Why doesn’t marketing use the corporate data warehouse? The role of trust and quality in adoption of data-warehousing technology for CRM applications

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Abstract
Purpose – This paper aims to investigate organizational factors to explain why a corporate data warehouse (CDW) was not used by marketing to the extent that it was expected to be used for CRM and other marketing purposes.
Design/methodology/approach – A case study of a single health-care payor organization is used in this study.
Findings – Reveals the three primary implementation factors related to marketing’s lack of trust in the data, low perceived data quality and perception of marketing needs not being met. Practically, the unique data needs of marketing should be considered in the implementation of a CDW and its interface.
Originality/value – This is the first study of its kind to take the needs of marketing users into consideration.

Keywords Data handling, Customer relations, Trust

Paper type Research paper

An executive summary for managers and executive readers can be found at the end of this issue.

Introduction
This paper uses a single case study to investigate organizational factors that explain why a corporate data warehouse (CDW) that was implemented in a health care payor organization was not used by marketing to the extent that it was expected to be used by that function for CRM purposes. This study demonstrates that findings from the marketing research context (Moorman et al., 1992) are supported in the context of the adoption of the corporate data warehouse by marketing professionals. As in the context of marketing research users and suppliers, this study suggests that, in a marketing context, information supplier and information user relationships as well as data quality influence the extent by which CDW data are used in decision making.

While the information technology literature would predict that many other implementation factors, such as training and overall environmental factors, are important, this study concludes that three interrelated constructs emerge in explaining 50 percent of the disappointing use of a corporate data warehouse by the marketing function for CRM applications. These three primary implementation factors are as follows: marketing’s lack of trust in the data in the CDW; marketing’s low perceived quality of the data; and marketing’s perceived lack of incorporation of their needs in the design of the data warehouse and data warehouse interface. This study also suggests perceived data quality is related to both trust in the data and trust in the information technology (IT) department. Together, these implementation factors can lead to successful implementation in data-intensive and information-sharing environments characteristic of data warehousing technologies supporting CRM applications.

The proliferation of data warehousing technologies and applications has been widely documented among information technology consultants and vendors. According to Gartner, organizations will be confronted with the challenges of managing over 30 times more data by 2005 in a continual effort to meet the demands associated with electronic commerce and supply-chain applications (Hochberg, 2000). Defined as a central repository used for decision support, data warehouses are integrated repositories of subject oriented, time-variant data from throughout the organization. Data related to the industry and the customer are collected over time and used to perform trend analyses, forecasting and comparative analyses. Typically, these data are not updated in real time; data are refreshed on a periodic basis from operational systems. To enable these capabilities, data warehousing implementations deploy multiple, parallel and massive processing databases as well as a series of other...
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hardware and software technologies (Wixom and Watson, 2001).

Customer relationship management (CRM) applications as well as Sales Force Automation (SFA) and contact management are often enabled by data warehousing technologies. These data-based applications have been viewed as an emerging research stream in the marketing and information systems fields (Kalakota and Robinson, 1999; Romano, 2001; Shaw et al., 2001; Abbott et al., 2001; Starkey and Woodcock, 2002; Reinartz et al., 2004). Despite widely reported implementation failures ranging in rates of 55 to 75 percent and warnings about the perils of implementation (Woodcock and Starkey, 2001) data warehouses have been described as the linchpin to any effective marketing effort that intends to include CRM as part of its strategy. To this end, IDC projected that the worldwide spending on CRM applications, including databases, would total $20 billion by 2004.

Broadly defined, CRM is a process/application that permits organizations to gather and analyze customer data rapidly while seeking to improve customer loyalty via targeted products and services (Rigby et al., 2002). From a functional point of view, CRM depends upon operational integration of disparate sources of data, often in a data warehouse. The analytical functions of CRM are typically performed in the marketing or sales function itself, with support from a data mining or statistical analysis group. Cooper et al. (2000), in a case of First America Corporation, described analytical CRM applications as including campaign and contact management, profitability analyses and analysis of customer preferences and profiles. The data in the data warehouse must not only be the type of data necessary to support these marketing applications, but the data must also be easily accessible by the marketing function.

Prior implementation studies have offered the factors to investigate the change associated with technology adoption. In a study of 111 organizations, Wixom and Watson (2001) offered empirical findings impacting data warehousing implementations but not in a marketing context. Few researchers, with the exception of Cooper et al. (2000) and Haley et al. (1998), have investigated the implementation of data warehouses for the purposes of supporting specific marketing applications, such as analytical CRM, but from the point of view of upper management. While one qualitative study has focused on the data aspect of CRM implementation (Abbott et al., 2001), no major studies have investigated the implementation of data warehouses for the purposes of supporting marketing applications, such as CRM focusing on the needs of marketing managers.

Thus, the general question this exploratory research was designed to answer was as follows: What organizational implementation factors are most important in explaining why marketing would not use a corporate data warehouse and its interface to the extent that it was expected to be used by that function for CRM purposes? The single case study method was used through the cooperation of a single health care payor that was a research partner in the ecommerce program at a southeastern university. This firm allowed the research team access to functional marketing, information systems and other managers that used or were expected to use the CDW in their job functions. A series of focus groups and one-on-one interviews was employed to answer the managerial question “Why doesn’t marketing use our corporate data warehouse and what went wrong in our implementation process?” As a starting point, the research team examined prior implementation models and then developed questions based on one particular model. This paper describes the initial model, the focus group process and presents the results of the qualitative study, including a revised model.

The research method

There are many systems implementation models in the information systems literature. As a starting point, the Payton and Ginzberg (2001) model, developed to explore the implementations of multiple health care information networks, provided a broad base from which to begin the analysis. The Payton and Ginzberg model, based on the diffusion work of Cooper and Zmud (1990), although not developed in the data warehouse context, does provide a broad perspective of adoption across organizations. This inter-organizational context where many organizations must work together is analogous to the case studied here, where one company is seeking to adopt a CDW across different functional areas. Additionally, the model offered a broad framework from which to investigate the data warehouse implementation from many perspectives in the organization, including organizational dynamics.

The dependent variable in this model as shown in Figure 1 is the success of the implementation effort. Three factor clusters are defined: push/pull factors, behavioral factors and shared systems topologies (Payton and Ginzberg, 2001). Push or pull factors are elements that can influence an organization’s willingness to adopt a given technology, strategy, and/or change initiative. These factors include competitive pressures and perceived economic benefits from the system (Cooper et al., 2000).

Behavioral factors in this model are those factors that stand to impact and/or influence stakeholders and include end-user support, organizational autonomy and control, as well as vendor and top management support (Wixom and Watson, 2001). Political factors are those factors that arise from conflicting personal and organizational objectives among stakeholders. Political factors will tend to impede rather than facilitate implementation progress.

Shared or integrated systems topologies represent certain aspects of the infrastructure needed for a data warehouse. These factors include arrangements for cooperation and information sharing as well as for assuring information quality. Both elements of shared system topologies, information sharing and information quality were predicted to have favorable impacts on implementation progress.

As the degree of information sharing among internal departments increased, the quality of information available was also expected to increase, thereby fostering successful implementation (Cooper et al., 2000; Wixom and Watson, 2001). Others (Wixom and Watson, 2001) offered the suggestion that implementation success impacts perceived systems success, which can be defined here as the quality of data warehouse and the data that is extracted from the system. This model would imply that information quality is a central measure of the success or failure of a data warehouse to sustain CRM initiatives. Although our results support the importance of data quality in CDW adoption, several other implementation factors are highlighted by this research in the marketing context.
Method

The model in Figure 1 was used as a starting point from which data were gathered from five two-hour focus group sessions with a large health care payor group. Sessions were held exclusively with either all marketing (users), all “power” users who were systems experts, or all information systems teams (service providers). Teams included current, soon-to-be and power users, data warehousing internal systems staff and middle management. The size of the groups were small, typically four or five members and lasted a full two hours each. This small group size, combined with one-on-one follow-up interviews where necessary, assured that all focus group questions would be addressed and that all members would have time to answer the questions. In addition, top management agreed not to attend the focus group sessions to avoid biasing responses. An experienced focus group facilitator, one of the team members, worked to elicit responses from all focus group participants. For the most part, participants were enthusiastic supporters of this research effort and had an interest in seeing the CDW succeed in the organization. Appendix 1 lists the questions that were asked of all focus group participants.

Prior to using these questions in the focus group sessions, the research model was pre-tested via five one-hour interviews with managers from the health care organization. Meeting notes were analyzed and the team determined that the initial exploratory questions from the Payton and Ginzberg model were sufficient to elicit comments that related to all areas of the model. The questions were also broad and flexible enough to allow the team to uncover some additional constructs and, as will be seen, some unexpected results.

All focus group sessions were recorded and transcribed by a professional writer on staff at the health care organization as well as a member of the research team. The research team member provided a transcript within 48 hours and the professional writer worked from simultaneous tape recordings. Names and titles were withheld from all transcribed documents when given to data coders. Follow-up interviews with top management and other key users were conducted for clarification.

The research team analyzed the data in the transcripts and then developed coding dictionaries to capture the marketing and information systems-related constructs. The coding dictionaries (Appendix 2) were developed to capture the marketing and information systems constructs that would capture the essence of the responses to the questions in Appendix 1. Two independent coders were used and a simple percentage agreement among constructs was calculated initially. Next, the initial coding dictionary was refined and factors were eliminated and/or combined where appropriate. This new coding dictionary was given to three new and different independent coders for an additional analysis beyond simple percentage agreement. A coefficient of interrater reliability among the three different independent coders was calculated. To facilitate the calculation of
interrater reliability, only three of the five focus group transcripts were analyzed (marketing managers, active marketing users and newly trained marketing users) and only the results of these three groups are reported below. These three specific transcripts were used to focus the analysis because these groups were the three groups composed solely of marketing personnel. The results of analyzing these three transcripts is summarized in Table I.

To analyze the focus group data, the team adopted the analysis method prescribed by Yin (1994). This method involved looking for patterns in the data and making adjustments in the analysis accordingly. This flexible, interactive process allowed the team to change the implementation model based on emerged findings. For example, though the initial questions (Appendix 1) did not focus on trust and integrating marketing needs, these factors proved to be important in this case study context. The analysis meant that the model needed to be changed based on the patterns that emerged. To help explain these changes, it was then necessary to consult the relevant marketing literature.

Scott's kappa (also known as the bias-adjusted kappa or $\pi$) was calculated for interrater reliability. Lacking any a priori expectations of the marginal proportions, this method of calculation accounts for the possibility of chance agreement among coders. Although coding elements (categories) were established, the verbal contributions (focus group comments) were free to vary and “fall” into any cell within the coding table. $\pi$ is not influenced by the frequency by which categories are used and is calculated as:

$$\text{kappa (}\pi\text{)} = (o - e)/(1 - e),$$

where $P_o$ is probability of observed and $P_e$ is the probability of expected.

Additional justification for $\pi$ can be found in Currall et al. (1999) and Neuendorf (2002).

While Currall et al. (1999) offered a framework for developing coding categories and Neuendorf (2002) illustrated the mechanics of the statistical kappa calculations, Scullen et al. (2003) offered guidelines for judging significance; these guidelines recommended the following ranges: 0.41-0.60 indicating a moderate agreement and 0.61-0.80 indicating substantial agreement.

### Findings

The detailed results of the analysis of the three marketing focus groups using the coding categories shown in Appendix 2 are reported and summarized in Table I. Table I indicates that coders categorized a total of 441, most of which related to the significance of data quality (22.45 percent), ability to support specific marketing needs (20.63 percent) and trust (13.15 percent). Together, these three constructs constituted nearly 50 percent of the coded comments from the focus group transcripts and will be discussed in detail below.

Much of the information systems literature, both academic and practitioner, has pointed to the criticality of the economic impact and costs associated with data warehousing implementations. These results show that only 3.17 percent of the comments in this study were concerned with economic factors. In addition, coded comments failed to support the significance of the internal IT support organization in adoption (4.08 percent).

Data integration (shared systems topology in the original model) which was mentioned 10.3 percent of the time and data quality were the only two significant factors from the original model that were supported. While data integration is undoubtedly important in adoption, the three factors of data quality, trust and unmet marketing needs dominated these focus group discussions. Because these three factors accounted for 50 percent of the mentions and appear from the analysis to be related, the discussion of the findings focuses primarily on these factors.

Our results indicate that the model for predicting the adoption of a CDW in a marketing context needs to look quite different from models in the information systems literature. Marketing managers and system users are not primarily concerned with broad economic factors nor with the level of systems support. Although the information systems model was a good starting point, a more realistic view of what might predict adoption of a CDW by marketing for CRM and other applications is represented in Figure 2. In this figure, the three major factors of quality, trust and understanding of marketing needs dominate the explanation of the adoption of the CDW.

### Marketing needs and data quality

The reason for the substantial disconnect between the organization and its marketing function in terms of the use of the CDW can be explained by the history of the CDW implementation in this particular organization. Part of the motivation in CDW development in this organization was to enable a single source supporting privacy, data management and reporting regulations. However, other parts of the organization had also looked to the data warehouse to solve
various managerial problems. Although the organization formed a cross-functional team, in the needs definition process marketing needs became less of a focal point of the CDW. As the implementation progressed, more emphasis was placed on financial and billing applications rather than marketing. Marketing’s unique needs in terms of analyzing past customer performance, incorporating outside data sources into its analyses, analyzing specific customer data and running targeted marketing campaigns, were not the needs of the underwriting, billing and other financial and strategic functions of the organization.

As a result, as the focus group results reveal, when marketing was interviewed after implementation, the group was quite frustrated with both the warehouse and the data interface. In fact, the company was considering giving marketing access to the warehouse via mini “data marts” to facilitate an easier, more user-friendly GUI (graphical user interface) with quick response time and decision support functions. Marketing had actually possessed its own dedicated system before implementation and, as the following comments reveal, actually felt functionality was lost or difficult to get at with the CDW and its interface:

All right, so we’re using less than ideal ways of measuring the effectiveness of those things right now, I would say. Because we don’t, I think, have the data or don’t understand how to use the existing data (from the warehouse) well enough to be able to get at it. This is a matter of trusting this data and its quality to make major business decisions and we are not there, yet (marketing manager).

“What would you expect from [our] data warehouse?” I would say that you either looking to do one of a few things[sic]. That is, decrease your costs, increase your membership – increase or retain your membership. We cannot do this or it takes a LOT of work to meet our marketing needs (marketing manager).

Marketers expected the interface to look like it had in training when a prepared dataset was used or to be similar to other packages that they used in their work, like SPSS. Marketers wanted “click and drag” and other systems features with which they were familiar from other marketing applications. Marketers participating in the focus group said they were less likely to use reporting tools (e.g. business objects) themselves and more likely to draw upon the expertise of local “power users.” These users had become internal experts on the CDW application and, as a result, were somewhat overworked in the organization.

Figure 2 Model as a result of qualitative focus-group research

<table>
<thead>
<tr>
<th>Data Quality</th>
<th>Trust in Data, Fns</th>
<th>CRM/Mktg Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDW Marketing Implementation Success</td>
<td></td>
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Notes:
1Intrinsic, conceptual, representational and accessibility dimensions
Other factors representing less than 11 percent of the stated comments are as follows: Data Integration, Top Management Support, Role of Marketing in the Org. Training, End-User Support, Internal IT Support, Economic Impact

In addition, these needs for external, demographic and descriptive data for the consumer market and Dun & Bradstreet company descriptive data for the commercial (B2B) applications which were missing from the data warehouse. Other missing data included information on former customers and prospective customers, neither of which are in the data warehouse. These data were in the system previously used by marketing.

Focus group participants reported “reconciling” mainframe reports to the information from the data warehouse. In addition, overall quality issues were mentioned frequently, such as overall accuracy of the information and other dimensions of data quality. In fact, the general category of marketing needs included several categories that, after our initial analysis, also appeared to be strongly related to overall data quality dimensions (Wang and Strong, 1996). As can be seen from the coding dictionary in Appendix 2, by data quality the users meant data that were accurate, timely, easily accessible, easy to understand and believable, common ways of looking at quality from both the marketing (Parasurman et al., 1994) and information systems (Wang and Strong, 1996) literature.

When users mentioned ease of use of the data warehouse interface in conjunction with the “data” itself,” these comments can be seen as analogous to accessibility dimension of quality as noted in Wang and Strong (1996). Users also mentioned that they needed other data that were not in the warehouse, concepts which relate to the accessibility dimension noted in Wang and Strong (1996). In addition, users expressed interest in having access to a data dictionary, the concept of access relates to the perceived ease of understanding of the data as an element of data quality as well as accessibility. Users needed a dictionary because when accessing the data did not have an idea exactly what data items meant. Without a knowledge of the data items the users could not use the data. Perhaps most importantly, users and potential users distrusted data extracted from the warehouse; lack of interest relates to the intrinsic dimension of quality known as believability (Wang and Strong, 1996). Because of the interrelationships between these concepts the revised model in Figure 2 also shows marketing needs to be correlated with data quality dimensions. Similarly, in Figure 2 trust dimensions are shown as correlated with needs understanding. It is certainly likely that the more marketing trusts that the organization works well and produced good quality underlying data, the more likely marketing will its needs are understood.

Trust and data quality

As with understanding of marketing needs, the element of trust in the data in the CDW is strongly related to the concept of data quality. Trust was not initially predicted as a success factor in the original model. Organizational trust and rust of the data in the warehouse emerged as significant factors in predicting whether users would use the data in the corporate data warehouse to perform CRM analyses (Figure 2). Schoorman et al. (1995) synthesized how trust had been defined among multiple disciplines including organizational development, psychology, organizational behavior and strategy. Notwithstanding the plethora of definitions, Schoorman et al. (1995) determined that several common
themes existed, namely: the willingness to take risks; and minimal presence of two parties – a trustor and a trustee.

In a marketing context, the literature has specifically focused on trust in an organizational context, with organizations as trustor and trustee as the two parties necessary for trust to occur. Morgan and Hunt (1994) suggested the importance of trust and commitment in the development of long-term exchange partner relationships. Like much of the research in the area of relationship marketing, Morgan and Hunt’s (1994) work is based upon social relations theory. Just as two individuals need trust as the basis of an interpersonal relationship, so do two organizations (or in this case two units of the same organization) need to trust each other in order to develop a commercial relationship.

Trust needs to be present in an exchange relationship, such as using information from a central depository like a CDW, for that relationship to function. In the context of marketing information use, trust is defined as a willingness to rely on an exchange partner in whom one has confidence (Moorman et al., 1992). In fact, Moorman et al. (1992) suggest that information supplier and information user relationships influence the extent by which “data” are used in decision making in marketing research applications. In fact, the situation studied here of the CDW implementation can be seen analogous to the marketing research situation studied by Moorman et al. (1992) with the internal information systems department as the information supplier and the marketing department as the information user.

In this study, users mentioned two aspects of trust. One aspect of trust in this situation was organizational in nature and referred to the lack of established working relationships among functional areas and a lack of commitment to information sharing. Yet in the context of organizational trust, there is also the need for individuals involved in the commercial exchange, i.e. trust in the salesperson as well as the organization h/she represents. Ganesan and Hess (1997) have found that in exchange relations, buyers distinguish between both interpersonal and organizational credibility. In this research context, our preliminary analysis indicated that there was a level of trust between individuals working in the organization. Users reported a long-term social relation among functional areas (Appendix 2) but not established working relationships among functional area and no commitment to information sharing. In other words, employees trusted each other individually enough to interact on a daily basis but the organization did not necessarily operate with a high degree of trust. Because trust issues arose in this intra-organizational context, the marketing function was hesitant to use data prepared by the information systems function in the organization. In the language of organizational trust, marketing was unwilling to rely on IT as an exchange partner, in this case the exchange being marketing information prepared by another department.

Another aspect of trust in adoption of the CDW uncovered in this study was trust in the underlying information in the shared system. This concept of trust in the underlying information in this shared system is related to the concept of data quality as well. Moorman et al. (1992) suggest that, although trust and data quality are separate, trust heightens the perception of data quality in our study context. Although this prior literature indicates trust is a prerequisite to quality, is it possible that quality might also signal trust in a system and a willingness to move forward in the relationship, or, in this case, the implementation the data warehouse. Consequently, our revised model shows trust and data quality to be correlated. It is difficult to imagine a situation in this type of implementation where users would trust the data yet not use some aspect of the system. In fact, Moorman et al. (1992) also suggest that both well defined, pre-established relationships with high quality interactions and data quality define the degree of trust in the provider-user relationship.

Practical implications

The chief contribution of this research is in identifying the major components of an overarching model to understand how a corporate data warehouse can be best implemented for use by marketing, particularly the factors of intra-organizational trust, trust in the data, data quality and an understanding of the marketing functions needs. While trust has long been considered a factor of importance in inter-organizational relationships between marketing vendors and their customers, trust needs to be applied in the intra-organizational context to provide an understanding of which factors can facilitate success in the field of data warehouse applications for marketing.

This study indicates that marketing applications must be considered carefully before the data is developed for a data warehouse if marketing is going to use the CDW for CRM and other marketing purposes. Marketing functions tend to use data that is in some cases different from the rest of the organization, including looking at past-customer data, lost-customer data and outside information sources. Because marketing is driving the future of the organization through using a variety of primarily customer-based data sources and not reporting upon its past using financial information, the factors predicting success of marketing’s use of a CDW are different than the factors that predict implementation success for other types of systems applications.

These findings have been presented to the top management at the health care organization studied. The organization had not previously considered the relationship between the quality and trust dimensions discussed herein and had not realized that marketing did not perceive its needs were being met. The organization is addressing these issues.

Research limitations and future research

Recognizing the limitations in generalizability of this type of study with a single firm, a quantitative study of organizations using corporate data warehouses to support the marketing function is planned. This work suggests that more research be focused on the complex intra-organizational exchange relationships that stand to impact data warehousing implementations. In the future study, it would be expected that organizations successful in CDW implementation use by marketing would be characterized by highest perceived data quality and trust in these intra-organizational relationships. Just as trust is important in long-term social relationships between individuals, in the successful marketing implementation of data warehouse applications, a high level of intra-organizational trust and trust in the data itself should be expected. In addition, perceived high quality data would not be expected without trust; trust factors are expected to be correlated with various aspects of perceived data quality.
Marketing would also be expected to perceive its needs have been met if there is trust as well as data quality.

Another key contribution of this future research might be that the importance of perceived data quality and trust might be expected vary over the stages of the systems implementation (Payton and Ginzberg, 2001). Just as relationships form, grow and decline, the importance of organizational trust should change as intra-organizational relationships develop (Morgan and Hunt, 1994). This research suggests that data quality, meeting marketing needs and trust are correlated relationships. As the social context of the implementation evolves, perceptions of these key factors would also evolve.

References


Appendix 1. Interview guide

Push/pull factors:
1 What economic benefits is your organization anticipating (has experienced) as a result of data warehouse implementation?
2 Were there any costs to your organization as a result of participating in this effort? Do (have) the benefits outweigh costs? Explain.
3 How has the competitive environment influenced your decision to implement the data warehouse?

Shared topology:
4 What types of information will be shared (are shared) among data warehouse users?
5 How (has) will information sharing benefit your organization?
6 Does the data warehouse provide the precise (e.g. content), timely, current, relevant and accurate information you need? Does the data warehouse provide quality information to facilitate your needs? If not, what is needed to improve information quality?
7 How has the data warehouse impacted (expected to impact) the quality of the information that you receive (will receive) and use to facilitate decision making?

Behavioral facilitators:
8 What (has been) will be the role of the internal IT group (vendor)?
Appendix 2. Coding dictionary

A. Data integration (as impacting information sharing)
A1 Need for standardized data definitions and structures.
A2 Need for agreed up definitions among diverse user groups.
A3 Continual use of Legacy Systems for source data prior to CRM initiative.
A4 Continual use Legacy Systems for sources data after the CRM initiative.

B. Training
B1 Users not engaged in appropriate training based on job roles.
B2 Level of technical delivery is appropriate.
B3 Continual training throughout the implementation process.

C. Data quality
C1 Data are not accurate.
C2 Data are not timely.
C3 Data are not easily accessible.
C4 Data are not easy to understand.
C5 Data are not believable.

D. End-user support
D1 Use of power users (often too much emphasis on power users).
D2 Role ambiguity and conflict among new users and power users.

E. Economic impact
E1 Perceived benefits of the application are not tangible (e.g. ROI, payback period, rapid time to market).
E2 Application is expensive to implement yet useful.

F. Top management support
F1 Top management is not visible.
F2 Top management's role is unclear.
F3 Top management fails to communicate the key mission and strategy.
F4 Top management is not committed to the implementation process.
F5 Top management is supportive (financially & in actions).

G. Internal IT (information technology) support
G1 IT group is knowledgeable with respective to the technical application.
G2 IT group is not knowledgeable with respective to the business functions (e.g. marketing needs, examples).

H. Trust
H1 There is not an established, working relationship among functional areas.
H2 There is a long-term social relation among functional areas (high-quality interactions).
H3 Users do not believe in the information shared and gathered from the system.
H4 Users are not willing to reply on data from system as shared by various departments.
H5 Lack of commitment to the information-sharing relationships.

I. Ability to support CRM, marketing needs
I1 Requests for data take too long.
I2 Data analyses take too long.
I3 Support applications (business objects and SQL) are not accessible.
I4 Inability to support and/or perform segmentation, identification of profitable customers, prospects, differentiation, longitudinal analyses, etc.

J. Role of marketing in the organization
J1 Lacks influence in the implementation process.
J2 Marketing needs are not a top priority.
J3 Other functional areas get IT and top management support before marketing (marketing requests are acted upon afterwards).