The quality of customer information management in customer life cycle management

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Abstract This paper reviews the detailed findings from empirical research into how well companies plan and manager the acquisition and use of customer data. The research shows that few companies reach good standards in this area, and so run the risk of their data not being able to support their CRM strategies and policies or indeed privacy or data protection requirements. The paper then turns to how data can be used to support the management of the customer life cycle, particularly when combined with advance analytics.

INTRODUCTION

In the first paper in this series of three, the authors examined the theory and concepts of data quality management and briefly highlighted some empirical findings. This paper explains in more detail how these findings relate to using data to develop customer insight. The conceptual and experiential material used in this paper comes from:

— QCi's work in helping clients base

their customer management strategies on their customer knowledge
— IBM's global banking team's work on configuring systems to use customer data
— the IBM Business Consulting Services analytics practice, which helps clients get value from their customer data — including improving analysis and business processes. In this paper, this information is presented with specific reference to the mobile telephony

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Table 1: CMAT scoring process

No real progress: nothing/very little happening, possibly isolated small initiatives	0
Isolated activity: something happening, not systematic, not broadly deployed	15
Some commitment and some progress: concept understood, plan to implement, resource allocated	30
Full commitment and real progress: plans exist, resources allocated, implementation begun	60
Clear evidence and being implemented: doing it, can be seen, no evidence of effect yet	80
Fully implemented and having an effect: company is doing it, it can be seen, proper evidence it is working	100

Figure 1: The CMAT customer management model

market, a market where data volumes and the return to improved data management are both very high.

The empirical data come from two sources. The first is the full database arising from the use of the QCi Customer Management Assessment Tool (CMAT®). The second is from a study carried out in the USA using the research version of the tool. QCi's CMAT is one way to measure the quality of customer management. This work is summarised in a recent book, 'The Customer Management Scorecard'.¹ The model is summarised in Figure 1. The model covers main elements of customer management — 260 factors in all. It assumes that a company knows

which market it is in and where it wants to be — but that is all. The scoring criteria for each of the 260 factors are listed in Table 1.

GENERAL RESULTS

The average results of the assessments in 2000–2002 are shown in Table 2. This shows that despite strong consultancy and research support, companies are not using business practices that allow them to manage customers profitably. The lack of applied best practice occurs throughout the model of customer management. Although systems, data and measurement score relatively well, analysis and planning are weak, and this is the area where data are turned into profit.

Table 2: Average assessment scores

Overall average	35
Analysis and planning — knowing which customers you have, which you want, planning to win and keep customers	31
The proposition — why customers should join, stay and buy more	25
People and organisation — structure, motivation, communication etc	40
Information and technology — systems and data	42
Process management — methodical approaches to all aspects of CRM	32
Customer management activity — the actual process of managing customers, as described in the customer management stages above	32
Measuring the effect — whether what was planned was implemented and the results it achieved	48
Understanding the customer experience — ie, knowing what the company and its competitors do to customers, seen from the customers' point of view	27

Table 3: Scores for a selection of CMAT questions

Life cycle model	10
Life stage model	12
Retention rates	25
Customer's positioning in life cycles	22
Lifetime value understanding	22
Which customers should you actively develop	35
Segment development plans	22
Cross-sell triggers	20
Product portfolio sequence	15
Customer information plan	11
Reason for loss storage	23

The authors now consider in more detail the areas relevant to this paper. Table 3 shows the scores for a selection of questions related to the use of data in understanding and planning customer management over time. It is clear from these scores that use of data is a weak area. Particularly weak are the areas associated with the customer buying cycle and customer lifetime value. In some sectors (eg automotive, telecommunications, financial services, business travel), it is this knowledge that is the key to competitive advantage in customer acquisition, retention and development; this is confirmed by the US study.

THE US STUDY

In October, 2001, QCi and Acxiom Corporation investigated why organisations in the USA are finding so many difficulties in the area of customer data management and usage. For this

study, a CMAT-Research (CMAT-R) assessment was used. This consists of a two-hour, face-to-face interview with one or more customer management or marketing executives from each organisation. CMAT-R uses the most important 49 of the full CMAT questions.² To this base questions were added which focused on data management and usage. While a full assessment requires *evidence* of progress to be presented about each practice, a CMAT-R assessment relies on discussion with the interviewee, so that scores from a CMAT-R assessment are often higher than those from a full assessment.

The project focused on the role of customer data integration (CDI), as well as data management and usage in customer management. The research covered 15 large corporations with activities in the USA and, except in one case, the study used face-to-face interviews.

Figure 2: Comparison of CMAT-R scores for USA and Europe

General findings

Based on detailed analysis, the research uncovered the findings outlined in Figure 2. The CMAT scoring approach distinguishes between intent, reality and effect. Fifty per cent is a rough benchmark for acceptable business practice, while 100 per cent is the upper limit for a fully deployed and matured business practice that shows clear benefits. Figure 2 shows that the CMAT-R sample scored slightly lower than the full data set of US-based organisations in all but one of the broad section categories.

The reasons why performance is not very good despite significant customer relationship management (CRM) investment include:

- senior executive ownership and leadership is required, but is often absent
- too much thinking, too little doing,

many CRM programmes get stuck in the strategy phase

- CRM accountability is often split between different departments: sales, service, customer administration, marketing
- education in customer management is needed but not made available across the organisation
- poor programme implementation leads to poor performance

Information management and usage findings

To evaluate the area of information management and usage more thoroughly, the analysis sections listed below are further defined and individual best practices are clustered by section as follows:

- vision and strategy
- investment

Figure 3: CMAT-R subset scores (based on 22 areas related to information management and usage)

- resourcing
- information content
- information usage
- information management
- technology support
- integration.

Figure 3 shows that there are many areas for improvement in customer information management, but also that there is a lot of work being done on improving information management and usage. Companies are now more aware of the importance of leveraging customer data to support customer management. However, an enterprise customer information plan is often absent. Another low-scoring area, *appropriate access to customer data across the organisation*, is a major issue for most of the organisations surveyed. Furthermore, access to certain analytical measures of customer value — customer worth, lifetime value or even reason for loss — were the weakest scoring areas of the analysis.

Conclusions from the US study

The two companies that scored highest in this study are companies that have taken significant action to ensure that their customer information is properly managed and integrated. Thus, the strongest performer brought together transactional data from many business and product divisions with non-transactional data, including contact history, demographics and preference data. While such integration does not guarantee customer management success, it enables companies to understand and serve customers better. The high scorers either had significant outsourced IT relationships that helped them prioritise and manage key data related issues, or a well-designed information gateway that managed data quality and integration across different systems platforms. The authors see information management becoming more significant as new channels are used and as a higher proportion of transactions require

direct links to a customer record. The US Security and Exchange Commission's requests for reporting of customer information will create new pressures for already overburdened information management infrastructures.

Customer information is the fuel in the customer management/CRM engine. It is a key factor for more facets of customer management than might appear obvious at first glance. Customer management needs a strong customer information infrastructure to support it. Organisations must have enterprise plans for the management and use of customer information, covering marketing, sales, customer service, finance, operations and IT. The individual best practices in information management and usage, and the sample findings, are detailed below. These areas were summarised in the authors' first paper, published in the previous issue of the *Journal of Database Marketing*.³

Create an enterprise customer information management plan

Ensure that an enterprise plan for the management and use of customer information is in place. Organisations spend vast sums of money on managing and using customer information, and the customer database is often quoted as a major asset of the business. As such, it should be covered by a comprehensive plan that does this asset justice. Only one organisation in the US study felt it had an enterprise customer information plan in place and actively being used. Only 4 per cent of companies in the global assessment base felt they had such a plan in place. In many cases, departmental plans existed (ie, in marketing or in CRM teams), but organisations found it hard to take an enterprise view.

Obtain resources to support the plan

Ensure that the resource requirements of customer information management and usage are sufficient to support the enterprise plan. Build into the requirements that this is a specialist area where employee development and sourcing may be constrained. Consider strategic outsourcing as an option. Customer information management and usage requires various skills that are in short supply. Consequently, organisations must ensure that they not only have sufficient resources in place to meet current business needs, but that succession planning is also in place. Only one of the organisations assessed felt it had this issue fully under control. Most recognised the issue but had not yet confirmed plans to implement a robust process in this area.

Build measures of data quality

Build robust measures of data quality and take remedial action when necessary, including incentives and sanctions for customer-facing employees. Organisations should understand and measure the impact of data quality on the various customer management processes and build appropriate business cases for investment in data quality improvement programmes. These measures should include, for example, financial data on wasted marketing activity generated by poor data inputs. In addition, other less obvious process measures, such as the amount of rework undertaken at information-intensive stages in customer management processes should be included. Customer-facing employees should have incentives and sanctions in place relating to information quality on the customer database since these employees are best placed to capture and validate data. 'Understanding of data quality' scored well across the board in the US sample but, interestingly,

‘incentives and sanctions’ had a low overall score, with only two organisations claiming to have them in place.

There are four components to data quality:

- data completeness: this is the percentage of all possible data sources and the coverage across all defined data fields a company has integrated into its decision support and operational CRM processes. If there are data about customers in many different operational data stores, then all of those sources should be integrated into the CRM system. However, this also refers to sources of outside data that may be available
- data accuracy: this is the overall accuracy of the data content identifying contact information and known data (internal or external) associated with each customer record. Once a company has all of the sources and fields identified and populated, how accurate is that data content? In most companies, this answer will vary considerably with each source
- grouping accuracy: this is the accuracy with which a company can consolidate data from disparate sources. Once a company has all of the data sources identified and has performed the necessary hygiene to ensure that they are accurate, it is how well it can identify and group multiple occurrences of the same customer in order to provide a comprehensive and accurate customer portrait
- data access: this is the speed with which a company can integrate its data and provide those data in a usable form across all decision support and customer-facing applications. If all the activities described in the first

three components of data quality take months or weeks to complete, a company still will not be driving its CRM strategy based on the most recent information available.

Theoretically, a company can represent where it is in a ‘data quality continuum’ to constantly improve its position. Each improvement directly influences the effectiveness of a company’s CRM strategy.

A company manages its data quality by using CDI. This means the creation of a ‘comprehensive customer portrait’ made available anytime, anywhere, across the enterprise as needed, based on business requirements. These CDI processes handle extremely complex data management tasks and, in many ways, provide the foundation for the most important component in the overall success of a CRM strategy — an understanding of the customer.

For the past few years, one of the authors’ companies has used assessment tools containing data quality measurement components. Data diagnostics is the first step in building data quality measures. In one test on a client’s data, almost 64 per cent of the identifying information for customer records was good — but over 36 per cent of the records had data anomalies. This company also provides a data quality index score that benchmarks performance against an industry average.

Define a single customer view

Build a detailed understanding of the issues around the 360° view of the customer prior to making commitments to build such a view. This does not assert that an organisation should already have built such a customer view. Indeed the findings confirmed that very few organisations have such a view. This

paper suggests that organisations should build an *understanding* of what such a view entails, enables and costs. There are big differences in the costs and implications of the options. In the US sample, most organisations recognised the significance of the issue but tended to be inconclusive in their analyses and had not chosen a specific route to building this understanding. For example, an organisation in an e-commerce banking start-up sector may find that it needs a complete view of its customers available in real time, and it may even find that this view is relatively easy to attain as it has no legacy systems or unclear issues to resolve. Another organisation that relies on an intermediary sales channel may find that, while it wants a 360° view of the customer for market and customer analysis and planning, it does not need it to be in real time as it is used for offline data mining. The 360° view is a moving target, the key is to build an understanding of what is required by the organisation, what is achievable and at what price.

Collect transaction history data

Hold and provide appropriate access to a minimum of three years of transaction history in a form that enables detailed analysis. Three years typically represents two or more sales cycles, although some industries, such as the automotive industry, may require up to six years of data to achieve similar analysis outputs. Data should be held at the transaction level and should include a unique customer ID along with the date, product, volume, value and channel/outlet for each transaction. Ideally, the data should also include the transaction margin. For analysis purposes, postal codes and customer segmentation-related fields also should be accessible. Overall scoring on access

to transaction data was mid-range in the US sample, but there were big discrepancies across sectors. Financial services and telecommunications typically scored well, with the automotive sector less so. From the wider CMAT benchmark only 28 per cent of companies had three years or more of sales purchase information.

Use customer data to understand customer current and lifetime value, preferences and retention drivers

This includes the following:

- using customer data to improve the customer interface(s)
- understanding and determining individual customer value across the customer base
- using lifetime value data as key feeds into marketing activity
- gathering and using customer preference data to build customer satisfaction and reduce operating costs
- ensuring that retention activity is driven by all valid data available.

Presenting data already known to the organisation at the customer interface can show customers the value of giving such information in the first place. It can also support personalised messaging. Two organisations flagged the capability to return comprehensive customer data at each customer touchpoint as adding significantly to the customer experience. However, most organisations could not do so at all or only in a limited number of contact channels. Limitations in the area of CDI and the single customer view were the most common barriers identified. Customer data should be used to recognise customers with multiple relationships and, in some cases, multiple addresses. Proper recognition of households leads to accurate

segmentation and modelling. It also enables organisations to perform the most appropriate groupings for strategy execution.

Customer current value

An organisation should be able to determine the value of *individual* customers, combining sales margin, sales and marketing costs, management costs, logistics and service, etc. Armed with this information, one can make better decisions on marketing activity, including acquisition profiles and planned customer loss programmes. This capability was rated poorly in both the CMAT-R sample and across the CMAT database as a whole. This meant that organisations could not conduct robust analyses, creating further weakness in customer management activity and ultimately in the measurement of success. Developing this capability is not as difficult and expensive as one might think. An individual, customer-value figure based on informed 'guesstimates' built on a core of robust data is better than not having one at all. CDI and good data quality capability help to improve the accuracy of customer value data. One key to progress in this area lies in a good analysis team and the senior management commitment to measuring customer value.

Lifetime or long-term value

Organisations should recognise the likely lifetime of new and existing customers as well as their short-term value when allocating marketing budget and priorities. This should be translated into an allowable cost per sale — a well-established metric in the campaign evaluation and review process. Scores in the CMAT-R sample and in the wider CMAT data set were very poor here.

One exception was found in the CMAT-R sample in the publishing sector. Inability to calculate and use lifetime value is probably a result of weaknesses in both ability to isolate complete views of individual customers and possibly a weakness in resourcing of the analysis and planning function. Outsourcing this analysis to specialists, if needed, could be a good option in the short term.

Customer preferences

The gathering and use of customer preference data results from inviting customers to state their preferred communications frequency/channel/timings, etc. When gathered and implemented in a robust manner, customer preference data help retention and can help to cut costs. However, gathering preference data and then ignoring them or operating outside of the preferences shared is worse than not gathering them at all. Communication based on customer preferences can improve the perception of the organisation with regard to the privacy issues. Preferences are either overtly, or by implication, 'opt-in' and so in a safe zone as far as customers are concerned. Two organisations in the sample showed a sophisticated understanding and use of customer preference data. However, for most, gathering and use of these data was at best sporadic and the data gathered were under used.

Retention activity

To support retention activity, *reason for loss* should be sought and stored on the customer database for every known customer loss. This may be as simple as a drop-down list of possible options, even though it will not be able to be completed in all situations. Given the

business benefits of retention over ongoing acquisition, any supporting information for retention is valid. Similarly, event data, such as price enquiries, changing order patterns and lapsed accounts can be used as possible predictors of defection. This area was rated very poorly in the CMAT-R sample, with only two organisations claiming to have made significant progress in this area. Other organisations scored poorly even on recognition of the issue. Retention remains poorly addressed overall. In the wider CMAT data set, some 63 per cent of organisations still did not even measure retention rates.

Build a customer infrastructure that supports recognition and welcoming of customers

Build an infrastructure and set of processes that enables recognition of when a new customer has conducted a first transaction with the organisation and then trigger appropriate welcoming activity. This affects customer perceptions of an organisation and helps to build a platform for communications. Organisations should use 'welcoming activity' to capture data while the customer is receptive and build up the capability to personalise communications with customers based on preferences. Organisations as a whole, in both the CMAT-R sample and the global assessment base, were handling this issue well, with the majority having robust welcoming programmes in place. While QCi research in previous years showed that welcoming programmes were scarce, there was diversity in practice in the current sample. Welcoming activities range from real time over multiple channels — using the opportunity to capture and validate preference data — to welcoming programmes which run offline, such as mailing campaigns that

welcome a new customer who is actually an existing customer buying through another channel. The former is where organisations should be aiming, although a full multi-channel solution takes time to develop. The infrastructure consists of a single customer view with a strong CDI capability to manage the recognition process for new and existing customers.

Account for third-party data (intermediation)

Take into account the impact that intermediation has on a company's information management capability and be proactive in anticipating and resolving problems associated with exchanging data with this third party. Where a third party sits between an organisation and its final customers is an issue that has caused many organisations problems with gaining access to managing and using customer information. This issue is of less concern to most organisations than it would have been five years ago, even in the sectors where intermediation is the norm, such as brokerage, automotive and insurance. The majority of organisations interviewed considered these issues now to be well understood and addressed, typically through joint marketing programmes between the parties, with the intermediary being encouraged to share data with the supplying organisation.

Understand privacy

Understand privacy and its implications in all relevant geographies as both a threat and an opportunity. Best practice in this area goes well beyond the monitoring and implementation of legislative imperatives. Organisations should understand the reasons for concern. For example, are customers

actually happy to share data with suppliers, but just do not like the current terms and conditions? Or is it invasiveness or distrust that is the issue? Most of the CMAT-R organisations believed that they understood and had acted upon the privacy issues they faced. This contrasts significantly with the wider, more European, international CMAT assessment base, in which fewer than 40 per cent claim to have robust programmes in place to tackle the tougher legislation-affected issues. Far fewer organisations saw privacy as an opportunity to build deeper, trusted relationships with customers. This begs the question, is the privacy legislation that has forced US-based organisations to take note of this issue only a forerunner of what is to come? The authors' view is that privacy — as an issue that organisations must allocate resources to — is only just emerging and many twists and turns have yet to emerge.

Consider outsourcing business processes

Consider outsourcing of information management business processes when appropriate or beneficial. Having a robust framework for determining whether to outsource information management activities is a best practice that the majority of organisations assessed to date indicated they had made significant progress with.

Conclusion

The US study showed that, while many organisations were conscious of most issues relating to managing data quality to get value from the data, many were not managing their data very well. It will now be considered how data can be turned into value through applying a customer life cycle approach.

A METHODOLOGY FOR DATA USAGE IN CUSTOMER LIFE CYCLE MANAGEMENT — CASE STUDY OF UK TELECOMMUNICATIONS

Unpublished IBM studies have shown that there is a big difference between operators, both within the UK and between the UK and other countries. This applies to several performance indicators, such as average revenue per user, churn rates, cost to serve and, most important of all, profitability. The business case for improved customer analytics starts with this disparity. Despite it, most mobile telecommunications operators treat all customers the same. Improving customer analysis and using its results creates value through revenue generation and reducing costs. Revenue is increased by:

- increasing the volume and mix of new customers
- reducing the churn of profitable customers
- extending the use of existing products
- cross-selling the use of new products.

Costs can be reduced by:

- reducing the cost to serve by matching service to value
- increasing the use of self-care
- achieving higher returns on lower marketing expenditure
- reducing fraud.

In all the above, however, returns are only secure when business processes are changed so that the analysis is used as the regular basis for managing customers. The most successful organisations have implemented customer analytics by using a three-stage approach:

- the development of a marketing and customer analytics vision, implementation blueprint and

Source: Business Consulting Services

Figure 4: The customer journey and the company process

Initial enquiry	At point of sale	Getting started	Usage	Payment and bills	After sales	Leave
Respond to my interest quickly	Provide me with personal package	Provide context sensitive help for me	Personalise my products just for me	Recommend to me how to make my billing easier	Reward me for my high level of spend	Offer me better tariff/ product before I ask
Show that I am important to you	Provide me with info on relevant services	Import my numbers from current provider	Help me to customise my set-up	Tell me about new billing channels	Provide me with a high service level	Provide me with a good subsidy on new handset
Provide relevant info on package for me	Provide me with a good subsidy and price	Personalise based on my stated preferences	Provide me with relevant interesting offers	Increase my credit limit without me asking	Compensate me as appropriate after failure	Let me pay for better service if I have to
Respect the permission I have given you	Show me how to personalise my device	Help me set up my contact lists	Listen to me when I tell you what I would like	Tell me how I can use my existing plan better	Provide context-sensitive help for me	Listen to me when I tell you why I am unhappy
Provide me with consistency across channels	Provide instant decision	Provide me with info on relevant services	Tell me how to make more effective use of services	Tell me about better tariff/service packages	Recommend how I can get more out of your offer	Help me move my number and contacts out

Source: Business Consulting Services

Figure 5: Value-generating actions for customers who depend upon analysis

- prioritised business case
- a step-by-step approach whereby a small number of processes are improved via pilots and successes used to justify more significant investments
- phased development of the full architecture, enabling analytics and revised business processes.

This process must work both for the customer journey and for the company, as illustrated in Figure 4. Many different value-generating actions can be taken with customers at different stages of the customer journey, as shown in Figure 5.

The main areas where change is required in order to embed an analysis-driven process into customer management are:

- communication and change management
- data availability
- content tagging
- contact strategy
- process complexity
- measurement
- optimising offers
- technical implementation.

Figure 6 shows the types of strategy that

Figure 6: Aligning customer management strategy with value

Figure 7: Moving the customer to a higher level of base service

could be deployed for customers of different values. One of the most profitable is to provide higher service levels to customers of current or predicted high-value, conventional voice services, encouraging them to extend usage more and to use additional products and services eg picture messaging and data services. A

particularly successful strategy is to move customers to a higher base level of services, as shown in Figure 7. To do this, the following approach should be followed:

— model the whole care and service system to understand current costs

- throughout the value chain and implications of different configurations
- determine how the company will manage and deliver different service packages/levels for different segments
- define new product, tariff and care/service packages
- determine how to integrate analytics into operational processes
- communicate internally to ensure consistent delivery.

In conclusion, returns are only achieved when business processes are adapted together with the effective use of analytics. The most successful organisations have implemented customer analytics by using a three-stage approach, as follows:

- the development of a marketing and customer analytics vision, implementation blueprint and prioritised business case
- a step-by-step approach whereby a small number of processes are improved via pilots and successes used to justify more significant investments
- phased development of the full architecture, enabling analytics and revised business processes.

Of course, none of this is possible unless the data required for customer life stage analysis are available at the right quality and for analysis and action.

CONCLUSIONS

One of the most significant challenges faced by many companies is to ensure that the data required for improving customer management are available and of sufficient quality. Companies need to:

- identify the specific data, target use and timeliness for a customer management activity

- assess the data available from internal and external sources, their structure, content and quality
- identify the gap between the required, available and source data
- determine how to close this gap in stages
- build data to an overall plan that enables reuse, accelerating later stage developments and supporting consistency in customer management practices.

The CMAT assessment helps companies to determine business priorities, as well as the roadmap for change and the likely return on investment. Specific data requirements can be identified for each stage of the roadmap. Assessment of existing and potential data sources provides a basis from which to determine the gap between data requirements and available data, enabling the development of a staged data integration roadmap. Often only small data items are required to be in the right place at the right time (eg an indicator of customer value, or retention risk, at customer touchpoint). This requirement allows companies to ensure that the appropriate proposition can be offered to the customer.

There really is no substitute for a proper data audit, covering which data are available, from which internal and external sources, how they are defined and structured, what their quality and content are, what transformations are needed and what derivations and analysis are required. Many companies start their CRM projects by denying that data are an issue. This can lead to an underestimation of the work required to get data into order, leading to delays, budget overruns, rework, reduced project scope and even cancelled projects. At one company they concluded that of all the customer data they had (many databases and millions of records) the

only complete and accurate customer data were the records self-maintained by customers through the web, although even here the data were suspect as customers have reasons not to share complete and accurate data or to maintain them. However, at another company, the proper audit was done at the beginning, ensuring that they understood what issues had to be tackled and how new data needed to be collected, using better validation screens and contact centre staff training. Companies must avoid trying to tackle too much too soon. It is important to prioritise and focus on getting a closed

loop through to customer management activity and measurement, to get some return on the investment. Business ownership is the key to data quality and use. A closed loop approach is the key to collecting, analysing, verifying and using data.

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