast, the cost of establishing an economically feasible automobile assembly plant could easily run into several hundred million dollars. Purchasing economic advantages of scale also occur because firms can buy raw materials in large quantities at discounts not available to competitors.

Sometimes, consumers must incur costs when they replace one product or service with another. **Switching costs** determine how easy or difficult it is for consumers to change purchases. If switching costs are high, consumers continue to use the same product. They remain loyal to a familiar product and continue to buy it, despite the availability of alternatives. If switching costs are low, customers tend to experiment with new and different products. They try several products and may even substitute those from other

industries to fill their needs. Thus, a high switching cost acts as a barrier to entry by discouraging consumers from trying new products offered by new entrants. Switching costs depend on consumer preferences, habits, and brand loyalty. Sometimes the product's functional attributes create switching costs. For example, American Hospital Supply creates high switching costs through custom-tailored software. It gives its client hospitals a computer system and associated software for ordering supplies and maintaining inventory control. It also trains hospital personnel how to use this system. Once accustomed to this system, hospitals find it difficult to switch to alternative suppliers. In this case, switching suppliers would involve changing ordering procedures, computer systems, software packages, input data, and internal record-keeping procedures. In contrast, consumers of toothpaste have very low switching costs associated with trying different brands. Buying toothpaste from a grocery store can be almost an impulsive decision. It takes little effort or risk by the consumer to switch from one toothpaste to another.

A final cost advantage occurs from learning, or **cumulative experience**, that enables a firm to improve its processes, extend its network of relationships, add to its knowledge base, and build on past contracts. All of these reduce total costs and hence offer an advantage from longevity. Over time, a firm should become more efficient and establish an insurmountable lead its competitors or new entrants cannot overcome.

2. Product Differentiation

Product differentiation refers to how easy or difficult it is to distinguish products in an industry. Product differentiation may be based on objective features of the product or on perceived features. Perceived features include brand image, novelty, status image, and fashion appeal. Industries in which it is easy and inexpensive to differentiate products experience high product and brand proliferation. If creating product differentiation is technologically difficult and expensive, it limits the entry of new products into the industry. Creating differentiation requires creative product and package designs. It may require heavy investments into advertising and promotion to convince consumers that the product is really different and unique. The apparel industry is one in which it is easy and inexpensive to differentiate products. Products can be differentiated by fabric material, designs, color, size, and price. But since these are easy to imitate, the barriers to entry are low. New competitors enter and exit the

industry quite frequently. In contrast, the transparent adhesive tape industry produces a standardized product that is difficult to differentiate and hence others cannot easily imitate. Few new companies have entered this industry in the past decade.

3. Access to Distribution Channels

Easy access to distribution channels lowers barriers to entry into an industry. New entrants can easily distribute their products without having to invest in creating a new distribution network. Entry is more difficult in industries where existing participants control distribution. For example, consider the gasoline industry. Large oil companies such as Exxon, Shell Oil, Texaco, and Mobil control distribution outlets. New entrants into this industry cannot sell gasoline through existing outlets owned or franchised by these companies. They must create new outlets to distribute their products. In contrast, the distribution channels for hand tools are easily accessible to new entrants who can sell their offerings through existing privately-owned hardware stores or home improvement centers. They also can create new outlets by offering attractive margins to general merchandisers. In some cases, entrants create a new distribution channel such as using catalogues, telephone order and overnight delivery, and even the Internet.

4. Miscellaneous Barriers

All of these factors contribute to creating barriers to entry, but they do not exist evenly in all industries. In some industries, one source of entry barrier is more important than others. More significantly, the barriers to entry change continually due to new competitive strategies. Sometimes technology patents, raw materials monopoly, large capital requirements, and changing regulations can act as important barriers to entry. These absolute advantages are independent of scale, differentiation, or distribution. If a company has **patents** on a particular product, it can prevent other manufacturers from making that product and entering the industry or provide an absolute cost advantage regardless of output level. This is common in the proprietary drugs and pharmaceuticals industry. Patents provide protection from competition for a specific period. Monopolistic control over **raw materials** also can act as a barrier to entry. For example, De Beers controls more than 60% of the worldwide supply of raw diamonds. This makes it very difficult for any new entrant to play an important role in the

diamond industry. A **large capital requirement** also acts as a barrier to entry. Not only is it difficult to obtain a larger capital requirement, but the high level also imposes higher risks which prevent smaller competitors from entering the industry. Thus, a small business with access to limited capital can enter a competitive industry or build at small scale, but will not compete effectively where large capital requirements act as a barrier to entry.

Regulations are a final source of competitive advantage. For example, at one time the United States government controlled entry into the airlines industry; the government permitted airlines to operate particular routes. Airline deregulation in 1978 eliminated the requirement of obtaining government permission to operate routes. This opened up the industry to free competition. Regulatory changes also create uncertainty for potential new entrants into an industry and thus may discourage their entry. Companies in an industry can collectively create barriers to entry. They can lobby for protective legislation. They can create highly differentiated products or an industry standard. They can require long-term contracts or make agreements with a union that make it difficult for newcomers to compete. They can create high switching costs. And they can restrict access to distribution channels. It is important for managers to understand entry barriers in their industry. They should assess how entry barriers affect the number of new entrants and rivalry in the industry.

Rivalry Among Competitors

Competition and profitability within an industry also depend on the intensity of rivalry among existing competitors. Competitive rivalry consists of dynamic moves and countermoves by competitors to attract buyers and capture a larger share of demand. Every time one firm makes a strategic move it can expect its competitors to retaliate. This retaliation may take the form of changes in product designs, promotional strategies, packaging, advertising, and prices. Price reduction is a commonly-used competitive strategy. However, price wars reduce total industry profits by reducing industry revenues. Thus, fierce rivalry within an industry can be detrimental to its profitability. Rivalry among competitors depends on several factors. They include the number of competitors and their relative power and size distribution, industry growth rate, fixed and storage costs, switching costs, size of capacity augmentation, diversity of competitors, stakes of individual competitors, and exit barriers.

1. Number of Competitors and Their Relative Power and Size Distribution

The total number of competitors is an important determinant of the nature of competitive rivalry. More competitors means more competitive interactions and more rivalry. More competitors also means smaller average shares of the profit pie for each firm. In the early 1990s, the personal computer industry matured into a highly rivalrous, multiple-competitor industry. In this industry, giant companies such as IBM, Digital Equipment Corporation (DEC), and Compaq Computers lost market share to nimbler entrants such as Dell and Gateway. The relative power balance among competitors moderates competitive rivalry. If competitors are nearly equal in size and power, they may tend to avoid direct confrontation. They fear upsetting the industry balance. If they are vastly different in size, larger competitors may encroach on the turf of smaller ones to expand their markets. Industry balance can also be upset by new entrants into the industry and by large changes in the size of competing firms. When these situations occur, the industry experiences many new competitive strategies and retaliations that heighten competitive rivalry. For example, Philip Morris entered the brewing industry by buying Miller Brewing in the late 1970s. This completely upset the competitive structure of the beer industry. It triggered a series of competitive moves by existing beer companies. Smaller brewing companies were bought by larger ones and industry consolidation resulted.

2. Industry Growth Rate

The growth rate of an industry determines the total size of the profit pie. When the industry growth rate is high, the total profits available for sharing among competitors is also high and growing. There is low likelihood of competitors fighting with each other, because each competitor can get sufficient profits to survive. If the industry has matured, its growth rate is low. This limits the size of the total profit pie. For any one firm to do well or improve its performance, it has to capture market share from its competitors. This leads to retaliation and more rivalry among competitors. Thus, pressures of rivalry are lower in high-growth industries. Current examples of such industries are biotechnology and computer software. In contrast, mature, declining, or low-growth industries, such as steel and soft drinks, experience high rivalry.

3. Fixed and Storage Costs

Industries in which fixed costs or storage costs are high experience intense rivalry among competitors. High fixed costs or storage costs can place significant debt burden on firms. They put pressure on firms to liquidate inventories and maintain high-capacity utilization. In such situations, it is important for firms to turn over their working capital quickly and make the best use of their fixed assets. To reduce storage costs and eliminate old model inventory, auto manufacturers routinely discount products, particularly around the end of the year. This often triggers price wars that reduce total industry profits and create higher rivalry among competitors.

4. Switching Costs

Industries with low switching costs have high competitive rivalry. Customers are free to choose and change their suppliers. Continuous switching between products by customers creates high uncertainty for competitors and encourages them to engage in retaliatory moves. The lack of switching costs also makes it easy for consumers to shop around for the best price. This puts the industry under continuous price pressure. Over time, the lowering of prices erodes industry profitability and increases competition.

5. Size of Capacity Augmentation

In some industries production capacity must be added in large sizes. These industries experience more intense competitive rivalry than industries in which capacity can be augmented in small increments. This is so because large-sized new plants are very expensive and require a great commitment of financial resources. To recoup these investments, firms charge higher prices and market their products aggressively to gain market share. This leads to more intense rivalry among competitors. Moreover, each round of capacity addition upsets the balance of supply and demand within the industry. Every time a new plant opens, it creates a large additional capacity. So it is beneficial for one competitor (and then another) to reduce prices, sell more, and improve capacity utilization. This leads other competitors to retaliate and the entire industry gets out of balance.

6. Diversity of Competitors

The more diverse the competitors are in terms of their origins and operating styles, the more diverse their competitive strategies become. Diverse strategies elicit a variety of responses and lead to higher competitive rivalry. Foreign competitors and competitors from other industries increase diversity. They create new competitive moves and new forms of retaliation that increase rivalry. New competitors have different personalities, objectives, and resource bases. They can pursue new strategies to enter an industry, thereby creating an imbalance in the industry. Diversity among competitors also creates higher uncertainty. Existing industry participants do not know the capabilities of new competitors or what to expect from them. The presence of high uncertainty encourages rivalry. The entry of Philip Morris into the brewing industry, mentioned earlier, illustrates this point. Philip Morris entered the slow-moving and mature brewing industry with strong financial and marketing skills that it had mastered in the tobacco industry. It applied these skills to developing new strategies, new packaging, and new product design ideas for promoting Miller Beer. This upset the balance of forces, market shares, and marketing strategies within the brewing industry. Within a few years, Miller became the second-largest brand in the industry.

7. Stakes of Individual Competitors

The willingness of individual competitors to retaliate against others also depends on their stakes within the industry. In today's environment, most large corporations operate in multiple industries. This allows them to diversify their risks. Nevertheless, if a company has unusually large stakes in any one industry, it will pay more attention to strategic changes within that industry. If there are any threats to its performance within the industry, it is likely to retaliate with much greater vigor. For example, Coca-Cola diversified into the soft drinks, wine, and entertainment industries. It had very large stakes in the soft drinks industry and smaller stakes in wine and entertainment. It reacted more aggressively and immediately to challenges to its market position in soft drinks than it did to threats to the other two industries where it had smaller stakes. In fact, even a decline in its market share in the soft drinks industry evokes a strong response from Coca-Cola which has a large emotional commitment to dominating that beverage segment.

8. Exit Barriers

Exit barriers refer to costs or other obstacles that prevent or discourage a firm from departing an industry. These include high unrecovered fixed costs, labor commitments, unsold inventories, and a strategic interdependence among businesses. Sometimes there are emotional and psychological barriers to exit. If a company has been in an industry for a long time, its management may become committed to staying in it. The company may continue operating in an industry, even when it is not profitable to do so. Undesirable assets are also difficult to dispose and established management might know more about running the business than a potential buyer. In industries where exit barriers are high, competitors face higher rivalry. This is because firms unable to exit from the industry must remain in it and do the best they can even when conditions are undesirable. Firms thus stuck in the industry try to survive through aggressive and desperate price competition. The most important point to remember about rivalry among competitors is that it changes continually. The entry of one or two competitors can completely change the balance of rivalry within the industry.

Bargaining Power of Buyers

Buyer power refers to the ability of purchasers to get favorable terms of trade with sellers. Powerful buyers can get attractive price discounts, better credit terms, better product quality, and more product support services from industry suppliers. Because these concessions are costly, they have the effect of reducing industry profits. Buyers attempt to get the best value for their money, and by so doing they put downward pressure on industry profitability. The power of buyers depends on several factors: buyer concentration, degree of product differentiation, buyer switching costs, access to backward integration, impact of the product on the buyer's product quality, and the amount of information available to the buyer.

1. Buyer Concentration

Industries that have a high concentration of buyers (i.e., an oligopoly with only a few large buyers) are too dependent on them. Buyers in these industries can be very powerful and can extract better products, prices, and terms of trade from the industry.

For example, key buyers for diskette drives are the few large computer companies that manufacture personal and mini-computer systems. Some larger buyers, such as IBM and DEC, wield enormous power over suppliers. Similarly, Sears, Roebuck brands consumer products with its own name. It buys in large quantities and is able to exert great influence on its vendors. It virtually dictates product specifications, packaging, price, delivery terms, and payment terms. In contrast, in industries that have a large number of buyers each customer tends to be small. Small individual buyers cannot exert much pressure on the industry. Such is the case in the personal products and cosmetics industry. The industry has large suppliers such as Avon, Mary Kay, and Estee Lauder. Buyers in this industry are individuals who buy in small quantities. They have neither the power nor the inclination to elicit attractive terms of trade from the sellers.

2. Degree of Product Differentiation

High degree of product differentiation has the effect of limiting buyer power. In industries with highly differentiated products, most products have unique features. To obtain certain product features, buyers may have no choice but to buy from a specific manufacturer. For example, fighter airplanes are a highly differentiable product. Buyers seeking to buy planes with specific characteristics have a limited choice of manufacturers. Thus they have limited power to influence the terms of trade. In contrast, the degree of differentiation in luggage bags is low. Luggage buyers have the flexibility of buying from virtually any manufacturer in the industry. This increases the buyer's ability to negotiate better terms.

3. Buyer Switching Costs

Another factor that determines the bargaining power of buyers is switching costs. If switching costs are low, dissatisfied buyers can easily move from one supplier to another. Their flexibility in choosing among alternative sellers is a source of power. It gives them an advantage in negotiating better business terms from suppliers. On the other hand, if switching costs are high, buyers are locked into specific suppliers. They cannot insist on better terms of trade. Thus, higher switching costs limit the bargaining power of buyers.

4. Access to Backward Integration

Backward integration by a company is the strategy of acquiring raw materials or manufacturing subassemblies that go into its products. Consider automobile manufacturers. They normally buy carburetors, tires, batteries, shock absorbers, and so forth from ancillary suppliers. It is feasible, however, for automakers to integrate upstream by manufacturing these supplies themselves. If buyers of an industry can easily make (rather than buy) their own supplies, they gain bargaining power over the industry. The threat of backward integration is real only with powerful buyers—those with the financial clout and technological capability to manufacture their supplies.

5. Impact of Product on Buyer's Product Quality

When a product serves as an input into other products, it can severely affect the quality of the end product. In such cases, buyers have limited power over producers. While buyers have a large incentive to exercise some measure of control over such an important resource, they are willing to give the producing industry better terms of trade to ensure that they receive the best-quality products. For example, fuel injection systems used in automobiles are a sophisticated, precision-made product. The automobile industry purchases these fuel injection systems from independent suppliers. Effective performance of these systems is critical for the performance of the expensive automobiles that use them. Automobile manufacturers have limited power over these suppliers because the quality and precision of this product is vital to them. They are willing to pay higher prices and give better terms of trade these suppliers demand to ensure the right quality and delivery schedules.

6. Amount of Information Available to the Buyer

The power of buyers critically depends on the amount of information they have about product quality, cost structure, and performance characteristics. The buyer can use this information to negotiate better terms of trade with suppliers. The more information the buyer has, the more likely the buyer will extract better terms of trade from the industry. Better terms of trade for buyers means less revenues and profits for the industry. In large companies, buying is now a specialized task handled by professional purchasing departments.

Bargaining Power of Suppliers

Suppliers of raw materials influence industry profitability and competition by affecting the cost of production. If suppliers are powerful, they can obtain high prices for the raw materials they provide. They may also negotiate favorable terms of trade. They can decide product features, packaging, payment schedule, credit terms, transportation, insurance, and delivery costs and schedules. The bargaining power of suppliers depends on the same variables that shape the bargaining power of buyers. These include concentration of suppliers, importance of industry to suppliers, threat of forward integration, access to other sources of supply, and the nature of labor supply.

1. Concentration of Suppliers

Just as the number of buyers was a determinant of buyer power, the number of suppliers is a crucial determinant of supplier power. If an industry has many suppliers, it has the option of buying from many different sources. Suppliers try to meet industry requirements, but they lack power because they are substitutable. In the opposite case where there are only a few suppliers to the industry, customers are more dependent on each one. Suppliers can demand and get favorable terms of trade from the industry. For example, defense contracting firms are limited in number. Each firm specializes in a narrow set of products or services. Such firms are able to charge the government premium prices for their expertise and equipment.

2. Importance of Industry to Suppliers

Another factor that determines the bargaining power of suppliers is how important the industry is to them as a customer. If the industry consumes a large part of the suppliers' output, it would be considered important. The suppliers would be willing to meet the industry's demands for better terms of trade. If the industry is not an important buyer, then it would have limited bargaining power. For example, the automobile industry is an important customer of the rubber tires industry. Tire manufacturers work closely with auto manufacturers and attempt to meet their requirements on product quality, delivery, and payment terms.

3. Threat of Forward Integration

Forward integration refers to a company entering downstream businesses that bring its finished goods closer to customers. For example, if a steel manufacturer starts producing steel furniture, it would be integrating forward. Similarly, petroleum-refining companies integrate forward into oil distribution by buying gas stations. If industry suppliers can enter the industry through forward integration, they increase the intensity of competition. New entrants mean more competing firms, each sharing a smaller part of industry profits. The entry of suppliers into an industry jeopardizes the competitive position of existing industry participants. The new entrant has better control over supplies. Credible threats of forward integration from suppliers enhance their bargaining power. Forward integration is a threat only if suppliers have enough financial, marketing, and technological resources to enter the industry. For example, silicon chip manufacturers such as Intel, Motorola, and Advanced Micro Devices supply microprocessor and memory chips to the personal computer (PC) industry. They are a perennial threat to PC manufacturers because they control the development and supply of the most crucial PC components and they could assemble computers with relatively minor effort.

4. Access to Other Sources of Supply

Access to alternative sources of supply reduces the bargaining power of suppliers. Sometimes an industry can substitute products from current suppliers with products from other industries. Or an industry may be able to buy from foreign suppliers. New technologies or shifting market requirements or demands might even obsolete current supplies. Suppliers are thus pressured to give the industry good terms of trade. For example, bottlers of soft drinks can buy containers made of glass, plastic, metal, paper, or composite materials. Each of these supply industries knows it is interchangeable and therefore vulnerable.

5. Labor Supply

In labor-intensive industries scarcity of necessary workers can be an important bargaining chip. The strength of labor unions, government regulations, and labor market conditions influence the cost of labor. In highly unionized industries, such as

automobiles, steel, and construction, strong labor unions control the supply and price of labor. In these industries, manufacturers have little flexibility in changing the cost of labor; they have to pay high wages and provide certain working conditions. This increases their cost of production and reduces profitability.

Threats from Substitute Products

The final element that affects industry competition and profitability is the pressure from substitute products. Substitute products erode the sales and revenues of the industry. They may even eliminate demand for an industry's product altogether. Industries with products that can be easily replaced by products from other industries are always under revenue and profit pressures. For example, the invention of ballpoint pens in the 1950s severely cut into the sales of fountain pens. Within a few years the total demand for fountain pens declined by 80%. Similarly, mechanical pencils are a substitute for ordinary wooden pencils; they continue to displace the demand for pencils. More recently, compact disk players are replacing record players. In contrast, if an industry's product is unique and serves very unusual functions, it cannot be substituted easily. An example of this is the CAT (computerized axial topography) scanner. This is such a highly specialized instrument that it faces no threat of substitution by other products.

Besides product substitution, another form of substitution can create pressure on industry profitability and competition. Substitution of new raw materials, components, and subassemblies directly affects the cost of manufacture. GM substituted cheaper, but functionally equivalent, plastics for expensive brass and metal alloy components. This reduced GM's materials costs and the weight of its cars. It also gave GM a competitive advantage over other carmakers. Changes in production costs create wider price variation in the industry and increase competitive rivalry. We will now look more closely at competition within industries.

To formulate competitive business strategies, it is essential to understand the structure of competition and the determinants of industry profitability. There are many views of how competition works within industries. Chamberlin and his colleagues viewed competition as a **resource-based** phenomenon. They identified three basic types of competitive firms: monopolies, oligopolies, and perfectly competitive firms. In these

situations, a single firm, a few large firms, or many similar-sized firms, respectively, controlled the market. Schumpeter saw **technological revolutions and product-market shifts** as key determinants of capitalistic competition and economic change. A third view of competition is the **industry/organization** model. This view yields a more detailed understanding of the economic structure and the complex dynamics of competition. It holds that the competitive structure of an industry and the conduct of firms within it influence financial returns in the industry.

Many structural forces shape industry competition. **Threats to entry** into the industry, one of these forces, are a function of entry barriers. Important entry barriers include economies of scale, product differentiation, switching costs, and access to distribution channels. There may also be miscellaneous barriers such as technology patents, raw materials monopoly, and changing government regulations.

A second structural force is the **intensity of rivalry** among existing competitors. Fierce rivalry within an industry is detrimental to its profitability. More competitors mean more interactions and more rivalry. Factors that influence competitive rivalry include power balance among competitors, industry growth rate, fixed and storage costs, switching costs, size of capacity augmentation, and origins and style of competitors. Higher exit barriers also tend to increase competitive rivalry.

Bargaining power of buyers is another determinant of competitive structure. The power of buyers puts downward pressure on industry profits. A high concentration of buyers makes industries dependent on a few buyers. Highly-differentiated products limit buyers' power. Low switching costs increase buyers' power. If buyers of an industry can easily manufacture products of that industry, they gain bargaining power. Sometimes a product has an important impact on the quality of buyers' final product, reducing their bargaining power. Similarly, the **bargaining power of suppliers** influences industry profitability and competition. It affects costs of production. The concentration of suppliers, importance of the industry to suppliers, threat of forward integration, access to other sources of supply, and labor conditions influence supplier power.

Pressure from **substitute products** as well as material substitution create pressure on industry profitability and competition. Cheaper substitute materials lower the cost of production for some industry participants and make them more competitive.

All of these industry conditions – those emanating from the industry's external context and its internal structure – evolve over time. Supply and demand conditions change, and firms enter and exit to accommodate new market requirements. In essence, the industry goes through a **life cycle** similar to company and product life cycles. It is born, grows, and fades. As the industry evolves, new firms will exploit opportunities by competing in a unique niche or capturing an advantage as a buyer or seller. It is difficult to predict the duration and shifts of an industry's life cycle, but excess profits are often temporary as its structural forces change. In the long run, competitive dynamics force prices down so profit levels adjusted for risk tend to achieve a uniform level for most competitive industries. Knowing this, firms should strive to erect sustainable advantages that protect them from shifts in the industry's context and forces.

2.4.2 Generic strategic for competitive advantage (CA)

Based on the analysis of the industry structure a firm can choose a strategy to gain competitive advantage over its rival. Competitive advantage grows fundamentally out of value firm is able to create for its customers that exceeds the firm's cost creating it. Value is what customers are willing to pay, and superior value stems from offering lower prices that competitor for equivalent benefits or providing unique benefits that more than offset a high prices.

A firm can have 2 basic types of competitive advantage:

- 1) Lower cost
- 2) Differentiation

These, combined with the firm's competitive scope, or the breadth of activities which a firm seeks to achieve within its industry from the three generic strategies which lead to superior performance in an industry: cost leadership, differentiation and focus has 2 variants, cost focus and different focus.

Cost leadership

The generic strategy of cost leadership aims to establish superiority in the retail market by becoming a low-cost producer in the construction's equipment industry. This means that a firm to be a cost leader performs its operation or services at the lowest costs compared with its competitors. A firm sets out to do this by gaining the ability to design, produce or execute and market a comparable product or service more efficiently than its competitors. At equivalent or lower prices than its competitors, a firm's lower costs translate into superior returns.

Differentiation

This generic strategy pursues a condition where a firm offers a unique and superior product or service along some dimensions that are valued by customers. Differentiation allows a firm to earn high returns by commanding a premium price. By differentiating, a firm can establish a defensible position against the 5 competitive forces in the industry.

Focus

The choice of a focus strategy directs a firm to focus on a narrow competitive scope within a construction's equipment industry. Its action plan is to target a particular group of customers, a specific type of product or service, or a certain geographic market and meet their needs better than the competitors. The cost focus as a variant seeks a cost advantage in the target segment, while the differentiation focus aims to differentiate in the target segment.

2.5 Impact of Technology on Industry Structure.

- Individual and marketing Influences.

Retailers have become accustomed to investing millions of dollars in the latest software and hardware systems to support mission critical operational systems. In fact, the logistical side of most successful retail information solutions reflects top-notch thought and organization. These organizations have implemented highly sophisticated systems that control the flow of merchandise throughout the enterprise, and also feature planning, budgeting, forecasting and reporting systems. Most have sophisticated merchandising systems that support a vast number of internal buyers and the vendors they buy from. Store transactions are also well covered, with new POS

(Point Of Sales) systems sitting on store counters collecting enormous amounts of data. Many retail chains have also spent millions of Bahts on Enterprise Resource Planning (ERP) systems that improve accounts payable, general ledger and other accounting functions.

Yet these systems generally operate on different IT platforms that do not communicate with each other. At most companies, the information in these systems is not effectively integrated into a common “analytical layer” that utilizes common databases and information delivery mechanisms. As a result, even at the biggest retail chains, the larger dimensions of CI (Customer Intelligence) — analytics, applications and platforms — can be surprisingly archaic.

Often, information is not shared beyond the confines of any single corporate group. For example, reporting typically requires re-keying information into basic spreadsheets. Furthermore, financial teams in different units may be cut off from store managers, who traditionally have done their “analysis” through hard-copy reports mailed to them by the home office after the information is potentially several weeks old. However, with the advent of the web and sophisticated analytical applications that run through a browser, reporting and analysis can be pushed to the front-lines where store managers and associates are able to access and act quickly on the information. This creates the potential for collaboration between skilled analysts at corporate and valuable resources in the field.

For example, one large chain uses Arthur planning software for its merchandise planning by Oracle for its expense planning. The company spent millions on each system, but the programs do not integrate. As a result, basic information such as Department store and new store sales plans must constantly be extracted between the systems, or re-keyed from hard-copy reports. Unfortunately, this lack of integration between Merchandise and Operations Planning is the rule rather than the exception for most retailers.

- A relational database layer that supports meta-data and more granular-level information for more detailed analysis.
- An Online Analytical Processing (OLAP) database layer that provides speed-of-thought access to more summarized information with read-write capabilities to support modeling and planning.

- A delivery layer that consists of common interfaces across the enterprise, capable of easily communicating with the underlying databases that support them.

- **Consumer behavior due to Customer demands drive change.**

Customers have become more demanding than ever before and will continue to become more demanding in the future. As a result of continuous improvements in service capabilities and responsiveness, customers expect their orders to be delivered on time, wherever needed, and in the manner they want it -- without exception. These escalating customer expectations have placed a significant burden on those companies still struggling to gain control of, and leverage, their value-chain operations.

Competing on price is becoming less and less a choice, and quality is the price of participation. To compete successfully, companies are finding that they must distinguish themselves with superior service throughout the entire business cycle -- from the buying experience to the delivery experience. For many products, the Internet has effectively eliminated the cost of changing suppliers -- the competition is just a click away. To be a market leader today, companies must strive for execution excellence, measuring success via customer retention. Because the Internet has lowered the cost of changing suppliers, companies are forced to differentiate themselves with superior service and consistent delivery performance. The rise of e-commerce also has forced companies to increase the velocity and responsiveness of their value chains in order to rapidly respond to changing demand and supply conditions. As customers, products, and business models continue to change, fulfillment processes will need to be increasingly flexible and capable of accommodating new initiatives. So Information Systems has a main role to help many Thai retail businesses to alleviate the problems as well as increase sales volumes, improve customers' satisfaction in the Thai retail business in term of construction equipments.

CHAPTER III: PROJECT METHODOLOGY

3.1 Sample size background and characteristics.

Sample size is one of the important things when we conduct the questionnaires because it can help us to do projects and know what is going on wage of Information Systems in the Thai retail companies in terms of construction equipments. So sample size background for this project focuses on the people who are in the Thai retail business in term of construction equipments. The age should focus on 25-50 years, because they may be the owners of their retail business and other related jobs in this industry. Moreover, we identify the education from below bachelor degree until doctorate degree to know the effects of education, ages and sex are effected in the Thai retail companies. The reasons we identify the education since below the Bachelor degree because some of the Thai retail owners may not have a Bachelor degree but they can be the owners of their shops so we provided 100 questionnaires to people who are in Thai retail companies in term of construction equipments in order to know what is the real problem and what they think about the suitable solutions that may or may not involve the Information Systems and know what they think about Customer Intelligence (CI) to solve the problems as well as increase customers' satisfaction.

3.2 Scope of Study.

This project concentrates on 100 Construction equipments Companies in Bangkok by using questionnaires through Thai retail companies and HomePro. The project will focus on the tools to help Thai Construction equipments in retail business. By the way, construction equipments in Thai retail business a wide range of products, so it's impossible to cover all construction equipments products. Therefore, only a few products are chosen for this study.

3.3 Data Collection Method.

This study covers all technique we use as following:

Data collection:

- **Tools:**

We are also analyzing our questions and provide a *communication study*, collecting information through questionnaires. 100 questionnaires in construction equipments in Thai retail business with close-ended questions by separating it into 2 categories by: 70 questionnaires for Thai retail business and 30 questionnaires for

Home Mart and HomePro. After we get the possible results through questionnaires, we can use SPSS as the tool to formulate in order to be more accurate with the results.

Respondents:

In order to get the possible results from 100 respondents, we have to go in the real situation to observe the prices of all construction equipments in Thai retail business. The target of this project concerns the owners of construction equipment shops and the managers of many Superstores in Bangkok and sub-area.

- **Data Analysis:**

By analyzing our questionnaires, we use Descriptive Analysis in order to analyze our responsiveness, so this project employs both primary and secondary data, which are related to the subject being studied:

Primary data:

The data had been obtained through detailed questionnaires, so this project is quantitative; all questions were close-ended, and the idea was to investigate and analyze after gathering information.

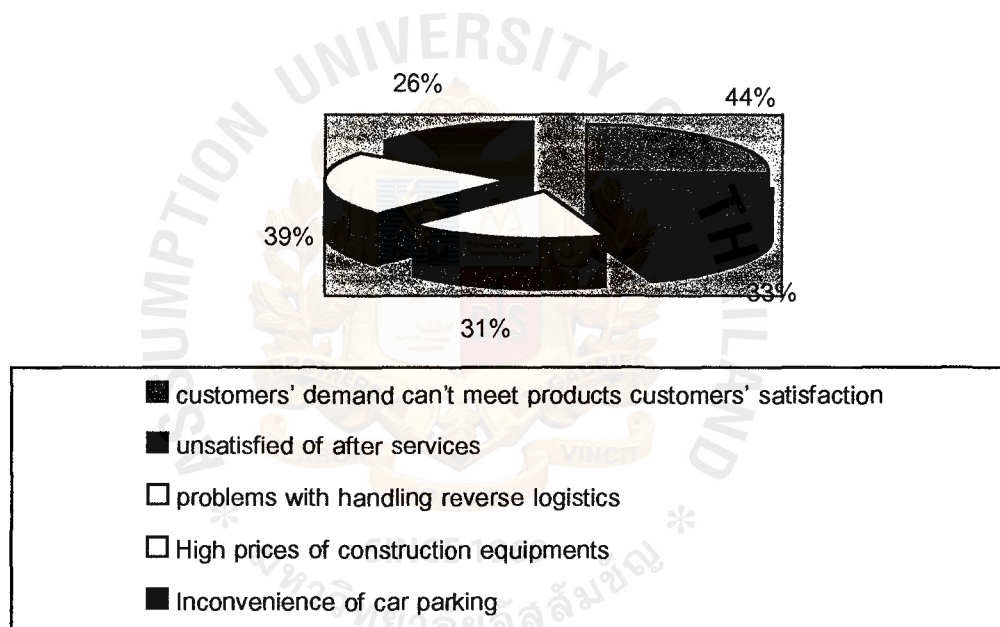
Secondary data:

Our secondary data was collected through annual report and other publications of many companies. Other journals, magazines and textbooks related to this topic as well as from other official documents and reports were also useful.

CHAPTER IV: THE ANALYSIS OF CUSTOMER INTELLIGENCE FOR CONSTRUCTION EQUIPMENTS OF SMALL RETAIL BUSINESS IN THAILAND.

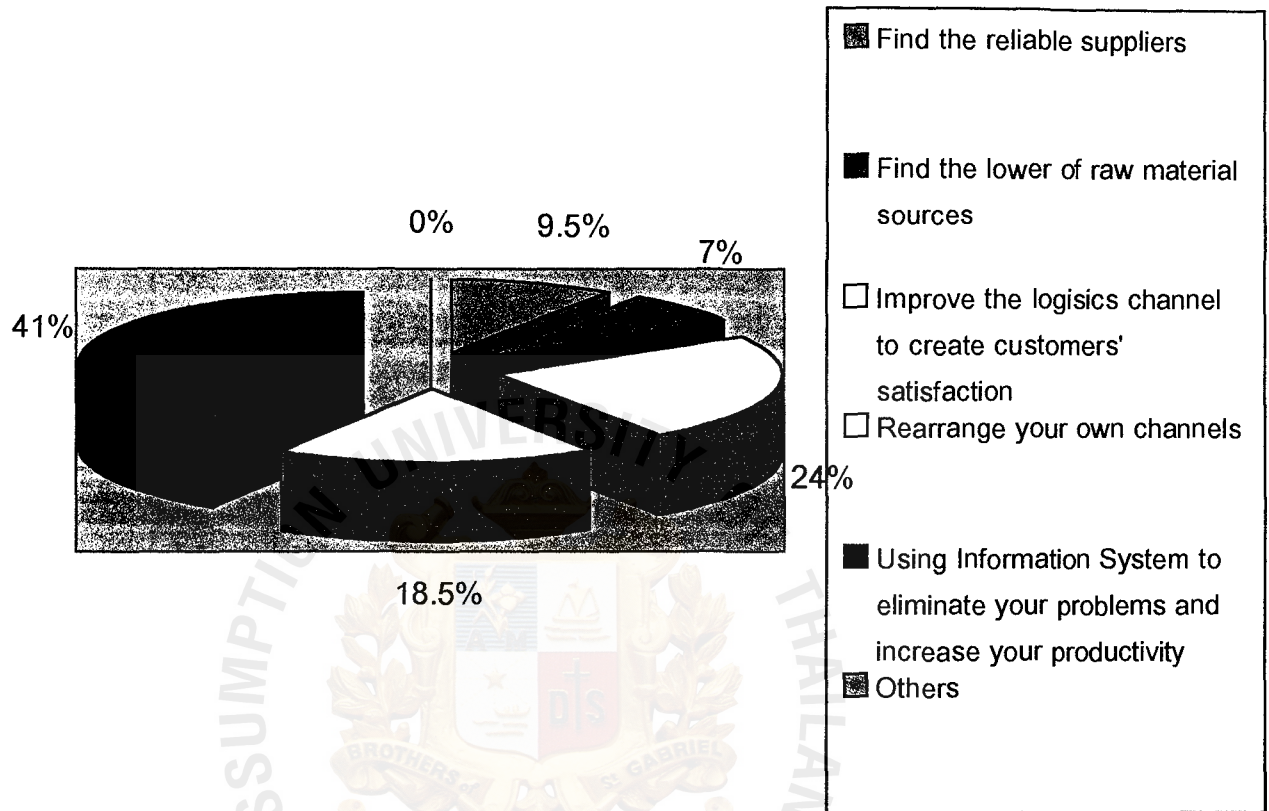
This part is provided with analysis of 100 questionnaires from Customer Intelligence for Construction Equipments of Small Retail Business in Thailand by separate into each category as following:

1. The problems in your organization according to your inventory system and services to customers



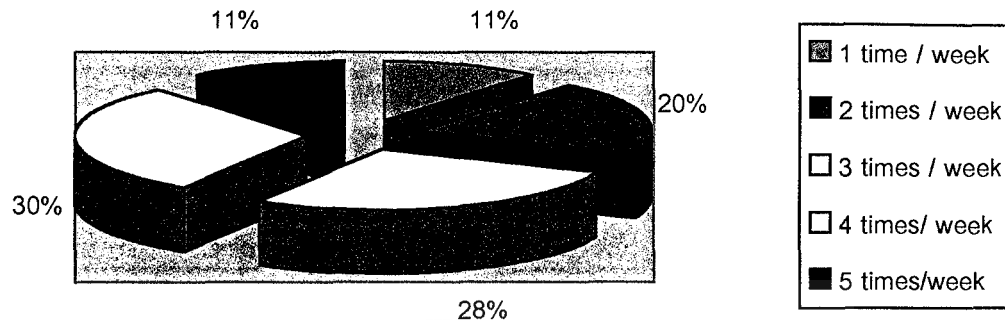
After we got 100 questionnaires we can see that customers' demand can't meet products customers' satisfaction are the most important at 44% and the second is unsatisfied of after services 33%, the third is problems with handling reverse logistics 31%, the forth is High prices of construction equipments 39% and the last one is Inconvenience of car parking 26%.

2. The solutions they think are the best ways to eliminate your problems in their organizations.



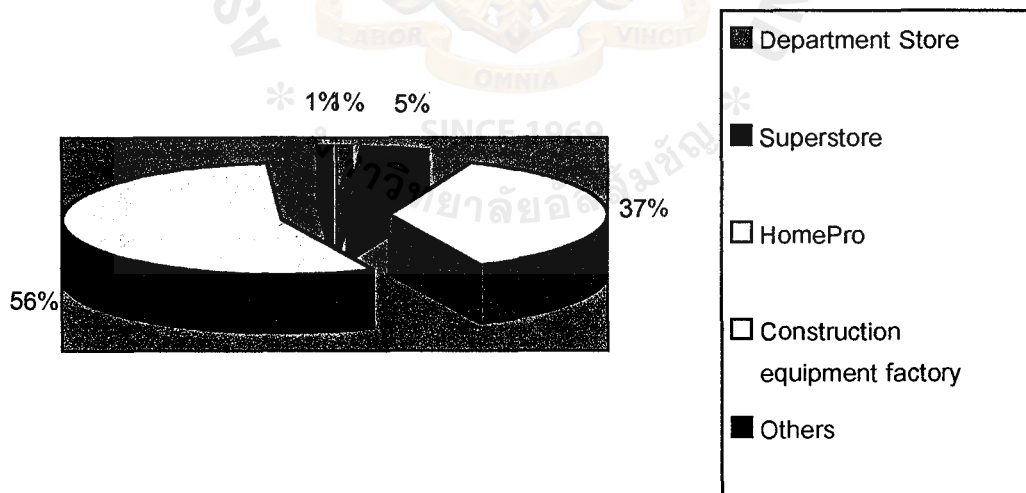
They think that using Information System to eliminate your problems and increase your productivity is the most important with 41% and the second is improve the logistics channel to create customers' satisfaction 24%. The third is rearrange your own channels 18.5%, the forth is find the reliable suppliers 9.5% and the least important is Find the lower cost of raw material sources 7%

3. The frequency when they order construction equipments from their suppliers.



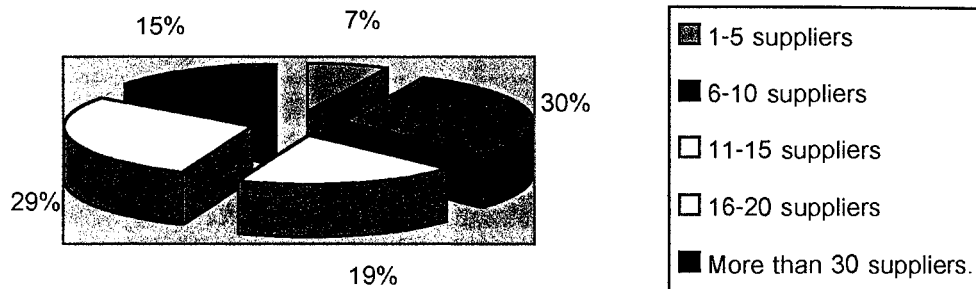
Most of small retail businesses have 1 time/week at 11%, 2times/week at 20%, 3times/ week at 28%, 4 times/week at 30% to order construction equipments from their suppliers at 30%

4. The place where most of retailers order construction equipments.



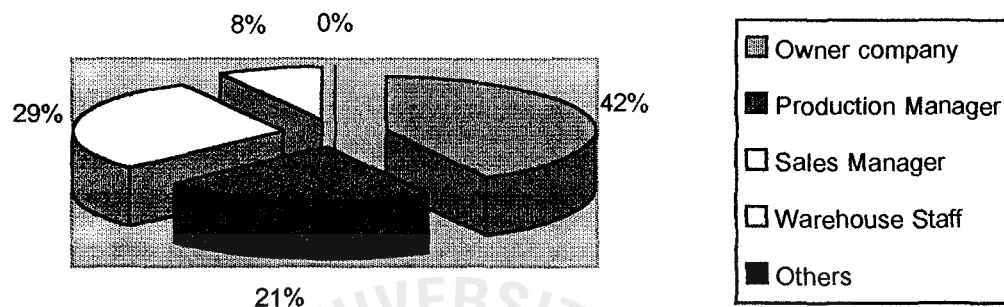
The Thai retailers order construction equipments from Department store 1%, Superstore 15%, HomePro 37%, and construction equipment factory at 56%.

5. The amounts of suppliers they have.



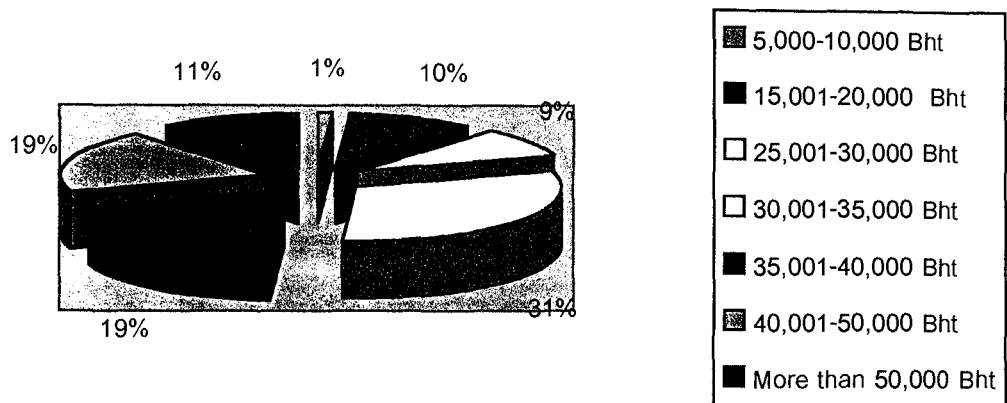
Most of them have 1-5 suppliers at 7%, 6-10 suppliers at 30% , 11-15 suppliers at 19%,and 16-20 suppliers at 29%, more than 30 suppliers at 15%.

6. The decision-maker when the retail business has to order the products from suppliers.



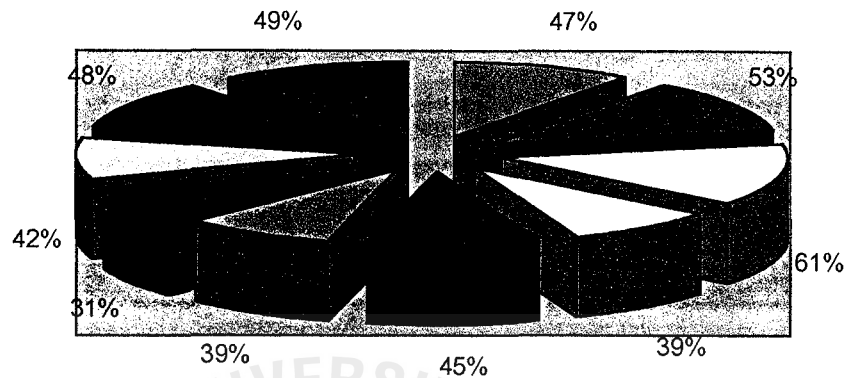
Most of the owners of small retail business are decision-makers when the organization has to order the products from suppliers at 42%, Production Managers 21%, Sales Manager 29%, and Warehouse staff 8%.

7. Estimate budgets when they order when you buy construction equipments.



Most of retail business have cost about 5,000-10,000 baht at 1%, 15,001-20,000 Bht at 10%, 25,001-30,000 Bht at 9%, 30,001 Baht – 35,000 Baht per time when they have to order construction equipments from suppliers at 31%, 35,001 Baht – 40,000 Baht and 40,000-500,000 Baht up at 19%, more than 11%.

8. The criteria they use in order to make decision when you select suppliers

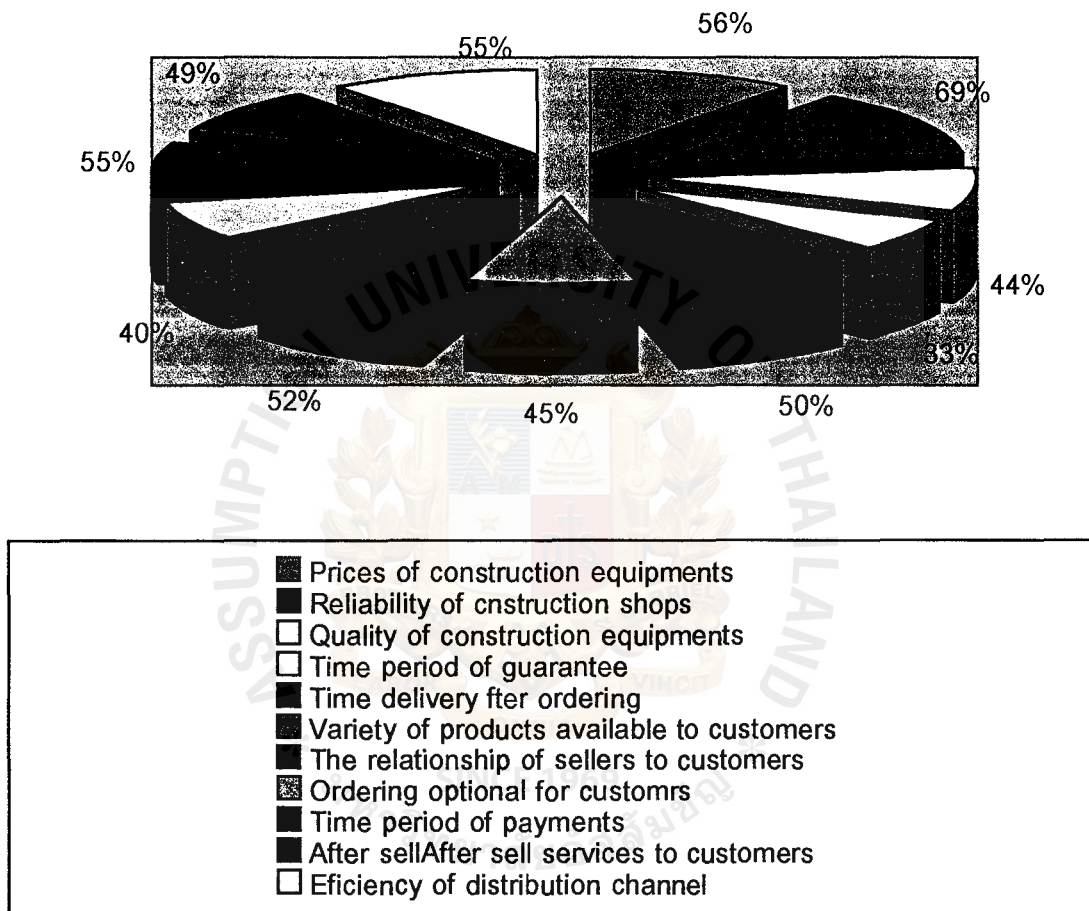


- Price of construction equipments
- Reliability of construction shops
- Quality of construction equipments
- Time period of guarantee
- Time delivery after ordering
- Variety of products available to buyers
- The relationship of suppliers and buyers
- Ordering optional for buyers e.g. ordering by phones through catalogs from factory
- Time period of payments
- Efficiency of distribution channel

Thai small retail business are emphasize on prices of construction equipments at 47% Time period of guarantee 39% as the most important criteria when they make decision to select suppliers. Reliability of construction shops is important at 53%; quality of construction equipments is the highly important at 61%, time delivery after ordering is important at 45% and also with variety of products available to buyers at 39%. The relationship of suppliers and buyers is rather important and time period of payments but not much at 31% and 48%. Ordering optional for buyers e.g. ordering by

phones through catalogs from factory and efficiency of distribution channel is highly important at 42% and 49%.

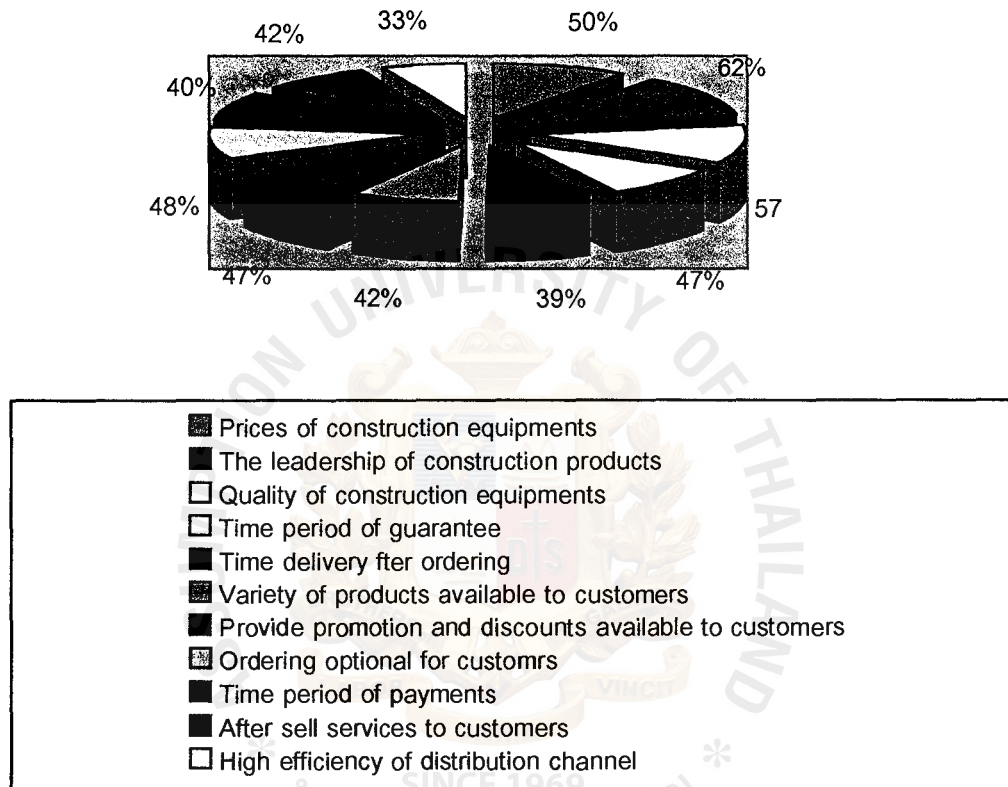
9. The criteria they think as the competitive advantage over their competitors.



The criteria they think, as the competitive advantage over their competitors is one of the important that most Thai retail business always emphasize now. Because if they have the good competitive advantages over than competitors they can increase sales volumes as well as create customers loyalty to customers and increase more customers' satisfaction. By the way, most of Thai retail businesses are highly emphasized about Prices of construction equipments at 56%. Reliability of construction shops are important at 69%, quality of construction equipments, time period of guarantee, time delivery after ordering, variety of products available to customers, the relationship of sellers and customers, ordering optional for customers

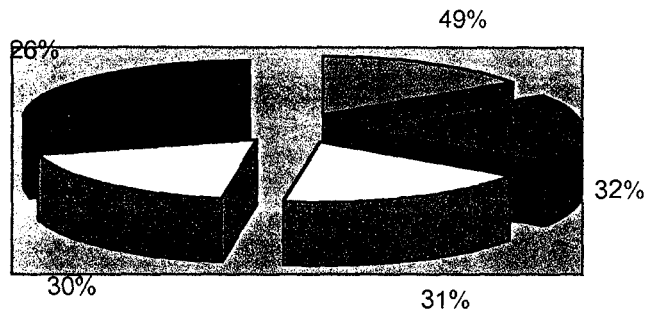
e.g. ordering by phones through catalogs, and Efficiency of distribution channel are also important at 44%, 33%, 50%, 45%, 52%, 40%, 49%, and 55% consequence. The last one is Time period of payments is highly important at 49%

10. The criteria they think as the marketing strategies in their organization



There are many criteria that are important in Thai retail business that are the leadership of construction products at 62%, quality of construction equipments at 57%, time period of guarantee 47%, time delivery after ordering at 39%, provide promotion and discounts available to customers at 47%, time period of payments at 40%, high efficiency of distribution channel at 33%. Moreover, they also think that prices of construction equipments are highly important by 50% and ordering optional for customers e.g. ordering by phones through catalogs at 48%. Varieties of products available to customers are rather important at 42%, and after sell services to customers is the least important at 42%.

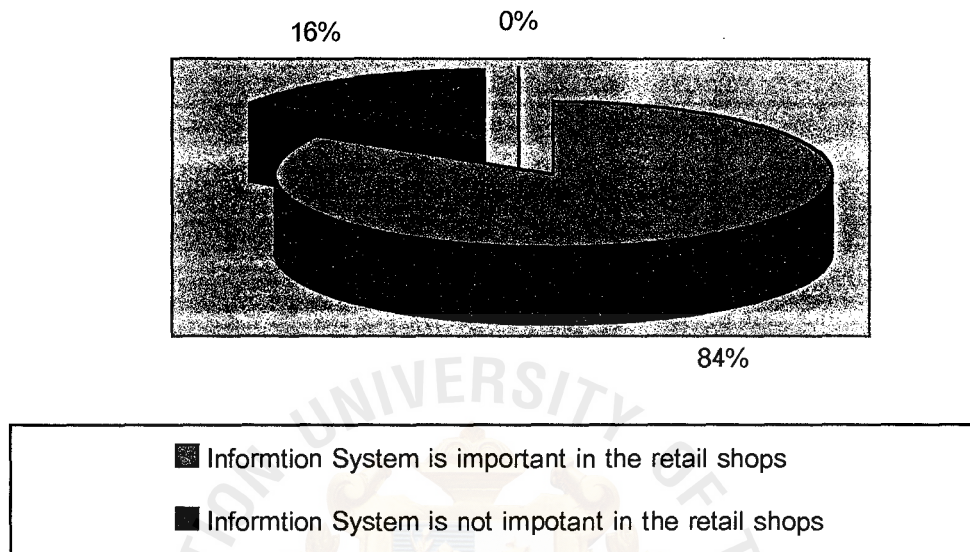
11.The marketing strategies they think is the best strategies in their retail business



- ☒ No.1 The high quality construction equipments
- ☒ No. 2 The focus of construction equipments' price in the retail shops
- ☐ No.3 The high efficiency of distribution channels
- ☐ No.4 The differentiation of construction products from competitors.
- ☒ No. 5 The leadership of construction and products available to customers in retail shops.

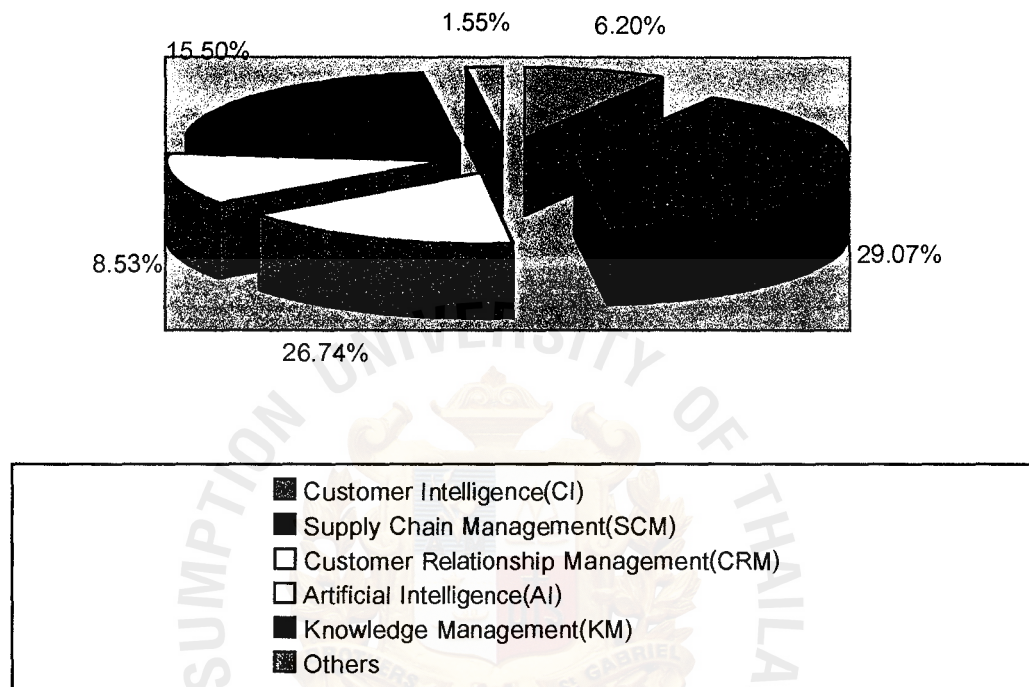
Most of Thai retail businesses think that the high quality of construction equipments is the most important as 49% and the second is the focus of construction equipments' price in the retail business at 32%. The third is the high efficiency of distribution channel at 31%. The forth is the differentiation of construction products from competitors at 30% and the least important is the leadership of construction and products available to the customers in the retail business at 26%

12. What they think about Information System is one of important thing to help them to solve problems as well as increase sales volume in retail business.



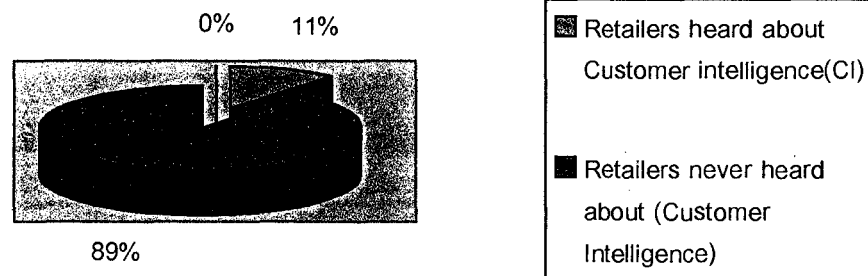
The numbers of Thai retail business think about Information System is one of important thing to help them to solve problems as well as increase sales volume in retail business at 84% because they think that it can help them to alleviate the problems as well as increase productivity and sales volumes by applying these kinds of technology into their organization. But some are not agree to apply of these things about 16% because they think that it may high costs and take times to apply of these kinds of technology.

13. What Information System that they think it can improve productivity and create customers' satisfaction according to their needs.



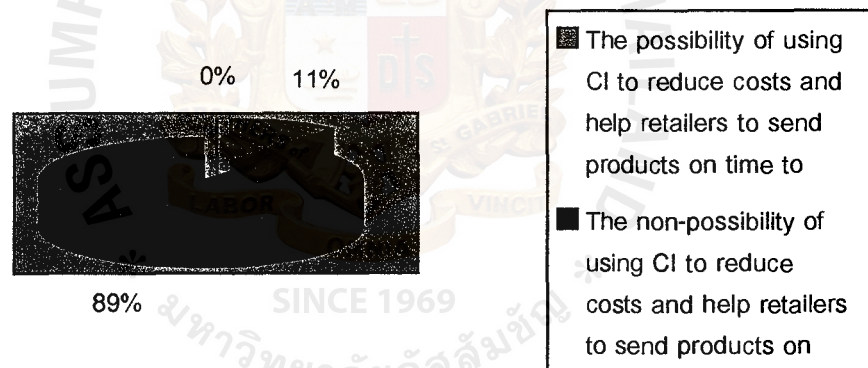
Most of small Thai retail business thinks that Supply Chain Management (SCM) is the most important Information System that can improve productivity and create customers' satisfaction at 29.07%. Because they have heard from many medias about these kind of Information System that can help them in their organization. The second is Customer Relationship Management (CRM) at 26.74% and the third is Knowledge Management (KM) at 15.50%. By the way, most of Thai retail businesses haven't heard much about **"Customer Intelligence"** at 81% never heard about this. Only 14% of Thai retail businesses have heard about **"Customer Intelligence"**. So the possibility of **"Customer Intelligence"** can reduce costs and help them to send product on time to customers is only 12% from 100 questionnaires and 86% of 100 questionnaires identify unknown of Customer Intelligence in the retail business in term of construction equipments and 2% is not agree to use Customer Intelligence in their retail companies.

14. How Thai retailers have heard about **Customer Intelligence**?



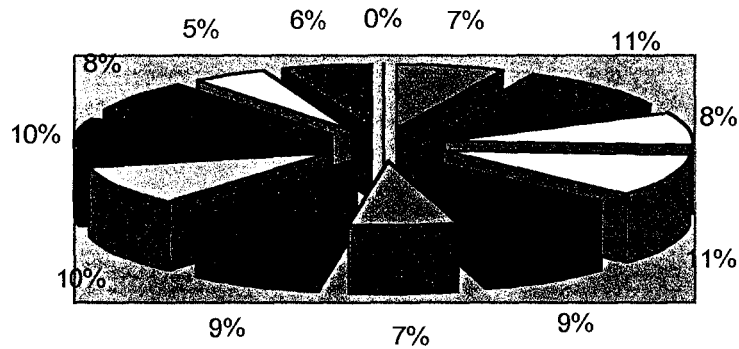
Most of Thai retailers have ever heard about Customer Intelligence (CI) 11% and never heard about it at 89%

15.The possibilities to use Customer Intelligence (CI) that can reduce costs and help retailers to send products on time to customers.



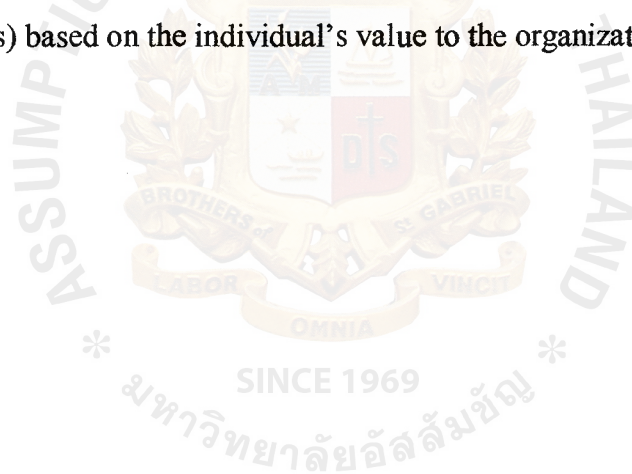
The possibility of using CI to reduce costs and help retailers to send products on time to customers at 11% and The non-possibility of using CI to reduce costs and help retailers to send products on time to customers at 89%.

16. How “Customer Intelligence” can take advantages better than competitors in the retail business.



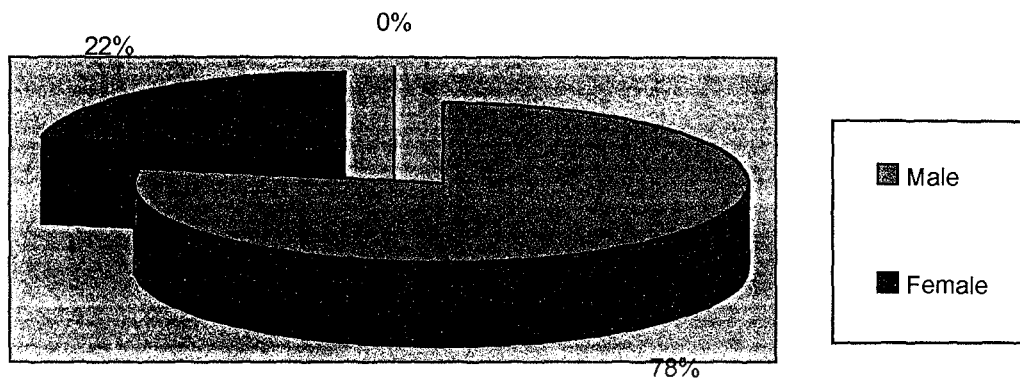
- ☒ Create customer and prospect profiles from both traditional and e-business channels
- ☒ Identify your most profitable customers
- ☐ Discover and plan how to communicate with customers
- ☐ Optimize multichannel marketing campaigns
- ☒ Anticipate and drive customer needs
- ☒ Better relationship with suppliers
- ☒ Better relationship with suppliers Better relationship with suppliers
- ☒ Better efficiency of distribution channel
- ☒ Predict likely customers behavior and response to retail shops
- ☒ Determine the stream of expected future profits from individual or groups

From the 100 questionnaires, it shows that 86% are ignorant about these kinds of Customer Intelligence. But some opinions of the people who are in the Thai retail business agree to use Customer Intelligence because it can be highly important in terms of create customer and prospect profiles from both traditional and e-business channels at 7%, identify your most profitable customers at 11%, discover and plan how to communicate with customers 8%, anticipate and drive customer needs, and better relationship with sellers and customers at 9%, better efficiency of distribution channel and predict likely customers behavior and response to retail business at 10%, and the last one is promote additional products to individual customers based on their unique profile of customers through customer intelligence at 5%. But some think that optimizing multichannel marketing campaigns is important at 11% as well as better relationship with suppliers at 7%, determine the stream of expected future profits from individual or groups of customers 8% and the least important is reducing customer defection by providing customized services (content, special offers and loyalty programs) based on the individual's value to the organization at 6%.

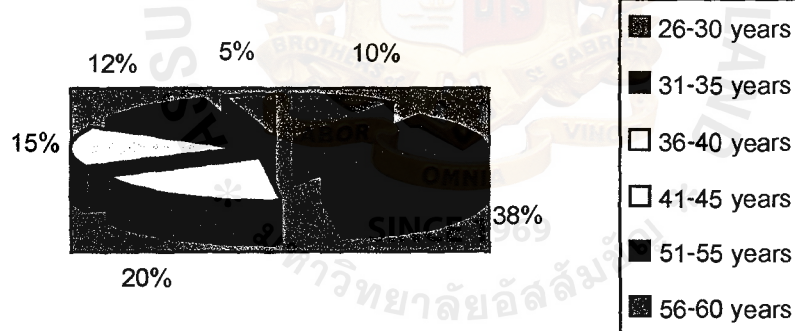


General Information:

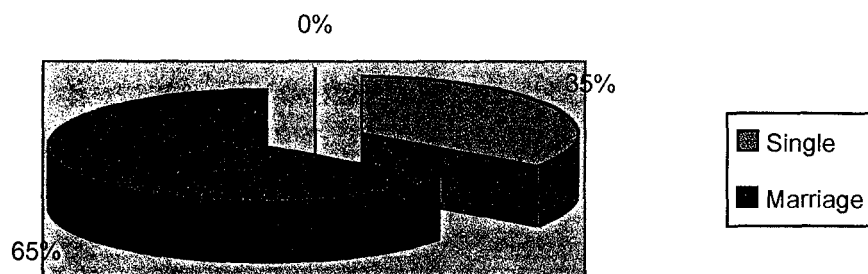
Gender:



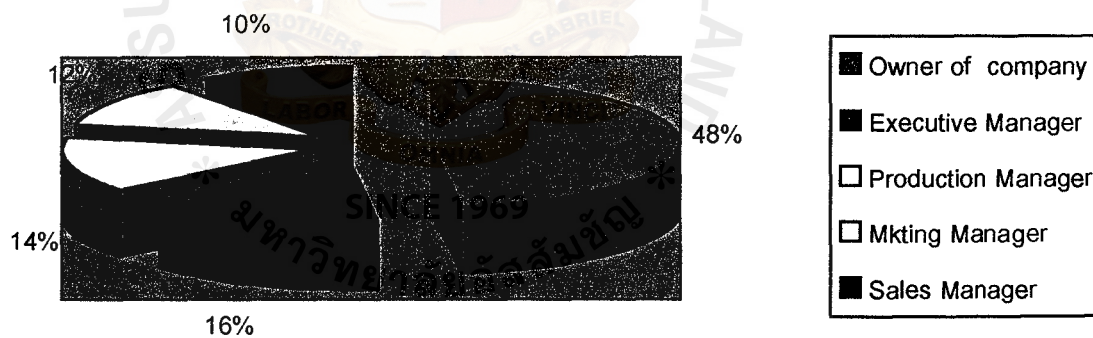
Age:



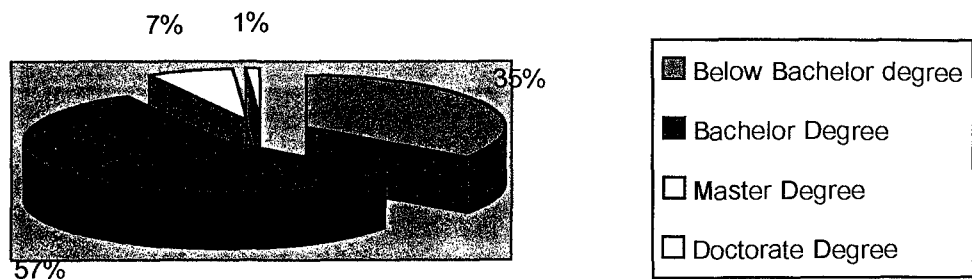
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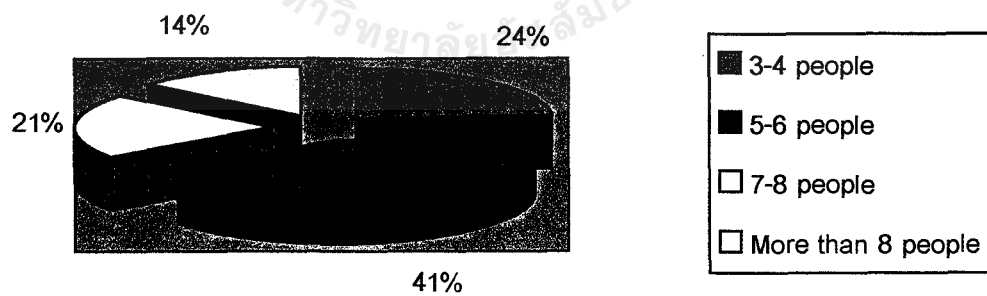
Position:



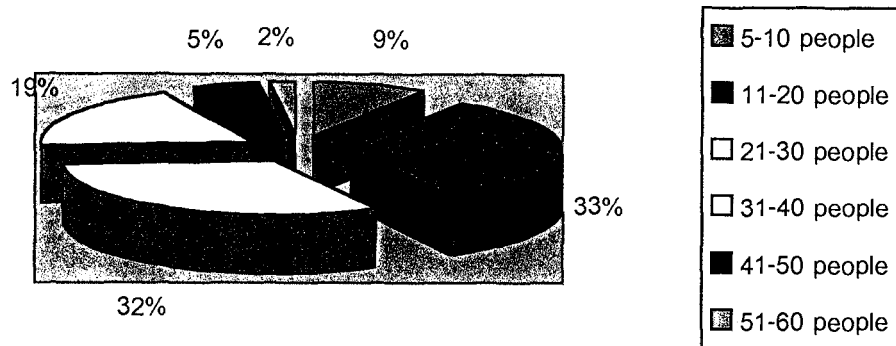
Education:



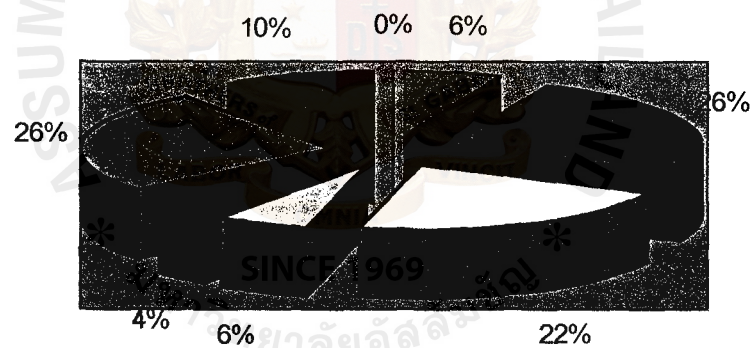
Size of family:



No. of employees:



Income:



10,001-50,000 Bht	50,001-100,000 Bht
100,001-200,000 Bht	200,001-300,000 Bht
300,001-400,000 Bht	400,001-500,000 Bht
More than 500,000 Bht	

So after we got the 100 questionnaires we found that most of our targets are male at 78% and female 22%. The ages are about 31-35 years at 38% and 36-40 years at 20%. The status is single is 35% and marriage is 65%. Most of them are the owners of their

retail business at 48%. The education level is emphasizing on Bachelor Degree at 57% and below Bachelor Degree at 35%. The family size is about 5-6 people at 41% and 3-4 people at 24%. The numbers of employees are about 11-20 people in the retail companies at 33% as the high numbers of people in their companies; the second is 21-30 people at 32%. Finally, income level is about 50,001-100,000 Baht and 400,001-500,000 Baht at 26%, and 100,001-200,000 Baht at 22%.



After we provide all information about the questionnaires results we can conclude as following:

Categories	Results
1. The problems in the retail organization according to the inventory system and service to customers.	<ul style="list-style-type: none"> Customers' demand can't meet products customers' satisfaction 44% High prices of construction equipments 39% Unsatisfied of after services 33%
2. The solution retailers think are the best ways to eliminate their problems in retail business.	<ul style="list-style-type: none"> Using Information System to eliminate your problems and increase your productivity 41% Improve the logistics channel to create customers' satisfaction 24% Rearrange your own channels 18.5%
3. The frequency for ordering construction equipments from their suppliers	Thai retailers are frequency to ordering construction equipments from their suppliers is 4 times/week at 30% and 3 times/week at 28%.
4. The place Thai retailers order construction equipments	Department store 1%, Superstore 15%, HomePro 37% construction equipment factory 56%.
5. The numbers of suppliers they have	There are 6-10 suppliers at 30% and 16-20 suppliers at 29%
6. The decision-maker when they have to order the retail business products from suppliers	<ul style="list-style-type: none"> Owners of small retail business at 42% Production Manager 21% Sales Manager 21% Sales Manager 29% Warehouse staff 8%.

Categories	Results
7. Estimate budgets when retailers buy construction equipments	They estimate their money per time for their purchasing: 30,001-35,000 Baht at 31% 35,001-40,000 Baht at 19%

8. The criteria you use in order to make decision when you select suppliers by ranking from the least important factor to the most important factor.

(1 = The least important 2 = rather important 3 = important 4 = highly important
5 = The most important)

List of criteria	1	2	3	4	5
Prices of construction equipments.					47%
Reliability of construction shops.			53%		
Quality of construction equipments.				61%	
Time period of guarantee.					39%
Time delivery after ordering.			45%		
Variety of products available to buyers.			39%		
The relationship of suppliers and buyers.		31%			
Ordering options for buyers e.g. ordering by phones through catalogs from factory.				42%	
Time period of payments.		48%			
Efficiency of distribution channel.				49%	

9. The criteria you think as the competitive advantage over your competitors by ranking from the least important factor to the most important factor

(1 = The least important 2 = rather important 3 = important 4 = highly important
5 = The most important)

List of criteria	1	2	3	4	5
Prices of construction equipments.				56%	
Reliability of construction shops.			69%		
Quality of construction equipments.			44%		
Time period of guarantee.			33%		
Time delivery after ordering.			50%		
Variety of products available to customers.			45%		
The relationship of sellers and customers.			52%		
Ordering optional for customers e.g. ordering by phones through catalogs.			40%		
Time period of payments.				49%	
After sales services to customers.			55%		
Efficiency of distribution channel.				49%	

10. What are the criteria you think as the marketing strategies in your organization by ranking from the least important factor to the most important factor.

(1 = The least important 2 = rather important 3 = important 4 = highly important
5 = The most important)

List of criteria	1	2	3	4	5
Prices of construction equipments.				50%	
The leadership of construction products.			62%		
Quality of construction equipments.			57%		
Time period of guarantee.			47%		
Time delivery after ordering.			39%		
Variety of products available to customers.		42%			
Provide promotion and discounts available to customers.			47%		
Ordering optional for customers e.g. ordering by phones through catalogs.				48%	
Time period of payments.			40%		
After sell services to customers.	42%				
High efficiency of distribution channel.			33%		

Categories	Results
11. The marketing strategies do you think is the best strategies in your retail business? (Please ranking 1-5 from the least important to the most important)	<p>No. 1: The high quality of construction equipments at 49%</p> <p>No.2 The focus of construction equipments' price in the retail business. at 32%</p> <p>No. 3: The high efficiency of distribution channel at 31%</p> <p>No.4: The differentiation of construction products from competitors at 30%</p> <p>No 5: The leadership of construction and products available to the customers in the retail business at 26%</p>
12. Information System is one of important thing to help retailers to solve problems as well as increase sales volume in retail business.	<ul style="list-style-type: none"> • Important at 84% • Not important 16%
13. Information System that retailers think it can improve your productivity and create customers' satisfaction according to their needs	<p>No1: Supply Chain Management at 29.07%</p> <p>No 2: Customer Relation Management (CRM) at 26.74%</p> <p>No. 3: Knowledge Management (KM) at 15.50%</p> <p>No 4: Artificial Intelligence at 8.53%</p> <p>No 5: Business Intelligence / Customer Intelligence (CI) 6.20%</p>
14. Have you ever heard about Customer Intelligence ?	<ul style="list-style-type: none"> • Heard 11% • Not heard 89%
15. Is it possible " Customer Intelligence " can reduce costs and help you to send product on time to customers?	<ul style="list-style-type: none"> • Heard 11% • Not heard 89%

16. What do you think about “**Customer Intelligence**” getting advantages better than competitors by ranking only one number from the question as following:

(1 = The least important 2 = rather important 3 = important 4 = highly important
5 = The most important)

Range the levels	1	2	3	4	5
Create customer and prospect profiles from both traditional and e-business channels.				7%	
Identify your most profitable customers				11%	
Discover and plan how to communicate with customers				8%	
Optimize multichannel marketing campaigns.				11%	
Anticipate and drive customer needs.				9%	
Better relationship with suppliers			7%		
Better relationship with sellers and customers				9%	
Better efficiency of distribution channel.				10%	
Predict likely customers behavior and response to retail business.				10%	
Determine the stream of expected future profits from individual or groups of customers.			8%		
Promote additional products to individual customers based on their unique profile of customers through customer intelligence.			6%		
Reducing customer defection by providing customized services (content, special offers and loyalty programs) based on the individual's value to the organization.			6%		

After we get all the results of 100 questionnaires, we used SPSS to analyze the possible solutions so we may further would like to know about the ages effected on the technology or not by using crosstab to analyze the result:

Hypothesis1: Age is depend on KN_TEC3 (CI) or not ;(refer from appendix)

H_0 : CI (Customer Intelligence) depends on customer aged.

H_1 : CI (Customer Intelligence) is not depend on customer aged

Significant level $\alpha = 0.05$

The result from SPSS

We found that the possibility of Significance of Pearson Chi-square is 0.197

So we use it to compare with significant level $\alpha = 0.05$

The value of Pearson Chi-square **more than** α (Significant level)

$$0.197 > 0.05$$

We decide to accept the hypothesis H_0 : CI (Customer Intelligence) depends on customer aged. And reject H_1 : CI (Customer Intelligence) is not depend on customer aged

We conclude that CI (Customer Intelligence) depends on customer age. The higher the age, more ignorance of CI (Customer Intelligence).

Hypothesis 2: Education depends on KN_TEC3 or not (CI); (refer from appendix)

H_0 : CI(Customer Intelligence) depends on education.

H_1 : CI(Customer Intelligence) does not depend on education.

Significant level $\alpha = 0.05$

The result from SPSS

We found that the possibility of Significance of Pearson Chi-square is 0.230

So we use it to compare with significant level $\alpha = 0.05$

The value of Pearson Chi-square **more than** α (Significant level)

$$0.230 > 0.05$$

We decide to accept the hypothesis H_0 : CI (Customer Intelligence) depends on education. And reject H_1 : CI (Customer Intelligence) is not depend on education.

We conclude that CI (Customer Intelligence) depends on education. The higher the education, better known of CI (Customer Intelligence).

Hypothesis 3: Sex is depends on KN_TEC3 or not (CI); (refer from appendix)

H_0 : CI(Customer Intelligence) depends on sex.

H_1 : CI(Customer Intelligence) does not depend on sex.

Significant level $\alpha = 0.05$

The result from SPSS

We found that the possibility of Significance of Pearson Chi-square is 0.752

So we use it to compare with significant level $\alpha = 0.05$

The value of Pearson Chi-square **more than** α (Significant level)

$$0.752 > 0.05$$

We decided to accept the hypothesis H_0 : CI (Customer Intelligence) depends on sex and reject

H_1 : CI(Customer Intelligence) does not depend on sex.

We conclude that CI (Customer Intelligence) depends on sex.

CHAPTER V: COMPETITIVE ANALYSIS STATUS.

5.1 The current processes of small retail business in terms of construction equipments in Thailand.

In the past, most small retail businesses in terms of Customer Equipments emphasized on the following process:

Customers walk in to retail business and asked for the construction equipments, they call to that retail business and ask for the construction equipments that they are looking for. At the front of retail business, the owners provided few employees to serve customers who are walk in and provide cashiers who always receive the calling from customers and collect at the counter. After customers asked for the products, employees at the front of the shops will receive the orders from the customers and come to check the stock or inventory whether the construction equipments are available to customers or not. After the construction equipment products have in stocks, employees will pick it up to customers and receive money or bill signs by customers and send it to cashiers who sit at the counter. In case the stocks are out, employees have to tell the owners in order to order from suppliers. The owners will call suppliers and order the raw materials without checking from the stocks due to lack of time and most of construction equipments products have to check by manual checking by the owners that may confuse and they don't know what exactly stocks of that products are in now in the warehouse. So some construction equipments may have a lot stocks but some are out without checking again because a lot products are in although all products have their own code but it's difficult to re-check again on time. These makes some stocks expired, so retailers have to lose their profits with their costs.

By the way, most suppliers also order raw materials from other equipments products from factories because it is cheaper than ordering from other places for example HomePro. After the owners order the products from suppliers and waiting them to send at the retail business. They receive the products with bills; some retailers may pay with cash. Cheque was paid when they order a huge of stocks was ordered. After that the owners will check all construction equipment products they got from suppliers and arrange all raw materials by the employees according to the codes and wait for customers to come to buy at the retail business again. Customers pay the retailers with bill that they sign. The retailers have to check the due dates and send salesman to

receive money according to the bills. Moreover, at the end of the day the cashier has to check and send all bills and money to the owners in order to check the sales volumes for each month. (See from the exhibit1 page I)



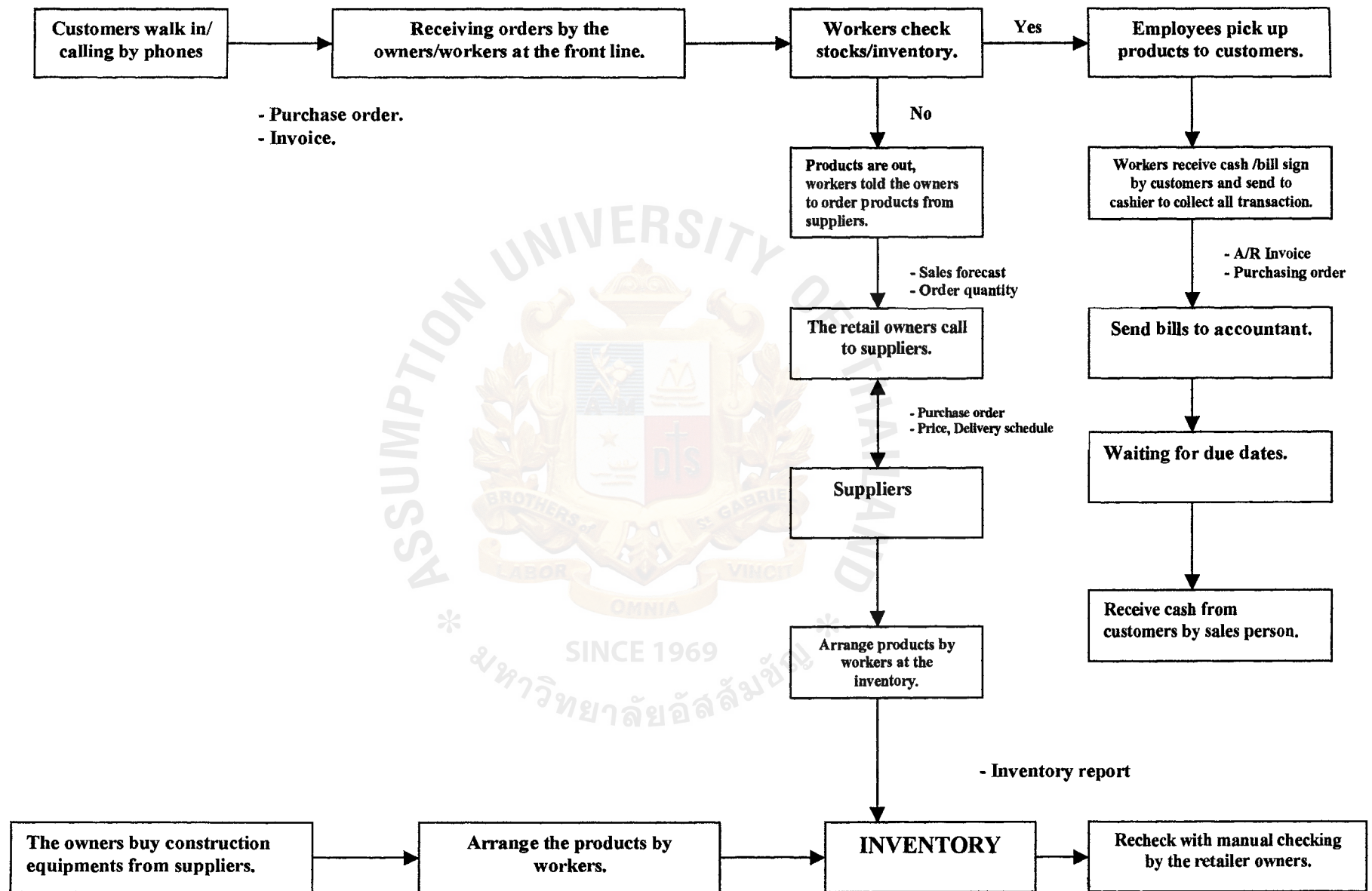


Exhibit 1: The traditional of retail business in Thailand

Chapter VI: The implementation of Customer Intelligence in Thai retail business in term of construction equipments.

6.1 How can we use Customer Intelligence to implement in the construction industry in term of Thai retail business?

We can implement Customer Intelligence in the construction industry in term of Thai retail business by rearranging the steps since customers walk-in or call Thai retail companies. In the case of customers calling Thai retail companies, all calls are sent to call center that provides skilled employees to receive all calls of customers. At the front line of the retail business, they receive all orders from customers; employees at the front line will key all data to the computer through CI System (Customer Intelligence System). If the stocks have enough products according to customers' need, CI System will show the amount of products that are left in the inventory system, otherwise there is an automatic calling warning to the employees who take these responsibilities to control stocks, call suppliers to fulfill stocks. After employees pick up products for customers, employees will receive cash or bills signed by customers and send it to cashiers at the counter. The cashier will keep all customers' information through CI System in order to keep customers history that involve about what products they purchase, the volumes and the amount of products. Customer Intelligence System can identify the customers' due dates bills as well as check the amount of stocks that are left in the warehouse. When the due dates are coming, the CI System will announce to the accountants in order to send the sales person to receive cash form customers. Not only CI System can check stocks but also help the owners to check the due dates of bill as well as know the number of stocks left in the inventory system through CI System. (See exhibit 2 page II)

So we can define the importance of CI System responsibilities through Thai retail companies in terms of Thai construction equipments by:

CI (Customer Intelligence System) as the core of the system can help Thai retail companies in terms of construction equipments by:

- **Identify up-sell opportunities:** CI System will help Thai construction retailers by predicting and identifying sales volumes by using sales' history and customers' sales through CI System. Moreover, we can use CI System to

measure how difference segment interact by comparing two differences customers' sector to predict all sales volumes for each quarter.

- **Identify buying cycle in the retail shops:** CI System can help Thai construction retailers by identifying buying cycle of their retail shops start since ordering raw materials until sending construction products to the customers in order to fulfill customers' need.
- **Predict satisfaction levels of customers by predicting plans for each purchasing and future spending plans:** help construction retailers to track and measure the relative performance of raw materials, customers, and time periods. Thai retailers can measure the relative performance of promoted and non-promoted products for control and index the performance of different time periods.
- **Understand satisfaction level of each customer through the CI System:** CI System can process and understand satisfaction level of each customer to predict and formulate all the purchasing history of each customers as well as compare between customers' history, presently data, and to predict future with assessment.
- **CI System can gain customer participation in marketing programs:** by evaluating the results through the CI processing that help them to determine which construction products tend to buy and related with other construction products to gain customer participation in marketing program.
- **Predict what marketing/sales tactics and practices worked best through CI System:** CI System can help them by providing clues for cross-sell and up-sell opportunity.

The CI System is a programmatic approach for managing the post-sales customer lifecycle. Documented, tested and refined for business-to-business companies, CI (customer intelligence) system can help them to maximize the profitability of your customer base by:

The components of the CI system is:

Collect

- **Evaluation:** CI System will assess existing intelligence process, and evaluate departmental intelligence requirements, evaluate all customers' data with both history and present data as well as sales volumes, and inventory management per day as well as stocks that should be replenished.
- **Scripting:** from the CI System it can process that help retailers know what they should ask customers in order to know what they really want from this shop by interviewing when they come to their construction retail shops to analyze, process the next orders. Not only interviews, or ask their customers but also they may use questionnaires to track the relative responses of different groups of customers through questionnaires. After that we use it to compare and contrast these groups to a larger population to each other.
- **Rollout:** After they get all customers' data to assess all sales volumes, they can use all data from CI System to analyze and communicate program goals, timelines, and benefits to both company and customer base, and marketing plan that cover with retailer's objective that suitable or not.
- **Workflow:** CI System can create schedule and manage ongoing customer communications using built-in workflow and generate reports for customers who are actively and frequently to buy their retail shops and find problems and results which customers who are not actively using their construction products.
- **Logistics:** CI System can execute on proactive customer communication cycles and begin intelligence collection and communicate easily with customers and suppliers.

After CI System access through the customers' data and predict what they want then CI System can help retailers come to the steps of the system by:

Manage:

- **Extraction:** CI System can identify and pull actionable intelligence components from interviews and evaluate what they get from customers' interview when they walk in or call to the retail business from seeking feedbacks both actively and not actively used their construction products, then measuring and acting on the responses is an integral part of a multi-channel strategy.
- **Notification:** We use CI System to inform key personnel of customer hot issues and up-sell opportunities and predict the sales volumes for each customer.
- **Creation:** CI System can repurpose intelligence results into a variety of documents and formats (HTML, PPT, Word) after all data are verified and evaluate through the CI System and report it to help retailer easily to understand in term of papers.
- **Tracking:** CI System can monitor the completion rates of key customer profiles and store in the CI System after we evaluate all history' data.
- **Authorization:** CI System can obtain and indicate approval of customer quotes, references and collateral and allow only the person who has authorized to access the CI System.

After processing all customers' data with all history, presently CI System can help the Thai construction retailer by:

Distribute:

- **Access:** CI System can help retailers search based on customer, product, region, industry, reference, etc., to find detailed customer intelligence components through CI System.
- **Reports:** It can generate the specific customer reports with either predefined or advanced reporting after all data was collected.

- **Delivery:** CI System can circulate collateral, reports, and quotes, the data are provided to the right people at the right time when the retailers need more customers' profile that is ready to use.
- **Storage:** CI System can archive all customers' related collateral, quotes, and notes in a central repository for easy access and store in terms of index that helps retailers easy to find.

Measure:

- **ROI:** CI System can measure and track new sales opportunities generated by the CI System because all history data and presently data are already kept in the CI System so retailers can track all data every time as they are needed.
- **Usage:** CI System can monitor and measure system usage, and how intelligence is being leveraged throughout the retail business. Monitor and track customer loyalty, and program appreciation and participation through CI System.
- **Evaluation:** All CI System can evaluate program milestones and refine future program goals through both history data , presently as well as predict the future sales volume and determine the goals that create the prosperity in the construction retail shops.

(Exhibit 3 page III)

6.2 Key success factors of Customer Intelligence in Thai retail business.

According to the Customer Intelligence, Thai retail companies can use in order to increase sales volumes as well as create more customers' satisfaction so these are the key success factors:

- **Training-skilled:** To be successful in Customer Intelligence implementation, retail business should make sure training skilled resources. It should be enough to take all responsibility for parts of retail business, especially customers' service connection and Customer Intelligence system controlling because if there is some mistake, it makes them waste times and money. So good training is necessary for all departments that would like to use Customer Intelligence implementation in their business.

- **Information Technology:** Implementation of the new systems is necessary for all systems includes databases, data warehouse servers and other hardware, telephony systems, software for retail Customer Intelligence, workflow management and e-commerce, middleware and system administration management tools.
- **Budget:** It is one of the important things to implement with the new kind of these system because if we create sustained capital investment and access to capital, process engineering skilled, intense supervision of labor, products designed for case in manufacture with customers' need to create customers' satisfaction, low cost distribution system. It can create profits as well as increase productivity, create customer satisfaction over than competitors.
- **Marketing Strategy:** Retail companies should create strong marketing abilities in order to create works plan to lead all in the right directions according to the companies objectives. The right direction of marketing strategies can create corporate reputation for quality of technological leadership.
- **Organization structure:** the retail businesses who would like to use Customer Intelligence apply in their business should think about their organization structure because it should be separated into clear dimensions in order to create clear responsibilities for each department and clear direction of the structure in their departments.

6.3 Characteristics of companies who use Customer Intelligence in construction industry in terms of Thai retail business.

The Characteristics of Customer Intelligence companies should be as follows:

How Thai small retail companies in terms of construction equipments can use Customer Intelligence to make the most of its relationships with customers. These are the approaches that lead to increased revenues, decreased costs, and ways to maintain and grow the customer base as follows:

- Retail business who would like to use Customer Intelligence (CI) in their business should treat customers as individuals, based on a holistic view, with consistent actions across touch points, and to think in terms of share wallets, not share to market in order to keep more customers and use CI to predict sales volumes.
- Attract new customers intelligently. The Customer Intelligence company should
 - Target the right kinds of prospects through segmentation techniques.
 - Develop the right marketing campaigns with personalize offerings to the proper segments.
 - Follow the leads through the sale effort.
 - Close the loop on the effectiveness of the whole process.
- Build the customers' value over time. Once it has acquired a new customer, Thai retail companies must work hard to increase the value of that relationship over time. This means understanding their customers enough so that they are enticed to repeat business, through cross-selling or up-selling programs. And it also means having the ability to measure and track that customer value over time.
- Provide the best level of service to customers. Good customer care translates into customer retention. With a solid informational infrastructure built on customer intelligence, retail business are able to better understand their needs, make the retail business easy to do business with, and provide customers with a multichannel self-service environment.

- Take the existing customer base and work with clients to define customer segments through data mining. Look at spending levels, frequency of sales, which products they buy, how much money they spend on an average transaction, and whether it is one transaction for a large purchase or several smaller purchases. The idea is to build a set of homogenous groups with similar characteristics. Try to combine demographic characteristics with buying behaviors, called behavioral modeling.
- Build profiles for each segment to identify the common characteristics that define each group. The goal is to obtain a "snapshot" of the best customers. Another objective is to find middle-grounders who can grow to be best customers, and prospects that are likely to be new good and best customers.
- Using credit card information as a basis, add demographic information purchased from third party data providers; they base their businesses on buying demographic data from credit card companies, banks and marketers. This data includes information such as size of home, types of careers, homeowner or renter, number of children, number and type of cars, speculative salary, and many other descriptive characteristics for a customer.

CHAPTER VII: THE DIFFERENCE BETWEEN USING CUSTOMER INTELLIGENCE AND NON-USING CUSTOMER INTELLIGENCE IN THAI RETAIL BUSINESS.

7.1 The differences between using Customer Intelligence and non-using Customer Intelligence in Thai retail business.

Customer Intelligence categories	Traditional retail business	Customer Intelligence in retail business	Benefits
Ordering system (suppliers)	Order the construction equipments products by phones or walk in at the retail shops.	Order the construction equipments products through Internet and phones call to suppliers	Using Internet can help Thai retailers reduce times and costs
Ordering system (customers)	Order the construction equipments products by phones or walk in at the retail shops.	Customers can call to retailers or ordering the construction equipments through on line	Fast and on time delivery to customers with accuracy order by customers through documents that identify by the computerized system
Distribution channel	Send on time to customers	Send on time to customers	Make customers' satisfaction
Marketing	Look back to all customers' data in the manual paper did by workers and retailers	Use customers history to know the customers' data through CI system	Fast and accuracy by predict through CI system
Accounting system	Paper manual	Using computerized system through CI system to keep transactions	Reduce the paper loss that make retailers can keep all information to predict what customers' want to the next purchasing

Customer Intelligence categories	Traditional retail business	Customer Intelligence in retail business	Benefits
Coordination	Can communicate between customers and retailers	Use computerized system to predict what customers' need	Create customers' satisfaction because CI system can help retailers know what customers' want and predict the construction equipment in the warehouse for next purchasing
Warehouse system	Paper manual by workers and the owners.	Use computerized through CI system to keep all customers' information and inventory system	Fast and accuracy and reduce paper loss that help retailers can predict the inventory in their warehouse and reduce damage products

7.2 Financial scenario of using Customer Intelligence of construction's equipments in Thai retail business.

Analysis of cost and benefit is calculated of all anticipated costs association with CI System in Thai construction retail shops. It divided to 3 major parts; the cost of building system, the cost of installing system, and the operation cost.

The cost of building system

- Salaries and overhead for all staff attached document management in CI System
- Administration cost
- Computer times and development tools
- Office space and office equipment for maintaining document

The cost of installing system

- User training costs
- Database conversion costs
- Vendor installation costs

The operation costs

- Hardware costs
- Software costs
- People costs
- Maintenance costs
- Miscellaneous costs

The categories of each cost can be identified as follows:

1. The cost of building system

- A salaries and overhead for all staff attached the document information with CI System for managing document that the organization spends about 500,000 baht for studying users requirement, analyze design and application development the CI System and spend down 50% for the first year and spends down 10% in each year.
- Administration Training cost for user administration to study CI System and staff to study application development tools that the organization spends about 100,000 baht a year for training and spend down 15% each year.

- Times and development tools for upgrading tools that the organization spends about 70,000 baht for second year and spends up or down which it depends on application usage.
- Office space and office equipment for managing the document such as the cabinets, spaces area. The organization spends about 250,000 baht for first year and spends down 50% each year.

2. The cost of installation

- Users training costs for staff studying the CI System that the organization spends about 180,000 baht for first year and spends down 50% for second year and spends 10,000 baht for each following year.
- Data conversion costs from the existing system to CI System that the organization spends about 60,000 baht for first year and 40,000 baht for second year.
- Vendor installation costs for equipment installation that the organization spends about 100,000 baht for the first year.

3. The cost of operation

- The hardware costs are providing for CI System that the organization about 2,000,000 baht for the first year and spends down 50% for second year and spends down 15% each year.
- The software costs are providing for CI System that the organization spends about 600,000 baht for first year and spends down 50% for second year and spends down 10% each year.
- People costs are keeping and searching the document that the organization spends about 150,000 baht for first year and spends down 50% for second year.
- The maintenance costs are the office equipment that the organization spends about 150,000 baht for second year and spends up 10,000 baht each year.
- The miscellaneous costs are paper, filing and so on that the organization spends about 150,000 baht for first year and spends down 20% each year.

Analysis of Costs and Benefits(Baht) is summarized in to the table below:

Description	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
The Cost of Building System						
Salaries and overhead	500,000	250,000	225,000	202,500	182,250	164,025
Administration Training costs	100,000	85,000	72,250	61,413	52,200	44,370
Computer Time & development tool	0	70,000	65,000	60,000	55,000	50,000
Office spaces and equipments	250,000	125,000	62,500	31,250	15,625	7,813
The Cost of Installing System						
Users Training Cost	180,000	90,000	80,000	70,000	60,000	50,000
Database conversion costs	60,000	40,000	0	0	0	0
Vender Installation Costs	100,000	10,000	5,000	5,000	5,000	5,000
The Cost of Operation						
Hardware costs	2,000,000	1,000,000	850,000	722,500	614,125	522,006
Software costs	600,000	300,000	270,000	243,000	218,700	196,830
People costs	150,000	75,000	70,000	65,000	60,000	55,000
Maintenance costs	0	150,000	160,000	170,000	180,000	190,000
Miscellaneous costs	150,000	120,000	96,000	76,800	61,440	49,152
Total Cost	4,090,000	2,315,000	1,955,750	1,707,463	1,504,340	1,334,196

Condition:

- **Size of company:** Retail companies should have a small and medium size as it is easy to access the system through the employees with skilled training.
- **No. of employees:** No. of employees should be 11-20 people in order to cover all budgets we use by using Customer Intelligence in Thai Construction equipments retail business.
- **Budget:** Thai Construction equipments retail business who would like to use Customer Intelligence to implement in their companies should have a budget of about 5-10 Millions Baht on their hands to be for their system investment and reserve funds for their construction equipments and other products that is related to construction.



7.3 The Advantages VS. Disadvantages of Customer Intelligence System in small construction retail shops in Thailand

Benefits:

- Cost reduction and increase sales volumes.
- Create customer and prospect profiles from both traditional and e-business channels.
- Identify your most profitable customers
- Discover and plan how to communicate with customers
- Optimize multichannel marketing campaigns
- Anticipate and drive customer needs
- Better relationship with suppliers
- Better relationship with sellers and customers
- Predict likely customers behavior and response to retail shops
- Determine the stream of expected future profits from individual or groups of customers
- Promote additional products to individual customers based on their unique profile of customers through customer intelligence
- Reducing customer defection by providing customized services (content, special offers and loyalty programs) based on the individual's value to the organization

Obstacles:

- **Cost.** Implementation of Customer Intelligence System is typically a significant expenditure. Hardware, software, retraining, and other costs should be compared with anticipated benefits to determine the economic viability of the project.
- **Training.** The education of the user base is a necessary stage in a successful rollout. This involves creating customized learning materials (sometimes including a custom decision support environment) and teaching all users both the why and the how of using the new system. We have hundreds of hours of training expertise in-house to expedite this CI System.
- **Organization impact.** Warehouse personnel need to be able to adjust to a real-time system and other Customer Intelligence System features. Some personnel may resist the process changes and technology associated with Customer Intelligence System. Companies also should consider the potential for union labor issues associated with workforce reductions.

CHAPTER VIII: CONCLUSION.

8.1 Summary

Customer Intelligence involves creating an actionable strategy and determining the right tools and best practices to help realize the strategy. It requires lots of planning, discussion, and evaluation. In the ever-expanding landscape of customer intelligence technology and consulting solutions in this project can help Thai retailers in term of construction equipments to find the right solution in order to increase sales volumes as well as know what customers' really want, and improve customers' service. In order to be successful implement in the Thai retail companies, they have to do by first let's review a few facts. Because Customer intelligence is more than data analysis and more than a marketing campaign strategy because it is as Information Systems that help Thai retailers in terms of solve problems and create sales volume to their shops.

Because Customer Intelligence is a process for building customer relationships. These customer relationships are forged over time. They develop from the ways a Thai Retail Company acquires and communicates with each customer. The customer intelligence strategy needs to take this into account. The analysis efforts they undertake, the problems they attempt to solve, and the technologies and best practices that they use to solve them all need to be used to holistically build a strategy. The customer data, behavioral models, and performance metrics then need to move beyond the short-term evaluation of specific marketing campaigns to the long-term evaluation of the change in customer value. This allows the organization to increase the net present value of the profit contributions arising from its customer interactions.

Moreover, an effective customer intelligence infrastructure build upon data warehousing technologies To understand the role customer intelligence (CI) plays in developing customer relationships, it helps to examine the processes and technology a company must implement to support effective customer relationships. Customers want things from your company, which is in business to provide them. They want the goods and services the company sells, but they also want information about those products. So they come to your Web site or store, or they call on the phone. The more you know about them and what they want from your company, the better you can make their

experience. In other words, you must offer an effective personalization solution to your customers.



8.2 Future trend.

Traditionally, in order for someone to use customer intelligence, a person needs to be in front of a PC linked to a network. This means that the time and the place to leverage information intelligently are strictly limited to a few hours a day i.e., when employees are on their PCs, connected to the network, and not in a meeting or on the phone. The need for intelligence is, however, permanent. There is no reason to be perfectly informed when in the office, and completely ignorant when in a meeting, in the car, or flying in a plane.

The convergence of the wireless technologies, Internet access, and business intelligence will bring dramatic changes in how people understand information and make daily decisions. Today, technologies are already available to enable business intelligence access to complex information from wireless device. Suddenly businesspeople are freed from having to sit in front of the PC at their office in order to have access to the right information. They can perform Customer Intelligence tasks 24 hours a day, wherever they are, as long as they can get a mobile network signal.

In the future Customer Intelligence (CI) will exist at every Thai retail company, although it still tends to be concentrated in spreadsheets and potentially other disparate repositories. The challenge lies in integrating CI into a platform that can be used by everyone in the company. This integration doesn't require complicated technical manuals and a massive training program. However, The managers were able to provide users with a one-page training document that has people up and running in a short period of time.

Integrated retail CI using software tools that deliver the right data, at the right time, with the right applications, on the same platform—transforms users into analysts and drives collaboration. Analysts can get the information when they want it, and how they want it. In this age of shrinking margins and heightened competition, retailers must begin to provide their “analysts” with the right tools to make better strategic planning decisions for their companies.

8.3 Critique of study or limitation of this project.

Although this a framework of Customer Intelligence for Construction equipments of Small Retail Business in Thailand that can cover in the construction equipments in the Thai construction industry but it does not cover all of the construction industry. To cover more the construction industry, we may have to study further the other industries that are related to the construction industry which use Customer Intelligence to be a part of their retailing and the other processes to solve the problems as well as to create customers' satisfaction by improving customers' services and increase sales volumes. Although now there is not any other industry which implement this kind of Customer Intelligence in Thailand because it's rather a new Information Technology in Thailand, but we believe that there are some industries interested in implementing this kind of technology as fast as possible due to the rapid of technology worldwide.



8.4 Recommendation.

The importance of customer focus and, specifically, organizing around the customer's wants is emphasized by many organizations. An extensive research stream has shown that a marketing orientation that explicitly includes customer focus leads to higher market share and profitability. Marketing-oriented firms seek to understand customer needs and wants and then, based on that understanding, to structure their organizations, their product offerings, and their processes around delivering value in meeting those needs.

To study further, we should emphasize on the other industries that use Customer Intelligence in their retail business in order to solve their problems in the organization as well as try to improve customer's service and increase productivity by using these kinds of new systems. Furthermore, research from the website that is related to Customer Intelligence is essential because it can help us to identify how clearly Customer Intelligence works in the other industry. Finally, we believe that many Thai retail businesses that use Customer Intelligence can help them to alleviate problems and increase their sales volumes.

References:

BRYAN FOSS & MERLIN STONE (2001) Successful Customer Relationship Marketing: New thinking, new strategies, new tools for getting closer to your customers: Kogan Page: Chapter18

BRCHNER, J. (1990), "Impact of Information Technology on the Structure of Construction", Construction Management and Economics, pp.205-218.

Davenport, Thomas H. "Putting the Enterprise into the Enterprise System," *Harvard Business Review* (July-August 1998).

Donald R. Cooper, Pamela S. Schindler. (2001) Business Research Methods 7th edition

GERTSTEIN, M.S. (1987), The Technology Connection: Strategy & Change in the Information Age, Addison-Wesley Publishing Co., U.S.A.

Inmon, William H. *Building the Data Warehouse*. New York: John Wiley & Sons, 1996.

Malhotra, N.K. (1993). Marketing Research: An applied orientation Englewood Cliffs, NJ: Prentice-Hall Chapter7

Michael E. Porter Competitive advantage." Creating and sustaining superior performance VOLUME 17, NUMBER 3, 1999: The Value Chain and Competitive Advantage.

Mokyr, Joel. *Lever of Riches: Technological Creativity and Economic Progress*. Oxford: Oxford University Press, 1992.

Russo, J. Edward, and J. H. Schoemaker. *Decision Traps: Ten barriers to Brilliant Decision-Making and How to Overcome Them*. Fireside, 1990.

Survey.com. "Database Solution III" (December 1999).

APPENDIX



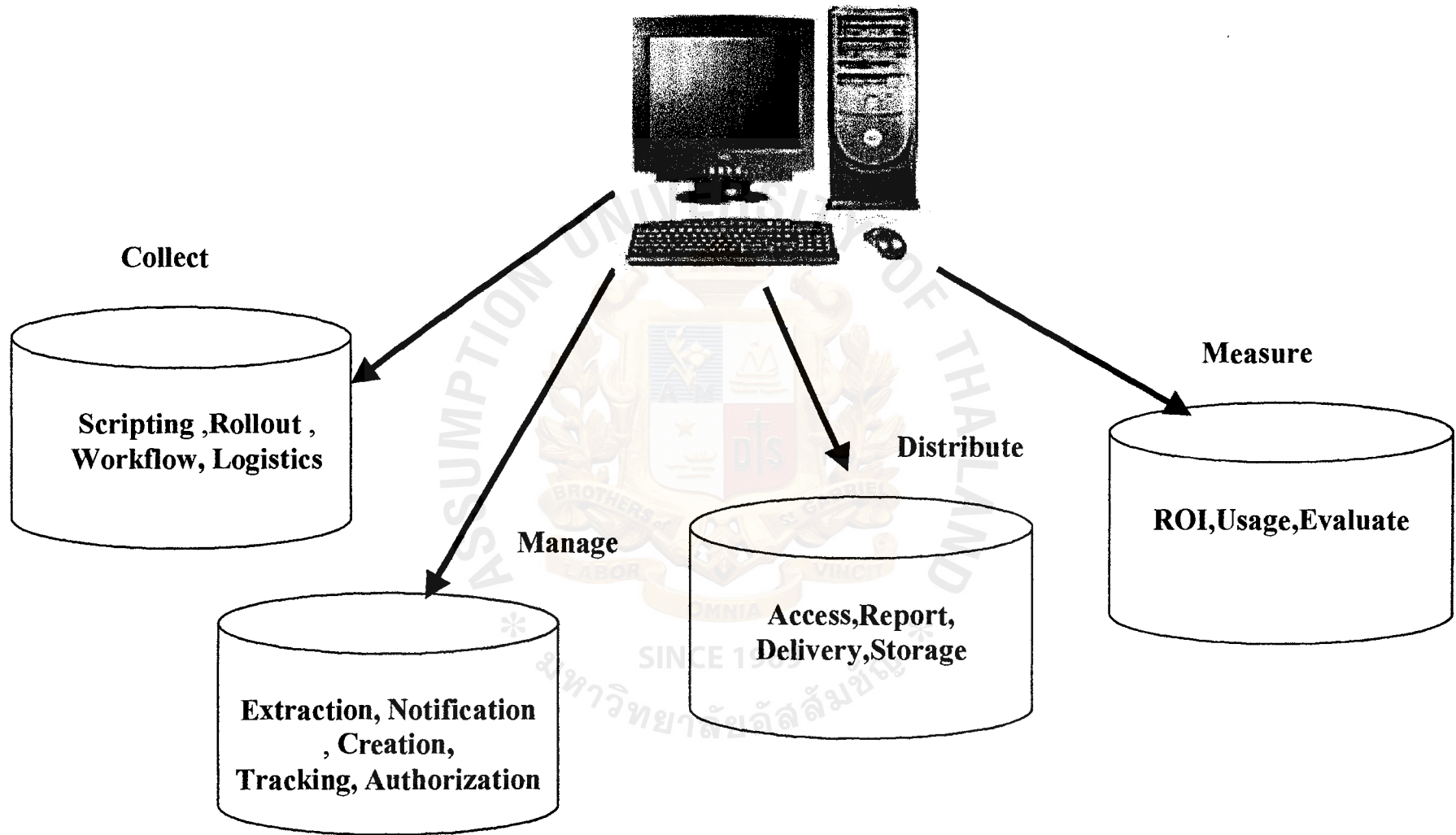


Exhibit 3: The function of Customer Intelligence Software (CI Software)

The example of questionnaire.

Part 1: Questionnaire

1) What is/are the problems in your organization according to your inventory system and services to customers? (Ranking 1-5 from the most important to the least important)

- ☐ High prices of construction equipments
- ☐ Unsatisfied of after services
- ☐ Problems with supplier qualification
- ☐ Inconvenience of car parking
- ☐ Problems with handling reverse logistics
- ☐ Customers' demand can't meet products customers' satisfaction
- ☐ Other (Please specify_____)

2) Which solution do you think is the best ways to eliminate your problems in your organization?

- ☐ Find the reliable suppliers
- ☐ Find the lower cost of raw material sources
- ☐ Improve the logistics channel to create customers' satisfaction
- ☐ Rearrange your own channels
- ☐ Using Information System to eliminate your problems and increase your productivity
- ☐ Others (Please specify_____)

3) How often do you order construction equipments from your suppliers?

- | | |
|---------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> 1 time/week | <input type="checkbox"/> 2 times/week |
| <input type="checkbox"/> 3 times/week | <input type="checkbox"/> 4 times/week |
| <input type="checkbox"/> 5 times/week | <input type="checkbox"/> More than 5 times/ week |

4) Where do you order construction equipments?

- ☐ Department Store ☐ Superstore
☐ Home Pro ☐ Construction equipment factory
☐ Other (Please specify _____)

5) How many suppliers do you have?

- ☐ 1-5 suppliers ☐ 6-10 suppliers
☐ 11-15 suppliers ☐ 16-20 suppliers
☐ More than 30 suppliers
(Please specify _____)

6) Who is decision-maker when the organization has to order the products from suppliers?

- ☐ Yourself ☐ Production Manager
☐ Sales Manager ☐ Warehouse staff
☐ Other (Please specify _____)

7) Please estimate your order when you buy construction equipments

- | | |
|-----------------------------------------------------|-----------------------------------------------------|
| <input type="checkbox"/> 1,000 Baht- 5,000 Baht. | <input type="checkbox"/> 5,001 Baht-10,000 Baht. |
| <input type="checkbox"/> 15,001 Baht – 20,000 Baht. | <input type="checkbox"/> 25,001 Baht – 30,000 Baht. |
| <input type="checkbox"/> 30,001 Baht – 35,000 Baht. | <input type="checkbox"/> 35,001 Baht – 40,000 Baht. |
| <input type="checkbox"/> 40,001 Baht-45,000 Baht | <input type="checkbox"/> 45,001-50,000 Baht |
| <input type="checkbox"/> 50,000 Baht up | <input type="checkbox"/> 100,000 Baht up |

8) The criteria you use in order to make decision when you select suppliers by ranking from the least important factor to the most important factor.

Please choose only one number from the question as following:

(1 = The least important 2 = rather important 3 = important 4 = highly important 5 = The most important)

List of criteria	1	2	3	4	5
Prices of construction equipments.					
Reliability of construction shops.					
Quality of construction equipments.					
Time period of guarantee.					
Time delivery after ordering.					
Variety of products available to buyers.					
The relationship of suppliers and buyers.					
Ordering optional for buyers e.g. ordering by phones through catalogs from factory.					
Time period of payments.					
Efficiency of distribution channel.					

9) What are the criteria you think as the competitive advantage over your competitors by ranking from the least important factor to the most important factor?

Please choose only one number from the question as following:

(1 = The least important 2 = rather important 3 = important 4 = highly important 5 = The most important)

List of criteria	1	2	3	4	5
Prices of construction equipments.					
Reliability of construction shops.					
Quality of construction equipments.					
Time period of guarantee.					
Time delivery after ordering.					
Variety of products available to customers.					
The relationship of sellers and customers.					
Ordering optional for customers e.g. ordering by phones through catalogs.					
Time period of payments.					
After sell services to customers.					
Efficiency of distribution channel.					

10) What are the criteria you think as the marketing strategies in your organization by ranking from the least important factor to the most important factor?

Please choose only one number from the question as following:

(1 = The least important 2 = rather important 3 = important 4 = highly important 5 = The most important)

List of criteria	1	2	3	4	5
Prices of construction equipments.					
The leadership of construction products.					
Quality of construction equipments.					
Time period of guarantee.					
Time delivery after ordering.					
Variety of products available to customers.					
Provide promotion and discounts available to customers.					
Ordering optional for customers e.g. ordering by phones through catalogs.					
Time period of payments.					
After sell services to customers.					
High efficiency of distribution channel.					

11) Which marketing strategies do you think is the best strategies in your retail shops?

(Please ranking 1-5 from the most important to the least important)

- ☐ The leadership of construction and products available to the customers in the retail shops
- ☐ The focus of construction equipments' price in the retail shops.
- ☐ The differentiation of construction products from competitors.
- ☐ The high efficiency of distribution channel.
- ☐ The high quality of construction equipments.

12) Do you think Information System is one of important thing to help you to solve problems as well as increase your sales volume in your organization?

- ☐ Yes
- ☐ No (Skip to personal data)

13) Which Information System that you think it can improve your productivity and create customers' satisfaction according to their needs?

- ☐ Artificial Intelligence
- ☐ Supply Chain Management
- ☐ Business Intelligence / Customer Intelligence (CI)
- ☐ Ordering Management
- ☐ Knowledge Management (KM)
- ☐ Other (Please specify _____)

14) Have you ever heard about **Customer Intelligence**?

- ☐ Yes
- ☐ No (SKIP to Personal data)

15) Is it possible "**Customer Intelligence**" can reduce costs and help you to send product on time to customers?

- ☐ Yes
- ☐ No (SKIP to Personal data)

16) What do you think about “**Customer Intelligence**” can take advantages better than competitors by ranking only one number from the question as following:

(1 = The least important 2 = rather important 3 = important 4 = highly important
5 = The most important)

Range the levels	1	2	3	4	5
Create customer and prospect profiles from both traditional and e-business channels.					
Identify your most profitable customers					
Discover and plan how to communicate with customers					
Optimize multichannel marketing campaigns.					
Anticipate and drive customer needs.					
Better relationship with suppliers					
Better relationship with sellers and customers					
Better efficiency of distribution channel.					
Predict likely customers behavior and response to retail shops.					
Determine the stream of expected future profits from individual or groups of customers.					
Promote additional products to individual customers based on their unique profile of customers through customer intelligence.					
Reducing customer defection by providing customized services (content, special offers and loyalty programs) based on the individual's value to the organization.					

Part: 2 Personal data

1.Sex:

- ☐ Male ☐ Female

2.Age:

- | | |
|------------------------------------------|---------------------------------------------|
| <input type="checkbox"/> Below 20 years. | <input type="checkbox"/> 20-25 years. |
| <input type="checkbox"/> 26-30 years. | <input type="checkbox"/> 31-35 years. |
| <input type="checkbox"/> 36-40 years. | <input type="checkbox"/> 41-45 years. |
| <input type="checkbox"/> 46-50 years. | <input type="checkbox"/> 51-55 years. |
| <input type="checkbox"/> 56-60 years. | <input type="checkbox"/> 60 years and over. |

3.Status:

- ☐ Single ☐ Marriage (the no. of children _____)

4.Position:

- ☐ Self-employed, own company.
- ☐ Executive/Managerial
- ☐ Production manager.
- ☐ Marketing manager.
- ☐ Sales manager.
- ☐ Other (Please specify) _____

5.Education level:

- | | |
|-------------------------------------------------------|--------------------------------------------|
| <input type="checkbox"/> Below Bachelor Degree. | <input type="checkbox"/> Bachelor Degree. |
| <input type="checkbox"/> Master Degree. | <input type="checkbox"/> Doctorate Degree. |
| <input type="checkbox"/> Other (Please specify _____) | |

6.Family size:

- | | |
|----------------------------------------------|--------------------------------------|
| <input type="checkbox"/> 1-2 people. | <input type="checkbox"/> 3-4 people. |
| <input type="checkbox"/> 5-6 people. | <input type="checkbox"/> 7-8 people. |
| <input type="checkbox"/> More than 8 people. | |

7.No. of employees in the organization.

☐ 5-10 people.

☐ 21-30 people.

☐ 41-50 people.

☐ 11-20 people.

☐ 31-40 people.

☐ 51-60 people.

8.Income level:

☐ Below 10,000 Baht.

☐ 50,001-100,000 Baht.

☐ 200,001-300,000 Baht.

☐ 400,001-500,000 Baht.

☐ More than 600,000 Baht

☐ 10,001-50,000 Baht.

☐ 100,001-200,000 Baht.

☐ 300,001-400,000 Baht.

☐ 500,001-600,000 Baht.



แบบสอบถาม

ตอนที่ 1: กรุณากรอกแบบสอบถาม

1) คุณคิดว่าอะไรเป็นปัญหาในองค์กรของคุณทางด้านการจัดการสินค้าคงคลังและการบริการลูกค้า

(โปรดจัดลำดับความสำคัญจาก 1-5 โดยจากความสำคัญมากที่สุดไปยังสำคัญน้อยสุด)

- ☐ อุปกรณ์ก่อสร้างมีราคาแพง
- ☐ ความไม่พอใจการบริการหลังการขาย
- ☐ ปัญหาทางด้านเงื่อนไขของผู้จัดหา
- ☐ ที่จอดรถไม่สะดวก
- ☐ ปัญหาทางด้านการลำเลียงสินค้าตามกำหนดเวลา
- ☐ ไม่สามารถจัดหาสินค้าตามความต้องการของผู้บริโภค
- ☐ อื่นๆ (โปรดระบุ _____)

2) คุณคิดว่ามีวิธีแก้ไขใดที่เป็นทางเลือกที่ดีที่สุดในการแก้ไขปัญหาที่เป็นอยู่ในปัจจุบัน?

- ☐ หาผู้จัดหาที่มีความน่าเชื่อถือ
- ☐ หาแหล่งวัตถุดิบที่ถูกที่สุดเท่าที่จะเป็นไปได้
- ☐ พัฒนาช่องทางการจัดส่งและขนส่งสินค้าเพื่อสร้างความพอใจให้กับลูกค้า
- ☐ ปรับปรุงช่องทางการจัดส่งสินค้าเสียใหม่
- ☐ ใช้เทคโนโลยีเข้ามาช่วยในการแก้ไขปัญหาและเพิ่มประสิทธิภาพในการผลิต
- ☐ อื่นๆ (โปรดระบุ _____)

3) ความถี่ในการส่งสินค้าที่เป็นอุปกรณ์ก่อสร้างจากผู้จัดหา (suppliers)?

- | | |
|------------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> 1 ครั้ง/สัปดาห์ | <input type="checkbox"/> 2 ครั้ง/สัปดาห์ |
| <input type="checkbox"/> 3 ครั้ง/สัปดาห์ | <input type="checkbox"/> 4 ครั้ง/สัปดาห์ |
| <input type="checkbox"/> 5 ครั้ง/สัปดาห์ | <input type="checkbox"/> มากกว่า 5 ครั้ง/สัปดาห์ |

4) คุณสั่งซื้อสินค้าที่เป็นอุปกรณ์ก่อสร้างจากที่ไหน?

- ☐ ห้างสรรพสินค้า ☐ ซูเปอร์มาร์เก็ต เช่น Lotus, Big C
- ☐ โฮมโปร ☐ โรงงานขายอุปกรณ์ก่อสร้าง
- ☐ อื่นๆ (โปรดระบุ _____)

5) คุณมีผู้จัดหาภายในท้องถิ่นเพื่อที่จะสามารถสั่งซื้อสินค้าได้ทันเวลาที่ทั้งหมดกี่คน

- ☐ 1-5 คน ☐ 6-10 คน
- ☐ 11-15 คน ☐ 15-20 คน
- ☐ 20 คนหรือมากกว่านั้น (โปรดระบุ _____)

6) ใครเป็นคนตัดสินใจในการสั่งซื้อสินค้าจากผู้จัดหา (suppliers)?

- ☐ ตัวคุณเอง ☐ ผู้จัดการฝ่ายควบคุมสินค้า
- ☐ ผู้จัดการฝ่ายขาย ☐ พนักงานคุมสินค้าในคลัง
- ☐ อื่นๆ (โปรดระบุ _____)

7) โปรดประมาณการใช้จ่ายในการสั่งซื้อสินค้าอุปกรณ์ก่อสร้าง

- ☐ 1,000 บาท - 5,000 บาท ☐ 5,001 บาท -10,000 บาท
- ☐ 15,001 บาท – 20,000 บาท. ☐ 25,001 บาท – 30,000 บาท
- ☐ 30,001 บาท – 35,000 บาท ☐ 35,001 บาท – 40,000 บาท
- ☐ 40,000 บาทขึ้นไป ☐ 50,000-100,000 บาทขึ้นไป
- ☐ 100,000 บาทขึ้นไป ☐ 1,000,000 บาทขึ้นไป

8) อะไรเป็นปัจจัยหลักในการตัดสินใจเลือกผู้จัดหาโดยจัดลำดับความสำคัญจากสำคัญน้อยสุดไปสำคัญมากที่สุด โดยเลือกเพียงหนึ่งหมายเลขจากหัวข้อดังต่อไปนี้

(1 = สำคัญน้อยสุด 2 = สำคัญ 3 = ปานกลาง 4 = สำคัญมาก 5 = สำคัญที่สุด)

ปัจจัยต่างๆ	1	2	3	4	5
ราคาของอุปกรณ์ก่อสร้าง					
ความน่าเชื่อถือของร้านหรือ โรงงานขายอุปกรณ์ก่อสร้าง					
คุณภาพของอุปกรณ์ก่อสร้าง					
ระยะเวลาในการรับประกันสินค้า					
ระยะเวลาในการจัดส่งหลังจากการสั่งซื้อสินค้า					
ความหลากหลายของสินค้าในการบริการลูกค้า					
ความสำคัญระหว่างผู้จัดหาและผู้ซื้อ					
เงื่อนไขในการสั่งซื้อสินค้า เช่น สามารถส่งทางโทรศัพท์โดยโรงงานจัดส่ง แคตตาล็อกให้กับลูกค้า					
ระยะเวลาการชำระเงิน					
ประสิทธิภาพในการจัดส่ง					

9) อะไรเป็นปัจจัยที่ทำให้คุณคิดว่าเป็นข้อได้เปรียบที่เหนือกว่าคู่แข่งของคุณโดยจัดลำดับความสำคัญจากสำคัญ

น้อยสุดไปสำคัญมากที่สุด โดยเลือกเพียงหนึ่งหมายเลขจากหัวข้อดังต่อไปนี้

(1 = ต่ำคือน้อยสุด 2 = ต่ำคือน้อย 3 = ปานกลาง 4 = ต่ำคือน้อยมาก 5 = ต่ำคือน้อยที่สุด)

ปัจจัยต่างๆ	1	2	3	4	5
ราคาของอุปกรณ์ก่อสร้าง					
ความน่าเชื่อถือของร้านหรือโรงงานขายอุปกรณ์ก่อสร้าง					
คุณภาพของอุปกรณ์ก่อสร้าง					
ระยะเวลาในการรับประกันสินค้า					
ระยะเวลาในการจัดส่งหลังจากการสั่งซื้อสินค้า					
ความหลากหลายของสินค้าในการบริการลูกค้า					
ความสำคัญระหว่างผู้จัดหาและผู้ซื้อ					
เงื่อนไขในการสั่งซื้อสินค้า เช่นสามารถส่งทางโทรศัพท์โดยโรงงานจัดส่ง แคตตาล็อกให้กับลูกค้า					
ระยะเวลาการชำระเงิน					
ประสิทธิภาพในการจัดส่ง เช่นสามารถจัดส่งสินค้าโดยไม่มีการชำรุดเสียหาย					

10) อะไรเป็นปัจจัยที่ทำให้คุณคิดว่าเป็นกลยุทธ์ทางการตลาดในองค์กรของคุณ

โดยจัดลำดับความสำคัญจากสำคัญน้อยสุดไปสำคัญมากที่สุด โดยเลือกเพียงหนึ่งหมายเลขจากหัวข้อดังต่อไปนี้

(1 = สำคัญน้อยสุด 2 = สำคัญ 3 = ปานกลาง 4 = สำคัญมาก 5 = สำคัญที่สุด)

ปัจจัยต่างๆ	1	2	3	4	5
ราคาของอุปกรณ์ก่อสร้าง					
ความเป็นผู้นำในการจัดและเสนอสินค้าให้กับลูกค้า					
คุณภาพของอุปกรณ์ก่อสร้าง					
ระยะเวลาในการรับประกันสินค้า					
ระยะเวลาในการจัดส่งหลังจากการสั่งซื้อสินค้า					
ความหลากหลายของสินค้าในการบริการลูกค้า					
การจัดส่งเสริมการขายและส่วนลดให้กับลูกค้า					
เงื่อนไขในการสั่งซื้อสินค้า เช่น สามารถสั่งทางโทรศัพท์โดยโรงงานจัดส่ง แคตตาล็อกให้กับลูกค้า					
ระยะเวลาในการจ่ายเงิน					
บริการหลังการขาย					
ประสิทธิภาพในการจัดส่ง					

11) คุณคิดว่ากลยุทธ์ทางการตลาดข้อใดเป็นกลยุทธ์ที่ดีที่สุดในองค์กรของคุณ (โปรดจัดลำดับความสำคัญจาก

1-5 โดยจากความสำคัญน้อยสุด ไปยังสำคัญมากที่สุด)

- ☐ ความเป็นผู้นำและความหลากหลายของสินค้าในร้านขายอุปกรณ์ก่อสร้าง
- ☐ ราคาและการให้บริการลูกค้าที่เข้ามาในร้าน
- ☐ ความแตกต่างของสินค้าจากคู่แข่ง
- ☐ ความมีประสิทธิภาพสูงของช่องทางการจัดส่ง
- ☐ ความมีคุณภาพของอุปกรณ์ก่อสร้าง

12) คุณคิดอย่างไรในการใช้เทคโนโลยีเป็นส่วนหนึ่งในการแก้ไขปัญหาและเพิ่มยอดขายในองค์กรของคุณ

☐ มี

☐ ไม่มี (ข้าม ไปข้อมูลส่วนตัว)

13) เทคโนโลยีอะไรบ้างที่คุณรู้จักบ้างและสามารถช่วยในการเพิ่มผลผลิตและสร้างความพอใจให้กับลูกค้า?

(เลือกได้มากกว่าหนึ่ง)

☐ Customer Intelligence (CI)

☐ การจัดการห่วงโซ่อุปทาน (Supply Chain Management: SCM)

☐ การจัดการสั่งซื้อสินค้า(Ordering Management)

☐ การจัดการลูกค้าสัมพันธ์ (Customer Relationship Management: CRM)

☐ Artificial Intelligence (AI)

☐ การจัดการความรู้ (Knowledge Management : KM)

☐ อื่นๆ (โปรดระบุ_____)

14) คุณเคยได้ยินเทคโนโลยี “Customer Intelligence”?

☐ มี

☐ ไม่มี (ข้าม ไปข้อมูลส่วนตัว)

15) เป็นไปได้หรือไม่ที่จะใช้ “Customer Intelligence” ช่วยในการลดต้นทุนและสามารถส่งสินค้าให้

แก่ลูกค้าได้ทันเวลาที่?

☐ มี

☐ ไม่มี (ข้าม ไปข้อมูลส่วนตัว)

16) คุณคิดว่าเทคโนโลยี“Customer Intelligence” จะสามารถช่วยแก้ปัญหาให้กับองค์กรของคุณ และได้เปรียบคู่แข่งอย่างไร ? โดยเลือกเพียงหนึ่งหมายเลขจากหัวข้อดังต่อไปนี้(1 = มีประสิทธิภาพน้อยสุด 2 = มีประสิทธิภาพ 3 = ปานกลาง 4 = มีประสิทธิภาพมาก 5 = มีประสิทธิภาพมากที่สุด)

ปัจจัยต่างๆ	1	2	3	4	5
สามารถเก็บรายละเอียดและความต้องการของลูกค้าที่มีอยู่เดิมและลูกค้าใหม่ โดยใช้เทคโนโลยีเป็นบทบาทสำคัญในการทำธุรกิจ					
ลูกค้าได้รับประโยชน์และความสะดวกสบายอย่างแท้จริง (Identify your most profitable customers)					
สามารถกำหนดและวางแผนในการติดต่อกับลูกค้าที่มีอยู่เดิมและลูกค้าใหม่					
สามารถกำหนดกลยุทธ์และช่องทางทางการตลาดได้มากขึ้น					
เป็นปัจจัยในการผลักดันและกระตุ้นถึงความต้องการของลูกค้า					
รักษาความสัมพันธ์อันดีระหว่างลูกค้ากับร้านขายอุปกรณ์ก่อสร้าง					
รักษาความสัมพันธ์อันดีระหว่างผู้จัดหา(Suppliers) กับร้านขายอุปกรณ์ก่อสร้าง					
เพิ่มประสิทธิภาพในการจัดส่ง					
สามารถคาดการณ์ความต้องการของลูกค้าโดยดูจากพฤติกรรมการซื้อของลูกค้า ที่มีผลตอบรับกับร้านค้า					
สามารถประมาณยอดขายและกำไร(The stream of expected future profits) ที่ควรได้รับจากการประมาณการซื้อของลูกค้า					
สามารถแนะนำและชักจูงในการขายสินค้าให้กับลูกค้าได้ดียิ่งขึ้น โดยดูจากข้อมูล ของลูกค้าที่เก็บไว้ผ่านเทคโนโลยี “customer intelligence”					
ลดความไม่พอใจของลูกค้าโดยเน้นการบริการลูกค้ามากขึ้นเพราะสามารถ ทราบถึงความต้องการของลูกค้าทำให้ลูกค้ามีความต้องการที่จะซื้อสินค้าของ ร้านนั้นๆในคราวต่อไป					

ส่วนที่ 2: ข้อมูลส่วนตัว

1. เพศ :

☐ ชาย

☐ หญิง

2. อายุ:

☐ ต่ำกว่า 20 ปี

☐ 20-25 ปี

☐ 26-30 ปี

☐ 31-35 ปี

☐ 36-40 ปี

☐ 41-45 ปี

☐ 46-50 ปี

☐ 51-55 ปี

☐ 56-60 ปี

☐ มากกว่า 60 ปี ขึ้นไป

3. สถานภาพ:

☐ โสด

☐ แต่งงาน (จำนวนบุตร _____)

4. ตำแหน่ง:

☐ เจ้าของกิจการ

☐ กรรมการผู้จัดการบริษัท

☐ ผู้จัดการฝ่ายผลิต

☐ ผู้จัดการฝ่ายการตลาด

☐ ผู้จัดการฝ่ายขาย

☐ อื่นๆ (โปรดระบุ _____)

5. ระดับการศึกษา:

☐ ต่ำกว่าปริญญาตรี

☐ ปริญญาตรี

☐ ปริญญาโท

☐ ปริญญาเอก

☐ อื่นๆ (โปรดระบุ _____)

6. ขนาดของครอบครัว:

☐ 1-2 คน

☐ 3-4 คน

☐ 5-6 คน

☐ 7-8 คน

☐ มากกว่า 8 คน

7. จำนวนพนักงานในบริษัท :

- | | |
|-----------------------------------|-----------------------------------|
| <input type="checkbox"/> 5-10 คน | <input type="checkbox"/> 11-20 คน |
| <input type="checkbox"/> 21-30 คน | <input type="checkbox"/> 31-40 คน |
| <input type="checkbox"/> 41-50 คน | <input type="checkbox"/> 51-60 คน |

8. ระบุรายได้เฉลี่ยต่อเดือน :

- | | |
|----------------------------------------------|----------------------------------------------|
| <input type="checkbox"/> ต่ำกว่า 10,000 บาท | <input type="checkbox"/> 10,001-50,000 บาท |
| <input type="checkbox"/> 50,001-100,000บาท | <input type="checkbox"/> 100,001-200,000 บาท |
| <input type="checkbox"/> 200,001-300,000 บาท | <input type="checkbox"/> 300,001-400,000 บาท |
| <input type="checkbox"/> 400,001-500,000 บาท | <input type="checkbox"/> 500,001-600,000 บาท |
| <input type="checkbox"/> มากกว่า600,000 บาท | |



Questionnaires' result

1. What is/are the problems in your organization according to your inventory system and services to customers? (Ranking 1-5 from the most important to the least important)

P1 (High prices of construction equipments)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	17.0	20.7	20.7
	2	6	6.0	7.3	28.0
	3	17	17.0	20.7	48.8
	4	39	21.0	25.6	74.4
	5	21	21.0	25.6	100.0
	Total	100	100.0	100.0	
Total		100	100.0		

P2(Unsatisfied of after services)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4	4.0	4.0	4.0
	1	9	9.0	9.0	13.0
	2	33	33.0	33.0	46.0
	3	8	8.0	8.0	54.0
	4	21	21.0	21.0	75.0
	5	25	25.0	25.0	100.0
	Total	100	100.0	100.0	

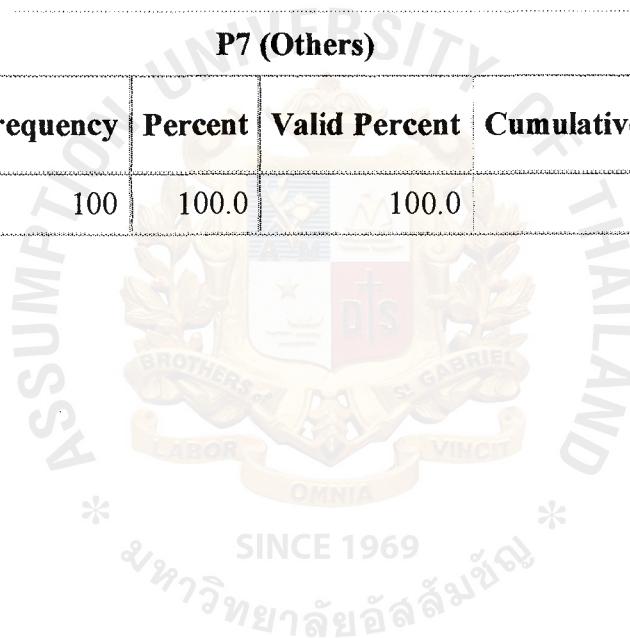
P3 (Problems with supplier qualification)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	63	63.0	63.0	63.0
	3	11	11.0	11.0	74.0
	4	11	11.0	11.0	85.0
	5	15	15.0	15.0	100.0
	Total	100	100.0	100.0	

P4(Problems with supplier qualification)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	16	16.0	16.0	16.0
	1	3	3.0	3.0	19.0
	2	17	17.0	17.0	36.0
	3	21	21.0	21.0	57.0
	4	17	17.0	17.0	74.0
	5	26	26.0	26.0	100.0
	Total	100	100.0	100.0	

P5(Problems with handling reverse logistics)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	26	26.0	26.0	26.0
	2	14	14.0	14.0	40.0
	3	31	31.0	31.0	71.0
	4	24	24.0	24.0	95.0
	5	5	5.0	5.0	100.0
	Total	100	100.0	100.0	

P6 (Customers' demand can't meet products customers' satisfaction)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	44	44.0	44.0	44.0
	2	30	30.0	30.0	74.0
	3	12	12.0	12.0	86.0
	4	6	6.0	6.0	92.0
	5	8	8.0	8.0	100.0
	Total	100	100.0	100.0	

P7 (Others)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	100	100.0	100.0	100.0



2.Which solution do you think is the best ways to eliminate your problems in your organization?

S1 (Find the reliable suppliers)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	81	81.0	81.0	81.0
	1	19	19.0	19.0	100.0
	Total	100	100.0	100.0	

S2 (Find the lower cost of raw material sources)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	86	86.0	86.0	86.0
	1	14	14.0	14.0	100.0
	Total	100	100.0	100.0	

S3 (Improve the logistics channel to create customers' satisfaction)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	52	52.0	52.0	52.0
	1	48	48.0	48.0	100.0
	Total	100	100.0	100.0	

S4 (Rearrange your own channels)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	63	63.0	63.0	63.0
	1	37	37.0	37.0	100.0
	Total	100	100.0	100.0	

S5 (Using Information System to eliminate your problems and increase your productivity)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	18	18.0	18.0	18.0
	1	82	82.0	82.0	100.0
	Total	100	100.0	100.0	

S6 (Others)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	100	100.0	100.0	100.0



3) How often do you order construction equipments from your suppliers?

FREQUENECY					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	11	11.0	11.0	11.0
	2	20	20.0	20.0	31.0
	3	28	28.0	28.0	59.0
	4	30	30.0	30.0	89.0
	5	11	11.0	11.0	100.0
	Total	100	100.0	100.0	

4) Where do you order construction equipments?

WHERE_ORDER					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	1.0	1.0	1.0
	2	5	5.0	5.0	6.0
	3	37	37.0	37.0	43.0
	4	56	56.0	56.0	99.0
	5	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

5) How many suppliers do you have?

HOW MANY SUPPLIERS					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	7	7.0	7.0	7.0
	2	30	30.0	30.0	37.0
	3	19	19.0	19.0	56.0
	4	29	29.0	29.0	85.0
	5	15	15.0	15.0	100.0
	Total	100	100.0	100.0	

6) Who is decision-maker when the organization has to order the products from suppliers?

DECIDERS					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	42	42.0	42.0	42.0
	2	21	21.0	21.0	63.0
	3	29	29.0	29.0	92.0
	4	8	8.0	8.0	100.0
	Total	100	100.0	100.0	

7) Please estimate your order when you buy construction equipments

ESTIMATE_COST					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	1	1.0	1.0	1.0
	3	10	10.0	10.0	11.0
	4	9	9.0	9.0	20.0
	5	31	31.0	31.0	51.0
	6	19	19.0	19.0	70.0
	7	19	19.0	19.0	89.0
	8	11	11.0	11.0	100.0
	Total	100	100.0	100.0	



8) The criteria you use in order to make decision when you select suppliers by ranking from the least important factor to the most important factor.

Please choose only one number from the question as following:

(1 = The least important 2 = rather important 3 = important 4 = highly important 5 = The most important)

CS1					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	1.0	1.0	1.0
	3	9	9.0	9.0	10.0
	4	43	43.0	43.0	53.0
	5	47	47.0	47.0	100.0
	Total	100	100.0	100.0	

CS2					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	11	11.0	11.0	11.0
	3	53	53.0	53.0	64.0
	4	31	31.0	31.0	95.0
	5	5	5.0	5.0	100.0
	Total	100	100.0	100.0	

CS3					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	7	7.0	7.0	7.0
	3	26	26.0	26.0	33.0
	4	61	61.0	61.0	94.0
	5	6	6.0	6.0	100.0
	Total	100	100.0	100.0	

CS4					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	5	5.0	5.0	5.0
	3	18	18.0	18.0	23.0
	4	38	38.0	38.0	61.0
	5	39	39.0	39.0	100.0
	Total	100	100.0	100.0	

CS5					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	2.0	2.0	2.0
	2	11	11.0	11.0	13.0
	3	45	45.0	45.0	58.0
	4	40	40.0	40.0	98.0
	5	2	2.0	2.0	100.0
	Total	100	100.0	100.0	

CS6					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	3.0	3.0	3.0
	2	36	36.0	36.0	39.0
	3	39	39.0	39.0	78.0
	4	22	22.0	22.0	100.0
	Total	100	100.0	100.0	

CS7					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	18	18.0	18.0	18.0
	3	31	31.0	31.0	49.0
	4	27	27.0	27.0	76.0
	5	24	24.0	24.0	100.0
	Total	100	100.0	100.0	

CS8					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	5	5.0	5.0	5.0
	2	12	12.0	12.0	17.0
	3	8	8.0	8.0	25.0
	4	42	42.0	42.0	67.0
	5	33	33.0	33.0	100.0
	Total	100	100.0	100.0	

CS9					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	3.0	3.0	3.0
	2	2	2.0	2.0	5.0
	3	48	48.0	48.0	53.0
	4	46	46.0	46.0	99.0
	5	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

CS10					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	29	29.0	29.0	29.0
	4	49	49.0	49.0	78.0
	5	22	22.0	22.0	100.0
	Total	100	100.0	100.0	



9) What are the criteria you think as the competitive advantage over your competitors by ranking from the least important factor to the most important factor?

Please choose only one number from the question as following:

(1 = The least important 2 = rather important 3 = important 4 = highly important 5 = The most important)

CO1					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	2	2.0	2.0	2.0
	3	17	17.0	17.0	19.0
	4	56	56.0	56.0	75.0
	5	25	25.0	25.0	100.0
	Total	100	100.0	100.0	

CO2					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	10	10.0	10.0	10.0
	3	69	69.0	69.0	79.0
	4	19	19.0	19.0	98.0
	5	2	2.0	2.0	100.0
	Total	100	100.0	100.0	

CO3					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	25	25.0	25.0	25.0
	3	44	44.0	44.0	69.0
	4	31	31.0	31.0	100.0
	Total	100	100.0	100.0	

CO4					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	8	8.0	8.0	8.0
	3	33	33.0	33.0	41.0
	4	29	29.0	29.0	70.0
	5	30	30.0	30.0	100.0
	Total	100	100.0	100.0	

CO5					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	5	5.0	5.0	5.0
	2	25	25.0	25.0	30.0
	3	50	50.0	50.0	80.0
	4	18	18.0	18.0	98.0
	5	2	2.0	2.0	100.0
	Total	100	100.0	100.0	

CO6					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	5	5.0	5.0	5.0
	2	24	24.0	24.0	29.0
	3	45	45.0	45.0	74.0
	4	26	26.0	26.0	100.0
	Total	100	100.0	100.0	

C07					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	18	18.0	18.0	18.0
	3	52	52.0	52.0	70.0
	4	28	28.0	28.0	98.0
	5	2	2.0	2.0	100.0
	Total	100	100.0	100.0	

C08					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	3.0	3.0	3.0
	2	13	13.0	13.0	16.0
	3	40	40.0	40.0	56.0
	4	37	37.0	37.0	93.0
	5	7	7.0	7.0	100.0
	Total	100	100.0	100.0	

C09					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	9	9.0	9.0	9.0
	3	41	41.0	41.0	50.0
	4	49	49.0	49.0	99.0
	5	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

CO10					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	5	5.0	5.0	5.0
	3	55	55.0	55.0	60.0
	4	36	36.0	36.0	96.0
	5	4	4.0	4.0	100.0
	Total	100	100.0	100.0	

CO11					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	9	9.0	9.0	9.0
	3	41	41.0	41.0	50.0
	4	49	49.0	49.0	99.0
	5	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

10) What are the criteria you think as the marketing strategies in your organization by ranking from the least important factor to the most important factor? Please choose only one number from the question as following:

(1 = The least important 2 = rather important 3 = important 4 = highly important 5 = The most important)

STR1					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	5	5.0	5.0	5.0
	3	29	29.0	29.0	34.0
	4	50	50.0	50.0	84.0
	5	16	16.0	16.0	100.0
	Total	100	100.0	100.0	

STR2					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	5	5.0	5.0	5.0
	2	11	11.0	11.0	16.0
	3	62	62.0	62.0	78.0
	4	21	21.0	21.0	99.0
	5	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

STR3					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	14	14.0	14.0	14.0
	3	57	57.0	57.0	71.0
	4	22	22.0	22.0	93.0
	5	7	7.0	7.0	100.0
	Total	100	100.0	100.0	

STR4					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	7	7.0	7.0	7.0
	3	47	47.0	47.0	54.0
	4	36	36.0	36.0	90.0
	5	10	10.0	10.0	100.0
	Total	100	100.0	100.0	

STR5					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	8	8.0	8.0	8.0
	2	30	30.0	30.0	38.0
	3	39	39.0	39.0	77.0
	4	22	22.0	22.0	99.0
	5	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

STR6					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	15	15.0	15.0	15.0
	2	42	42.0	42.0	57.0
	3	33	33.0	33.0	90.0
	4	9	9.0	9.0	99.0
	5	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

STR7					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	20	20.0	20.0	20.0
	3	47	47.0	47.0	67.0
	4	28	28.0	28.0	95.0
	5	5	5.0	5.0	100.0
	Total	100	100.0	100.0	

STR8					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	6	6.0	6.0	6.0
	3	33	33.0	33.0	39.0
	4	48	48.0	48.0	87.0
	5	13	13.0	13.0	100.0
	Total	100	100.0	100.0	

STR9					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	9	9.0	9.0	9.0
	3	40	40.0	40.0	49.0
	4	34	34.0	34.0	83.0
	5	17	17.0	17.0	100.0
	Total	100	100.0	100.0	

STR10					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	42	42.0	42.0	42.0
	2	15	15.0	15.0	57.0
	3	15	15.0	15.0	72.0
	4	21	21.0	21.0	93.0
	5	7	7.0	7.0	100.0
	Total	100	100.0	100.0	

STR11					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	13	13.0	13.0	13.0
	2	30	30.0	30.0	43.0
	3	33	33.0	33.0	76.0
	4	17	17.0	17.0	93.0
	5	7	7.0	7.0	100.0
	Total	100	100.0	100.0	

11) Which marketing strategies do you think is the best strategies in your retail shops? (Please ranking 1-5 from the most important to the least important)

SK1					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	16	16.0	16.0	16.0
	2	19	19.0	19.0	35.0
	3	18	18.0	18.0	53.0
	4	21	21.0	21.0	74.0
	5	26	26.0	26.0	100.0
	Total	100	100.0	100.0	

SK2					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	15	15.0	15.0	15.0
	2	32	32.0	20.0	47.0
	3	12	12.0	12.0	59.0
	4	21	21.0	21.0	80.0
	5	20	20.0	32.0	100.0
	Total	100	100.0	100.0	

SK3					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	15	15.0	15.0	15.0
	2	18	18.0	18.0	33.0
	3	10	10.0	10.0	43.0
	4	30	30.0	30.0	73.0
	5	27	27.0	27.0	100.0
	Total	100	100.0	100.0	

SK4					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	6	6.0	6.0	6.0
	2	25	25.0	25.0	31.0
	3	31	31.0	31.0	62.0
	4	27	27.0	27.0	89.0
	5	11	11.0	11.0	100.0
	Total	100	100.0	100.0	

SK5					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	49	49.0	49.0	49.0
	2	18	18.0	18.0	67.0
	3	26	26.0	26.0	93.0
	4	3	3.0	3.0	96.0
	5	4	4.0	4.0	100.0
	Total	100	100.0	100.0	

12) Do you think Information System is one of important thing to help you to solve problems as well as increase your sales volume in your organization?

TECHNOLOGY					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	84	84.0	84.0	84.0
	2	16	16.0	16.0	100.0
	Total	100	100.0	100.0	



13) Which Information System that you think it can improve your productivity and create customers' satisfaction according to their needs?

KN_TEC1					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	84	84.0	84.0	84.0
	1	16	16.0	16.0	100.0
	Total	100	100.0	100.0	

KN_TEC2					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	25	25.0	25.0	25.0
	1	75	75.0	75.0	100.0
	Total	100	100.0	100.0	

KN_TEC3					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	68	68.0	68.0	68.0
	1	32	32.0	32.0	100.0
	Total	100	100.0	100.0	

KN_TEC4					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	31	31.0	31.0	31.0
	1	69	69.0	69.0	100.0
	Total	100	100.0	100.0	

KN_TEC5					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	78	78.0	78.0	78.0
	1	22	22.0	22.0	100.0
	Total	100	100.0	100.0	

KN_TEC6					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	55	55.0	55.0	55.0
	1	40	40.0	40.0	95.0
	9	5	5.0	5.0	100.0
	Total	100	100.0	100.0	

KN_TEC7					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	91	91.0	91.0	91.0
	1	4	4.0	4.0	95.0
	9	5	5.0	5.0	100.0
	Total	100	100.0	100.0	

Name of IT	Frequency	Percent
1.CI	16	6.20
2.SCM	75	29.07
3.OM	32	12.40
4.CRM	69	26.74
5.AI	22	8.53
6.KM	40	15.50
7.other	4	1.55

14) Have you ever heard about Customer Intelligence?

HR_CI					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	11	11.0	11.0	11.0
	2	3	3.0	3.0	14.0
	9	86	86.0	86.0	100.0
	Total	100	100.0	100.0	

15) Is it possible “Customer Intelligence” can reduce costs and help you to send product on time to customers?

PO_CI					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	11	11.0	11.0	11.0
	2	3	3.0	3.0	14.0
	9	86	86.0	86.0	100.0
	Total	100	100.0	100.0	

16) What do you think about “Customer Intelligence” can take advantages better than competitors by ranking only one number from the question as following:

(1 = The least important 2 = rather important 3 = important 4 = highly important 5 = The most important)

SO_CI1					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	3.0	3.0	3.0
	3	4	4.0	4.0	7.0
	4	7	7.0	7.0	14.0
	9	86	86.0	86.0	100.0
	Total	100	100.0	100.0	

SO_CI2					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	1	1.0	1.0	1.0
	4	11	11.0	11.0	12.0
	5	2	2.0	2.0	14.0
	9	86	86.0	86.0	100.0
	Total	100	100.0	100.0	

SO_CI3					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	6	6.0	6.0	6.0
	4	8	8.0	8.0	14.0
	9	86	86.0	86.0	100.0
	Total	100	100.0	100.0	

SO_CI4					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	11	11.0	11.0	11.0
	4	3	3.0	3.0	14.0
	9	86	86.0	86.0	100.0
	Total	100	100.0	100.0	

SO_CI5					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	4	4.0	4.0	4.0
	4	9	9.0	9.0	13.0
	5	1	1.0	1.0	14.0
	9	86	86.0	86.0	100.0
	Total	100	100.0	100.0	

SO_CI6					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	7	7.0	7.0	7.0
	4	6	6.0	6.0	13.0
	5	1	1.0	1.0	14.0
	9	86	86.0	86.0	100.0
	Total	100	100.0	100.0	

SO_CI7					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	5	5.0	5.0	5.0
	4	9	9.0	9.0	14.0
	9	86	86.0	86.0	100.0
	Total	100	100.0	100.0	

SO_CI8					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	4	4.0	4.0	4.0
	4	10	10.0	10.0	14.0
	9	86	86.0	86.0	100.0
	Total	100	100.0	100.0	

SO_CI9					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	4	4.0	4.0	4.0
	4	10	10.0	10.0	14.0
	9	86	86.0	86.0	100.0
	Total	100	100.0	100.0	

SO_CI10					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	8	8.0	8.0	8.0
	4	6	6.0	6.0	14.0
	9	86	86.0	86.0	100.0
	Total	100	100.0	100.0	

SO_CI11					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	3	3.0	3.0	3.0
	3	6	5.0	5.0	9.0
	4	5	5.0	5.0	14.0
	5	0	0.0	0.0	14.0
	9	86	86.0	86.0	100.0
	Total	100	100.0	100.0	

SO_CI12					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	3	3.0	3.0	3.0
	3	6	6.0	6.0	9.0
	4	5	5.0	5.0	14.0
	9	86	86.0	86.0	100.0
	Total	100	100.0	100.0	

Personal data:

SEX					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	78	78.0	78.0	78.0
	2	22	22.0	22.0	100.0
	Total	100	100.0	100.0	

AGE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	10	10.0	10.0	10.0
	4	38	38.0	38.0	48.0
	5	20	20.0	20.0	68.0
	6	15	15.0	15.0	83.0
	8	12	12.0	12.0	95.0
	9	5	5.0	5.0	100.0
	Total	100	100.0	100.0	

STATUS					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	35	35.0	35.0	35.0
	2	65	65.0	65.0	100.0
	Total	100	100.0	100.0	

POSITION					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	48	48.0	48.0	48.0
	2	16	16.0	16.0	64.0
	3	14	14.0	14.0	78.0
	4	12	12.0	12.0	90.0
	5	10	10.0	10.0	100.0
	Total	100	100.0	100.0	

EDUCATION					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	35	35.0	35.0	35.0
	2	57	57.0	57.0	92.0
	3	7	7.0	7.0	99.0
	5	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

SIZE OF FAMILY					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	24	24.0	24.0	24.0
	3	41	41.0	41.0	65.0
	4	21	21.0	21.0	86.0
	5	14	14.0	14.0	100.0
	Total	100	100.0	100.0	

NO OF EMPLOYEES					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	9	9.0	9.0	9.0
	2	33	33.0	33.0	42.0
	3	32	32.0	32.0	74.0
	4	19	19.0	19.0	93.0
	5	5	5.0	5.0	98.0
	6	2	2.0	2.0	100.0
	Total	100	100.0	100.0	

INCOME					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	6	6.0	6.0	6.0
	3	26	26.0	26.0	32.0
	4	22	22.0	22.0	54.0
	5	6	6.0	6.0	60.0
	6	4	4.0	4.0	64.0
	7	26	26.0	26.0	90.0
	8	10	10.0	10.0	100.0
	Total	100	100.0	100.0	

Crosstab

1. Age * KN_Tec3(Customer Intelligence)

Crosstab Count				
		KN_TEC3		Total
		0	1	
AGE	3	4	6	10
	4	30	8	38
	5	12	8	20
	6	11	4	15
	8	7	5	12
	9	4	1	5
Total		68	32	100

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.326(a)	5	.197
Likelihood Ratio	7.177	5	.208
N of Valid Cases	100		

a 5 cells (41.7%) have expected count less than 5. The minimum expected count is 1.60.

2. EDU * KN_TEC3 (Customer Intelligence)

Crosstab Count				
		KN_TEC3		Total
		0	1	
EDU	1	28	7	35
	2	35	22	57
	3	4	3	7
	5	1		1
Total		68	32	100

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.306(a)	3	.230
Likelihood Ratio	4.757	3	.190
N of Valid Cases	100		
a 4 cells (50.0%) have expected count less than 5. The minimum expected count is .32.			

3. SEX * KN_TEC3(Customer Intelligence)

Crosstab Count				
		KN_TEC1		Total
		0	1	
SEX	1	66	12	78
	2	18	4	22
Total		84	16	100

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.100(b)	1	.752		
Continuity Correction(a)	.000	1	1.000		
Likelihood Ratio	.097	1	.755		
Fisher's Exact Test				.748	.488
N of Valid Cases	100				
a Computed only for a 2x2 table					
b 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.52.					

