

MARKETING INFORMATION SYSTEM FOR PURCHASING BOOKS FOR LIBRARY; ASSISTING BUSINESS BUYING BEHAVIOR IN EDUCATIONAL INSTITUTION

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Abstract

Purchasing books for library in educational institution has many problems. The librarians as buyers can not buy books since she/ he does not have sense about the contents and objective of the needs. Students and lectures know better and more capable to selecting books they need, but they do not have authorization and relevant decision to buy them. The buyers can solved the problems if they have support from marketing database or marketing information system. A marketing information system was analyzed and designed to assist librarians, lectures, students to communicate each other.

The librarians make segmentation about categorized books, budget segmentation by topics, study programs, faculties, and major interests. This study proposed a design and a user interface to make a comfortable and precise decision in purchasing books. CRM concepts will be used as a communicating between the librarians and the users.

Keyword: Marketing Information System, decision support system, books purchasing, analysis design information system, segmentation, CRM

1. Introduction

1.1 Organization Buying

Webster and Wind define organization buying as the decision-making process by which formal organizations establish the need for purchased products and services, and identify, evaluate, and choose among alternative brands and suppliers.

Organization like library in university buying books and support students, lectures for research and teaching. The business buyer faces many decisions in making a purchase. The number of decisions depend the buying situation: complexity of the problem being solved, newness of the buying requirement, numbers of people involved, and time required.

Business buyer purchase many books for routine basis like magazines, journals and newest series of books. Business buyer like librarian or head of library only concern about many books he knows, he can't capable to all book topics. Business buyer has major influence to individual buyer, interpersonal, organizational and environmental constrain.

Students and lectures know better and more capable to selecting books they need, but they do not have authorization and relevant decision to buy. Students and lectures as initiators, they request that something be purchased. Head of library as decider and approver to pay money for purchase books. As decider, head of library need Marketing Information System or Decision Support System for purchasing to solved this problem.

Topic about analyzing business market or organization buying focus attention in:

- a. Organizational Buying Situations
- b. Participants in the Business Buying Process
- c. Major Influences on Organizational Buyers
- d. Business Buyer Decision Making
- e. Institutional & Government Buying

1.2 Supply chain for books library

Students and lectures likely customer, they need books for teaching and research. Library as organization made services and have supplies from distributors or publishers.

Organization need information about books to be purchase, of course organization can ask to them what they need. Most especially lectures can assist book requirement, they can access to Internet likely Amazon.com. Amazon has many services, searching hundred thousands book, detail information about book, and then send email to gatekeepers in library.



Picture 1: Tell a friend

Please saw picture 1, user can send mail to his friend by click button "Tell a friend", after user select book he want.

Gatekeepers in library record this request and entry to computer system.

Picture 2, describe sample book receive from email as request from lecture or student.

Subject: HARLANTO KRISTANTO asks you to see his book at Amazon.com
From: "HARLANTO KRISTANTO" <mailto:service@amazon.com>
Date: 26 Oct 2006 23:12:13 -0700
To: hantokristo@iain.ac.id

amazon.com
and you're done.

From: HARLANTO KRISTANTO

RE: 0

I found this book at Amazon.com and thought you might be interested.

amazon.com
and you're done.



The Complete Legal Reference Table System: Managing Your Administrative and Policy Division

by Book City

11 Nov 06

Price: \$45.00

Buy with 1-Click

Success,

HARLANTO KRISTANTO

Picture 2: Sample book receive from someone

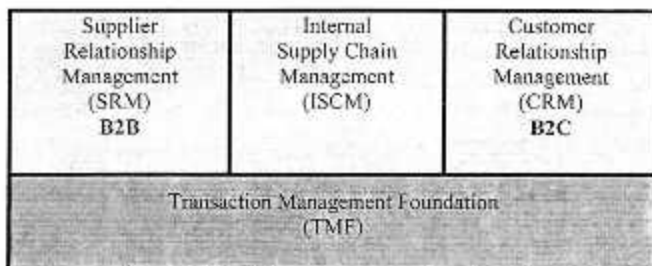
1.3 The supply chain macro processes

The emergence of supply chain management has broadened the scope across which company make decisions. This scope has expanded from trying to optimize performance across the division, to the enterprise, and now to the entire supply chain. From an enterprise perspective, all processes within its supply chain can be categorized into three main areas: processes focused on downstream, processes focused internally, and processes focused on upstream. (Chopra,2004) Three macro supply chain processes as follows:

- Customer Relationship Management (CRM): Processes that focus on downstream interactions between the enterprise and its customers. People said this is a B2C (Business to Customer) process.
- Internal Supply Chain Management (ISCM): Processes that focus on internal operation within the enterprise.
- Supplier Relationship Management (SRM): Processes that focus on upstream interactions between the enterprise and its supplier. People said this is B2B (Business to Business) process.

The fourth important software building block that provides the foundation upon which the macro processes rest. This category is Transaction Management Foundation (TMF), this is included basic Transaction Processing System Library like circulation (borrow and return), searching books with online public catalog (OPAC), member management library, and many component for analysis. All transactions have and need database, marketing database or data warehousing.

The relationship between the three macro processes and the transaction management foundation can be seen in figure 3.



Picture 3: The Macro Processes in Supply Chain

1.4 Business to business marketing (B2B)

B2B popular acronym for the business-to-business market that mean, organizational purchase of goods and services to support production of other goods and services for daily company operations or for resale. In this case, for omit buyers personality we can used this concepts. (Turban,2006)

The librarians or buyers can use Amazon.com facility to purchase books with corporate account. Head of library can split authorization for books purchasing into several participant like dean assistants in faculty department. Corporate account has only one address to receive dispatch, and only one person in charge to pay for book purchasing. (Brisco,2004)

Picture 4 describe head of library can manage the participants. Participants can be categorized as only one primary contact, and many buyers. Primary contact can grand to any other participants and remove it.

Primary contact has many facilities account management tools like;

- a. Manage participant, Account information
- b. View order history
- c. Payment Method and Shipping Address

Unfortunately primary contact can not interrupt or cancel order the participants, because primary contact only know about order from participants if only the participants finish the transaction purchasing books, its very late to cancel.

amazon.com Corporate Account

Manage Participants

Send an e-mail alert to account managers when any order associated with this account is placed.

[Update alert option](#)

Active Users				
Name	Email Address	Status	Role	Edit
MARIAWATI KASITAMTO	mariaawati@india.ac.id	Authorized	Primary Contact	Edit
KIRIANSI	kiriansi@yahoo.com	Authorized	Buyer	Edit or Remove
Yuli Datar	yed@india.ac.id	Authorized	Buyer	Edit or Remove

Need to add participants?

[Designate new participants](#)

Figure 4: Manage Active User Corporate Account in Amazon

[View Order History](#) > [View Order Details](#)

Amazon Order#: 102-7687246-7053768
 Order Date: 10/21/06
 Shipping Status: Not Shipped

Items Ordered:	Price:
1 of : SQL Queries for Mere Mortals: A Hands-On Guide to Data Manipulation in SQL By : Michael J. Hernandez, John L. Viescas 1 of : Fundamentals of Information Systems, Third Edition By : Ralph Stair, George Reynolds	\$34.84 \$61.16
1 of : Database Design for Mere Mortals: A Hands-On Guide to Relational Database Design, Second Edition By : Michael J. Hernandez	\$34.84
1 of : Information Retrieval: Algorithms and Heuristics (The Information Retrieval Series) (2nd Edition) By : David A. Grossman, Ophir Frieder	\$27.74
1 of : Library Information Systems: From Library Automation to Distributed Information Access Solutions By : Thomas R. Kochtanek, Joseph R. Matthews	\$49
1 of : Database Design and Development: A Visual Approach By : Raymond Frost, et al	\$98.79
	<hr/>
	Item(s) Subtotal: \$305.97
	Shipping & Handling: \$83.93
	Textbooks Promotion: (\$15.00)
	<hr/>
	Total Before Tax: \$374.90
	Estimated Tax: \$0.00
	<hr/>
	Grand Total: \$374.90

Figure 5: View Order History in Corporate Account

2. Analysing and Design Marketing Information System

2.1 Analysing about segmentation and priority

The primary users of CRM software application are database marketers who are looking to automate the process of interacting with customers. To be successful, database marketers must first identify market segments containing customers or prospects with high-profit potential.

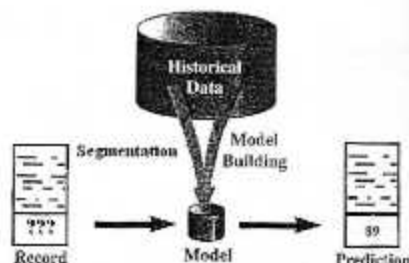
cancel. With limited budget in purchasing library materials, provide budget planning (Bernstein,2002)

Scoring formula has many factors:

- a. Policy about year of published
 - o Informatics books have policy not to buy book more than 3 years before this year. If 1 years before scoring high and 3 year before or more very low score.
 - o Mathematics books have policy to buy book more than 10 years before
- b. Policy about curriculum
 - o If book to be purchase included or available in curriculum has high score, otherwise low score
- c. Policy about budget
 - o If budget for this segment ready and not used up, score high.
- d. Policy about author
 - o If author has in database and the author have write many books the score is high. The new author, has score fifty percents
 - o If access or circulation for this author is high, and then score is higher than the other.
- e. Policy about stock
 - o If stock for this book little, but circulation statistics high, then this book feasible to buy again. The score for this problem is high.
 - o Study program has ratio one book available only to 20 students, if study program have 100 students which need this book, than study program must have 5 unit minimum. If stock not reach this amount, than score to buy is high.
- f. Policy about utilization
 - o If book to be purchase enter in many segments lecture interest and segment study program, than score for utilization is high
 - o If book only in one lecture interest and one in study segment, than score utilization is fifty percents

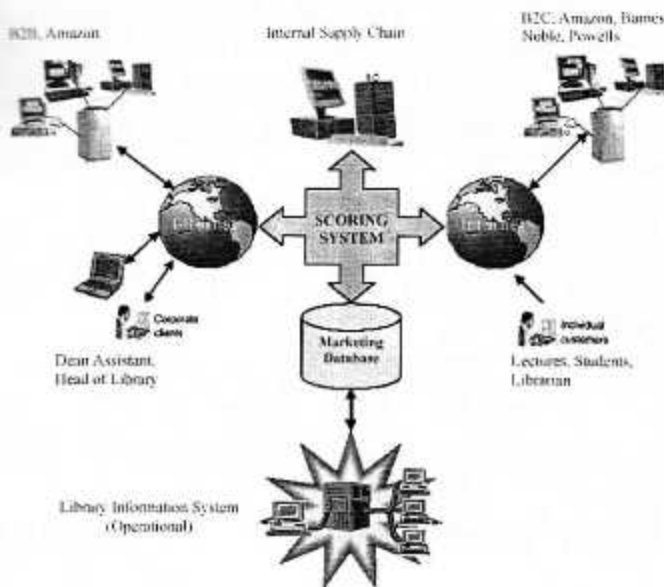
Marketing database must be set for this scoring system and segmentation. Resume from operational database must updated every day or short periodically. Data from circulation day by day much supporting scoring system.

Pictures 6 describe scoring system for purchasing book. (Berson,1999)



Picture 6: Scoring System Model

3.2 Infrastructure Design and Workflow Diagram



Picture 7: Infrastructure and workflow Scoring System for Purchasing Books

Marketing Database has data from operational database and set up table from segmentation and scoring system. Lecturers, students access internet for selecting books and send mail to marketing database. After scoring execute, system have any support decisions to their request. Lecturers and students satisfied with CRM system and they have read any responds or messages from the managerial.

The buyers or librarian can order to Amazon for buying many books with corporate account. Corporate can tracking the package, tracking order and ease to pay with credit card.

3 Design System Scoring

3.1 Design user interface for client

Clients or customers are lecturers and students, after they access internet for browsing and selecting books they need, and then they send e-mail to gatekeeper library.

Gatekeeper entry to the marketing database with this form and they can see the response after manager ask the request: (see picture 8)



Prediction

Picture 8: Form Order and response from Librarians or Buyers

3.2 Design user interface for managerial

Manager or head of library can see requests from all users. Manager need to scoring system for support this decision. With this form, manager can see LIST ORDER: (see picture 9).

Order Date	Title	Order by	Due Date
10-10-2008	Indonesia (manager Using)	rds	20-10-2008
17-10-2008	The Complete Lean Enterprise: Value Stream Mapping	Bud	20-10-2008

Picture 9: Form List Order for Manager to see requests from users

Manager can access who request books order, and he can see detail transaction and he can Analyzing Order in picture 10. Manager can see support from Marketing Information System with 89 score. Manager can make decision quickly, for instance if score more than 75 the request can be approved immediately. Manager can click in decision area and send comments for this request.

Picture 10: Form Analysis Order for Manager to see result from scoring system

Manager can reject this request, or delay this request. This scoring system not make decision, its only support to manager, final decision is in manager. Manager can worried about result from scoring system, why scoring system predict too low or too high? Manager can see more detail support in picture 11.

Factor	Value Description	Score
Year	2004	20
Condition	Good	10
Author	John Doe	10
Publisher	Pustaka Jaya	10
Book	1	10
Edition	High	10

Picture 11: Form Detail Support, Manager see detail analysis.

Final score 89 is average from 6 detail score:

- a. Because this year is 2006, and this book published at 2004, scoring for year published not too high, this score is 20

- b. Because this book can find in curriculum study program, the score is high, maximal score 100
- c. Scoring system can find the author for this book in marketing database, after check in formula segmentation this author has score 90
- d. Scoring system see budget segmentation, and calculate cost \$45.00 to budget balance, and then scoring is 85
- e. Scoring system find this book have stocks (3 books), but because this book much needed to student and then feasible to buy again.
- f. Scoring system find this book used in many segmentation in this system, and then score for utilization is high or receive score at 90.

Picture 11 is describing core this research, how to solved purchasing problem for books library, and describe about Marketing Information System support to managerial.

4. Conclusions

This design can solve the problem about purchasing books library with pay attention to all participants in this process.

- a. Lectures and students can help selecting books to buy, and they satisfied because all the want can be fulfilled or receive message reason to reject request. This is CRM concepts.
- b. The buyers or librarian have supports and they can reduction interpersonal and individual influences.
- c. Information Technology is enabler for all problem automation, can make smoothing decision from marketing manager or person in charge.

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