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The Beauty and Importance of Quality Customer Information

Many executives find the subject of data management to be unglamorous and mind-numbing. They pay only lip service to their company's need for quality customer information – until they realize how much is really at stake. When a critical project cannot go live due to data quality problems, the response rate on marketing campaigns is substandard due to an inability to define proper target groups or the total credit outstanding of international customers cannot even be estimated – only then senior management begins to take notice. Poor customer information means not only wasted money, but also key performance indicators and thus the basis for guiding the corporate strategy might be flawed. After the EU has included data privacy into the Charter of Human Rights and member states have adopted the EU Data Privacy Directive into national law, the legitimacy and correctness of storing and processing customer information is at stake.

This paper focuses on the banking industry; its key considerations and concepts can equally be applied to other industries where companies are storing and handling detailed data on a large number of customers.

Introduction

According to research why projects in the area of Customer Relationship Management (CRM) fail, one key reason is that the customer data is being ignored (Nelson and Kirby 2001, p.1).² “Although a CRM initiative may have multiple vendors and timelines that take months or years to implement, the vast majority of enterprises pay no attention to the data that will support investments and systems” (Nelson and Kirby 2001, p.1). Senior managers need to understand the need, importance and legal implications of a good foundation of data and professional customer data management if they are to get best value from customer data: “Good customer management requires good customer data management” (Foss et al. 2002, p.144). Then enterprises will find that subsequent investments in CRM projects will

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² Similarly, in a study among 43 institutions in Germany (Link/Hildebrand1994, p.117) difficulties with getting customer information and IT-related challenges have been highlighted as the main problems in the area of database marketing (DBM).

generate acceptable payback.

In many banks, customer data was originally collected and managed departmentally per branch or by individual account managers. Some banks still operate this way. It was not possible, for example, to understand the needs and preferences of the individual customer, judge his value, determine his potential or get a management overview on how the bank is doing business within one customer segment. But it is the advancement in computer technology which helps companies to understand and communicate with customers who have specific characteristics and attributes (Christopher et al. 2002, p.30).

This paper provides guidance on how banks – as an example for companies handling large volumes of data – can enhance the quality, quantity and meaningfulness of customer information data. The analysis is framed by the following key issues:

- Creation of a consistent CRM data architecture
- Evolving analytical systems to leverage customer information
- Discussion of legal implications and data privacy issues

Creation of a Consistent CRM Data Architecture

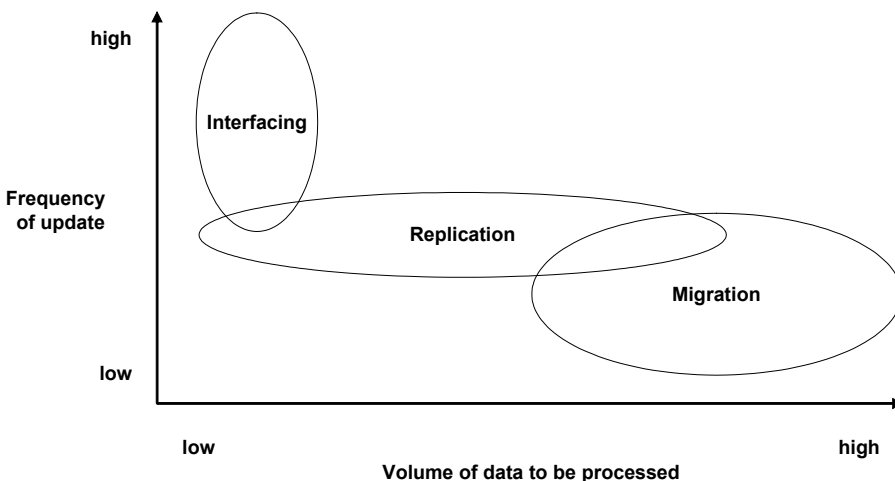
Most banks have several – if not hundreds – of different operational sources containing data concerned with their customers. Thus for all, but the simplest or most recently founded banks with a clean system architecture, a universal database containing all customer information will remain an elusive desire. Therefore most banks will be forced to source customer information from multiple systems and combine them to create a single, integrated view of the customer as the cornerstone for all CRM initiatives.

Different semantics add to the complexity. For example, what is meant by the term customer? Is it an individual, the household or a corporate client? Frequently these meanings are not consistent from one data source to the next. When multiple departments are capturing data, their priorities and requirements may differ (Berrian 2003, p.2). Account managers in Private Wealth Management may want a physical address where they can best reach and meet their clients, but accounting may want to have a mailing address. The creation of multiple customer touchpoints also increases the danger of capturing incorrect or duplicate information. A CRM project needs to first understand and then to reconcile all these different needs, semantics and their usage within the bank. This is a laborious and arduous task which is often underestimated (Kramer 2002, p.11).

The next challenge is in accessing all these heterogeneous databases. This requires special know-how about technology which is sometimes up to 30 years old. “After years of piecemeal technology purchases, companies have inevitably ended up with a mishmash of disparate systems spread throughout different units” (Hagel and Brown 2001, p.106). The major core banking systems have certainly solved some problems, but they have also

created new ones. Because they are relatively inflexible, they tend to lock banks into rigid business processes. It becomes difficult to adapt quickly to changes in the marketplace, strategic partnerships and mergers & acquisitions. A more strategic challenge is in designing the future architecture. There is a choice between handing over control to the data model of the new CRM system or retaining control of the data model and architecture.

In most CRM projects enterprises and banks choose to use a vertical specialisation of the data model provided by the CRM vendor. This poses two significant challenges. First, a new operational database with its own data model and semantics has to be introduced. Second, the new database will have to be populated with data from existing systems. It will have to be integrated via appropriate interfaces, replication or migration depending on the volume of data and the frequency of updates. This could portend to possible synchronisation problems tied up with an implementation of bidirectional and real-time data transfers. Today, data trickles slowly through the enterprise, as more than 80 percent of integration is still done with batch file transfers (Gartner 2003, Chap 11.2). Also, the issue of the leading system has to be discussed. As some of the functionality and data will be duplicated by the CRM suite, it has to be decided, which functionality should be pulled out of the established systems and re-used or substituted with functionality from the vendor. In some cases the bank might have to live with duplicate functionality leading to inconsistent business process support.



Source: Foss et al. 2002, p.151

Figure 1. Data Movement – Timing and Volume

The second option is to retain control of the entire CRM data architecture and to map the new CRM functionality right into the established databases. This approach brings its own challenges and operational risks in terms of

manipulating the heart of the core banking systems. Thus a variation would be to introduce a new Operational Data Store (ODS). The ODS would on one side interface with the new CRM system and other superordinate leading applications. On the other side it would connect to the established databases (Conrad 1997; Feld and Stoddard 2004; Gartner 2003, chap 11.1; Hagel and Brown 2001).

Providing this integrated view of data does not come without challenges. The autonomy of local applications must not be endangered; it needs to be possible to continue using the existing applications. The integrity, consistency and dependencies of redundant data needs to be ensured. Potential access (write, update, delete, read) conflicts need to be handled by a global transaction management agent.

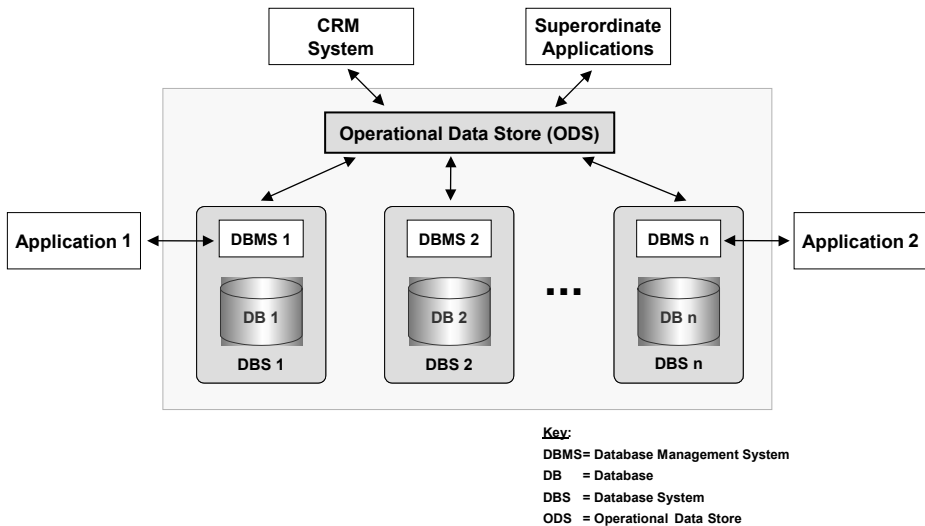


Figure 2. Introducing a New Operational Data Store

Frequently data complexity is also caused by business process complexity (Foss et al. 2002, p.157). Then process reengineering, simplification and introduction of Straight-Through Processing (STP) should be the focus for the bank.

Once the process landscape and the architectural framework has been laid, data needs to be treated as a 'Holy Grail'. It is a valuable asset for the bank and resources for its maintenance need to be allocated. Rather than struggling with defining and assigning ownership of complete subject related data areas, the nature of distributed data should be accepted and data stewards (Gartner 2003, chap 11.1) should be named who are responsible for the quality and consistency of a smaller designated portion of data. It is recommendable to place this responsibility as close to the point of data

capture as possible. Robust measures of data quality and its impact on customer management processes need to be build. These measures should include, for example, financial data on wasted marketing activity generated by poor data inputs, the amount of rework undertaken at information-intensive stages in customer management processes (Stone et al., p.245). Customer-facing employees should have incentives and sanctions in place relating to customer-information quality in the respective data stewardship area.

Evolving Analytical Systems to Leverage Customer Information

Information technology in banks is generating more and more data and is permitting it to collect or capture various information. Technology also makes it possible to use the extended data, conduct comprehensive analysis (Porter and Millar 1985, p.152) and develop a fine-grained customer understanding on a mass scale. This makes “various CRM functions like customer segmentation, communication targeting, retention, and loyalty much more effective” (Srivastava et al. 2002, p.14).

In order to translate customer data into measurable results, banks need to focus on creating an analytic capability that enables to leverage customer information through data aggregation and analysis to gain customer insight, make better decisions, and shape future customer interactions (Harris 1999, p 3). Banks need to recognize that CRM impacts many different aspects of their business.

The first steps are to determine what customer specific insight is actually needed to plan and optimize customer relationships and what metrics will subsequently measure the success in meeting the bank’s strategic objectives. By working backward from the business goal, it is possible to concentrate on the source of the appropriate data, rather than collecting and analyzing all kinds of irrelevant data simply because it is readily available in the bank (Gartner 2003, chap 11.3). As so much of the usefulness of customer data depends on how it is analysed, the analytical capabilities should be one of the first areas to plan (Foss, et al. 2002, pp.148-149).

As outlined above, data must be extracted from several databases, transformed into a usable format and integrated for loading into an analytical database. This process is called ETL (extraction, transformation and loading). Internal data can be enriched with external data to complete possible gaps. However, external data is not considered as valuable as internal data since it is also available to competitors.

Banks can classify three different fields of data to effectively manage their customer relationships:

- *Identification Data* focuses on identifying the customer. It contains the name, company or household, address, customer and account number.
- The *Customer Status* describes the status of the relationship between

the customer and the bank together with the probability of converting a market participant into a customer. The following five levels are possible: Non-usage of offered banking products, usage of similar or competing banking products, contacted non-customers, prospects and customers (adapted to the banking industry from Link and Hildebrand 1993, p.33).

- *Additional Customer Information* about the customer is sometimes also referred to as descriptive data (Arndt and Gersten 2002, p.5). Much of this data comes from the interaction of the bank with the customer, surveys or behavioural studies and is therefore likely to be incomplete or outdated. It is the bank's responsibility to keep this data up to date and clean as the customer is highly unlikely to inform the bank about changes in this contextual kind of data.
- The *Customer History* contains details on the transactions that comprise the relationship between the bank and the customer.
- *Marketing Data* entails summarized analytical results of information available about the customer, for example the customer value, potential, risk of attrition, channel preference, need analysis, cross-selling opportunities, contact occasions and information about campaigns.
- *Contractual Data* is about contracts between the bank and the customer including legal data (like the facility ID and the agreed limit) but also transactional and product utilization data (like drawings under the umbrella of the facility).

There are four main components to customer data quality (Foss et al. 2002, pp.142-144; Stone et al. 2003, p.246):

- *Data Completeness* is the proportion of all possible relevant data sources and the coverage across all defined fields of data (see above) that a bank has integrated into its business processes.
- *Data Accuracy* is the overall exactness of the data associated with each customer record. Data Grouping Accuracy refers to how the bank can consolidate and match data from disparate sources. Through experience the bank and its employees need to gain confidence in data accuracy to ensure that it is fully utilised and exploited.
- *Data Appropriateness* measures how close data matches the business purpose for which it is actually collected and processed. Static appropriateness describes how well the data represents a customer and his current behaviour. Dynamic appropriateness takes it a step further into the future and depicts whether the data tactically (i.e., cross-selling, event generation) or strategically (i.e. decision making in terms of new products, customer segments and the development of value propositions) supports the business direction of the bank.

- *Data Access* describes the speed and accuracy with which a bank can integrate its data and provide information in a usable form to customer-facing applications in a multi-channel environment.

Analytical CRM systems provide many different types of analysis supporting different needs within the bank: customer analysis, financial analysis, market analysis and management-metrics. Applying customer insight – that is making information actionable – as an outcome of analytical CRM aims at optimizing the relationship with the customer by planning and executing customer interactions through:

- Campaign interactions through outbound marketing campaigns. Campaign management systems improve efficiencies by reducing marketing cycle times and by building optimal target groups through applying customer insight. But the real benefit in outbound marketing comes from centralising campaign management across the growing marketing mix of channels, products and customer segments (Silva 2004, p.8).
- Event-driven interactions, in which an event at the customer suggests that the customer may be likely to respond positively to an approach by the bank. These interactions take the form of 1:1 campaigns and can be described by the Latin term *in-speculis* (Messner 2003, p.26).
- Inbound marketing leverages customer insight into all inbound contacts of the customer by “wrapping a targeted message around the tactical response provided to the customer” (Gartner 2003, chap 11.4).

The bank needs to develop a closed loop system that will feed information to dedicated recipients across the bank and allow them to give feedback based on their activities. This feedback can in turn be used to keep the data up to date and to further refine the analytical studies.

Most algorithms as implemented in today’s CRM tools stop at discovering customer models, at pointing out customers who are likely attritors or who are profitable. While these techniques are essential to put the data mining result into action, they still require human experts to postprocess this information manually and do not directly suggest actions (Yang et al. 2003, p. 1). To improve customer relationship, the bank must know what measures to apply to make an individual customer more profitable. To date there are no mining algorithms widely available which accomplish this task automatically. One computational possibility is to build up customer profiles in the form of decision trees, which classify customers and provide profit probability of customers. When a customer of the database falls into a particular leaf node, an algorithm tries to move the customer into other leaves with higher profit probability. For conducting this move, some attribute values of the customer need to be changed through actions which incur marketing costs. The collection of moves should maximize the net profit, which equals the gross

profit minus the cost of the corresponding actions (Yang et al. 2003, pp.1-2).

Discussion of Legal Implications and Data Privacy Issues

It is this very bringing together of information about the customer into a single database that can potentially be at odds with the law (Stone and Findlay 2001, p.167). Initially, privacy protection in Europe was driven by the desire to prevent government use of personal data for purposes of executing malicious policies, as had happened in totalitarian states (Bergkamp 2002, p.32). The EU Commission started working on data protection legislation in the late 1980's, and enacted Directive 95/46/EC on the protection of individuals with regard to the processing of personal data and on the free movement of such data on 24th October 1995. All member states were required to incorporate the EU Data Protection Directive into national law within three years. But by then several EU Member States had already adopted privacy legislation and had to amend existing national law (Becker et al. 2003, p.17). In 2000 the EU had again reinforced its statement on data privacy protection by including it in the EU Charter of Human Rights, which provides that "Everyone has the right to the protection of personal data concerning him or her" (2000/C 364/01, Art 8-1). Hence the EU judges data privacy to be a fundamental core human right – at the same level as, for instance, prohibition of torture or slavery and the freedom of expression.

The Data Protection Directive generally prohibits, subject to listed exceptions, the collection and processing of personal data. As a consequence, the bank as a processor of data bears the burden of proving that the processing is lawful (asymmetry of proof). As a result, it has become much easier to prove positively that an activity of the bank results in specific harm to a customer. Where data collection is permitted, serious restrictions are imposed on personal data processing. Individuals are granted the right to be informed about data processing and, in some instances, their prior consent must be obtained. In marketing jargon, this is also known as opt-in or permission marketing. In addition, there is a right to access data pertaining to the individual, rectify incorrect data and a right to object to data processing. Furthermore, confidentiality and security have to be ensured by the bank.

The bank is obliged to ensure "that personal data must be [...] adequate, relevant and not excessive in relation to the purposes for which they are collected and/or further processed; [...] [it also has to be] accurate and, where necessary kept up to date" (95/46/EC, Art 6). Relating this directive to the so-called customer soft facts (additional customer information, see above) imposes great legal risks. It is common practice for account managers to try to collate as much information about the customer as possible. While information about preferred investment assets or a risk profile is typically required for conducting an asset management respectively lending business, storing information about hobbies and other preferences would pretty openly contradict the EU directive. Also, there is no differentiation if this kind of information is stored electronically in a CRM

system or via the old-fashioned way in the account manager's own folders. Such folders would also be governed under Art. 2c of the EU Directive, where filing systems are defined as "any structured set of personal data which are accessible according to specific criteria, whether centralized, decentralized or dispersed on a functional or geographical basis" (95/46/EC, Art 2b; 95/46/EC, Dir 69).

As a consequence of raising data privacy as a core human right in the EU Charter of Human Rights, the cost of data protection no longer matters because privacy is fundamental and therefore must be protected by all means. The EU privacy legislation does not provide for cases where the cost of privacy is becoming excessive and as it is a fundamental human right, a business case or cost/benefit-analysis would be inappropriate. However, one could argue, that privacy protection is a valuable good which – unlike prohibition of slavery, for example – is in competition with other rights for resources and is therefore subject to the law of diminishing marginal returns (Bergkamp 2002, p.33). Once banks have addressed the most serious security threats, further investments in privacy protection may provide only little added value while becoming very expensive at the same time. Is the customer really willing to pay a significant higher price for this? It could further be argued, that because data privacy is a fundamental human right, it cannot be given up by any individual. It is an inalienable and non-waivable right, just like you are not in a position to surrender yourself to slavery. Even if an individual wishes to give up some or all of his privacy rights to obtain a lower price for a product or service, EU law will not let him do so.

The EU is trying to portray the privacy issue in terms of a fight of consumers versus enterprises. It does not take into account the nature of conducting business, e.g. an advisory business like private wealth management is fully dependent on customer information. Being aimed at protecting the individual against risks arising from data misuse, the EU seeks to ensure a very high level of protection – but it fails to specify the risks involved with using customer information in its Data Protection Directive.

In practice, the bank should focus on Art. 7 of the EU Data Protection Directive together with Art. 8-2 of the EU Charter of Human Rights which both provide cases in which enterprises may conduct data processing:

- The customer has unambiguously agreed to data processing. This can be achieved by asking him to sign an agreement while account opening.
- Data processing is necessary for performing the contract. Clearly, this enables the bank to maintain an account history, transfer payments and provide consultative advice. Internet-only banks priding themselves in customer self-service without any consultative function might experience some restrictions. But in both cases, calculating the value of the customer for the bank is not quite necessary for performing the contract. The current trend and enthusiasm of customers towards bonus programs and different levels of club-

membership depending on the value of business conducted might be a good remedy to lawfully perform such calculations.

- Data processing is also allowed if there is a need to comply with legal requirements (e.g. calculate tax on interest income) and to protect public, official (e.g. ensure taxation) or other legitimate interests (e.g. discover money laundering).

According to a recent study of QCi, less than 40 percent of the (mainly European) enterprises claim to have implemented robust programmes to tackle the legislation-affected issues (Stone et al. p250). However, the issue is still broader than compliance with legislation – a possible loss of customer confidence is more alarming. The 2002 AARP survey³ shows that even though citizens might not be well informed about their financial privacy rights, they believe it is very important that their personal, financial information is not shared without their permission (Bridges 2002, p.1). An overwhelming majority say it is very important (89 percent) and fewer than four percent say financial privacy is not important to them. Remarkably, the survey did not show any differences by age, income, or education in the importance citizens place on the right to financial privacy. But the survey also shows that only 16 percent of the people questioned have a correct view when financial institutions are required to provide privacy statements to their customers and whether these institutions are required to obtain consumers' consent before their personal, financial information (Bridges 2002, p.7).

Conclusion

One hundred percent accuracy, integrity and lawfulness are rarely achievable. The world of banking is simply too complex. But this should not deter banks and other companies from defining and structuring, what their information needs and data availability are, what transformations are needed and what activities have to follow. It is important to prioritise and focus on getting a close loop through to the customer-facing employees and applications, further to involving the customer and back to the business processes and applications of the enterprise.

Customers now have a fundamental right to expect corporations to manage their data professionally. This is no longer just a marketing question, as long as the EU continues with their strict understanding of data privacy, companies are advised to find innovative ways – like bonus programs, club memberships or value-added service offerings – to allow them to actually store customer data and turn it into valuable customer information.

³ A randomly selected sample of 801 Vermont residents age 18+ was interviewed beginning of 2002.

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