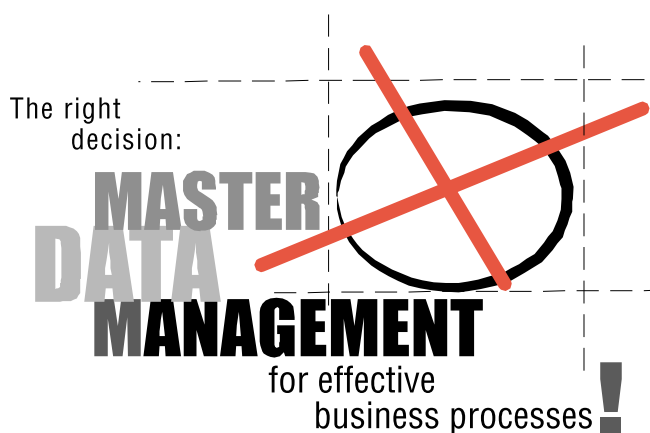


Master data

Master data management – a critical success factor



This paper suggests two approaches for using "Collaborative Master Data Management" for customer/prospect/supplier data. One approach is to create a system that is based on components from Enterprise Application Integration (EAI) and address management. Another possibility is to use a standard system with open interfaces.

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ADDRESS DATA QUALITY

Integrated management of address- and customer data across multiple systems – a precondition for efficient business processes

Today a company's database is usually stored in heterogeneous IT systems and applications. For that reason, data maintenance and updating still take place almost exclusively in the database currently being used. The result: other parallel databases remain unchanged and diverge – data consistency is no longer ensured. The consequences are redundancies and inconsistencies that affect the efficiency of business processes in many ways.

Company departments responsible for data management are focusing more and more on standardizing and consolidating enterprise-wide data. The term used to describe this concept and the realization of such systems is "*Collaborative Master Data Management*" or CMDM for short. These systems collect and integrate master data from heterogeneous applications and IT systems. The data consolidated with CMDM provides an essential precondition for integrated business processes.

Main tasks

As a first step, one of the most important tasks of such systems is to see that the master data is cleansed and that duplicates are identified, purged and then avoided as far as possible – even when working in heterogeneous applications and IT systems with different reference numbers for the same object. Here all available information is merged and consolidated in one master data record. In the ongoing data maintenance process – independent of whether the implementation is centralized or decentralized – all objects that belong together are now changed consistently, thus giving the master data continual protection against creeping contamination.

On the basis of this solid, loadable substructure, data can now be filtered, automatically distributed among the different applications and IT systems and made available to the respective target systems.



Different systems for different kinds of master data

Basically, one must differentiate between systems for item and product data on the one hand and systems for customer, prospect or supplier data on the other. While the main tasks described above are the same for both master data groups, the way these tasks are implemented differs considerably.

Here are several essential differences:

- With item or product data, it is often possible to integrate the master data by accepting several keycode systems for each new entry. (Examples: the manufacturer's keycode, the customer's keycode, standard keycodes such as EAN or UCC.)
- The option to enter several reference numbers manually for customer/prospect/supplier data is not feasible in most cases. For larger amounts of data, the systems are doomed to fail if the consolidation is not implemented automatically by the system via the names and addresses.
- Measures taken to safeguard data quality generally vary since the data objects themselves are quite different. This is true both for ensuring correct field content as well as for identifying duplicates.
- For systems in which private and company data are consolidated, the data protection laws of the respective countries must be observed with regard to data transfer. This is especially imperative for B2C solutions.
- The following commentary will focus on the distinctive features entailed in these systems for customer/prospect/supplier data.



Advantages and benefits of an *'insight'* solution

Collaborative Address Master Data Management or CMDM stands for the transformation of a company into an *'insight'*-managed organization. With CMDM it is possible for all company units and departments to make analyses and decisions based on integrated, inter-coordinated address master data that is redundancy-free and up-to-date. This ultimately strengthens a company's ability to react quickly to changed market relationships, to increase customer profitability, to develop an efficient communication policy – in short, to improve overall performance. Moreover, costs for system maintenance are considerably reduced.

Cross-system address/customer management in the sense of CMDM has a positive influence in several ways:

- In an integrative, transparent view of the customer as the basis for clear decisions in communication policy, in cross-selling or to counteract the potential loss of customers.
- In a drastic reduction of external costs for a credit assessment, since in many cases – especially in the B2C area – information about a customer already exists and has been recorded in other company groups or departments. This saves costs, shortens the processing time of the orders and reduces the risk of default.
- In better transparency in address changes (eg: relocations) or name changes (eg: marriage, change of company name) in all areas of the company that are involved. Through the common maintenance process, the updated information is automatically immediately available for all of the other applications involved.
- In clearer supplier profiles that depict the total purchasing volume, thus making better conditions negotiable.
- Even within applications in which the direct incorporation of data quality measures is not economically possible, through centrally available quality assurance measures.



Components and functions

Local application

Even after a CMDM system is introduced, entering, modifying and deleting the address objects still usually takes place for the user via the respective local application. Of course, it is also possible to completely do without the local address database used up to that time. In the access level for the existing applications, the current local database can be replaced by accessing the central master address server. Usually, however, the better solution is to keep the local address database as well. Two advantages to this are that the application does not have to be changed and that the operation of the local systems usually is independent of the availability of the central master address server.

Each new entry, modification or deletion of address data as well as changes of certain features that are relevant for data exchange (example: assessment of credit standing), are transferred via a connector to the central master address server. The connector takes over both the conversion of the local data formats into the stipulated data exchange format as well as the actual transfer of the data. It can either take place synchronously within the framework of the respective application transaction or it can take place asynchronously. An asynchronous transfer is the best option in most cases.

The central master address server in turn sends newly entered addresses or updates according to established rules to the respective applications. These receive the data in a "standardized" format, enhanced with the local reference number. The connector configures the data in the format stipulated for the local application and supports the independent integration of the data into the new database.



Master address server

The master address server ensures the data quality of every address entered. In addition to the usual formal checks, this particularly includes postal verification to ensure that only correct postal addresses are exchanged in the system. Incorrect address information is reported back to the local level and is not distributed further. The task of ensuring postal integrity can be assigned to the Uniserv expert system *post*. With this system it is currently possible to check and correct more than 500 million consumer addresses down to the street and house number level.

The master address server has the task of harmonizing all addresses from all applications. In doing so, the data from the individual sources must be consolidated without manual effort. This means checking for duplicates and "linking" not only the identical data records, but similar data records as well – even when different reference numbers have been used in the applications involved. Moreover, it is frequently necessary not only to identify duplicates, but to automatically create clusters (example I: B2C applications) on the household or building level. This requires intelligent, fault-tolerant matching techniques such as are provided in the Uniserv solution *mailRetrieval*. Here the master address server must register which applications "use" the corresponding customers, prospects or suppliers and with which reference number.

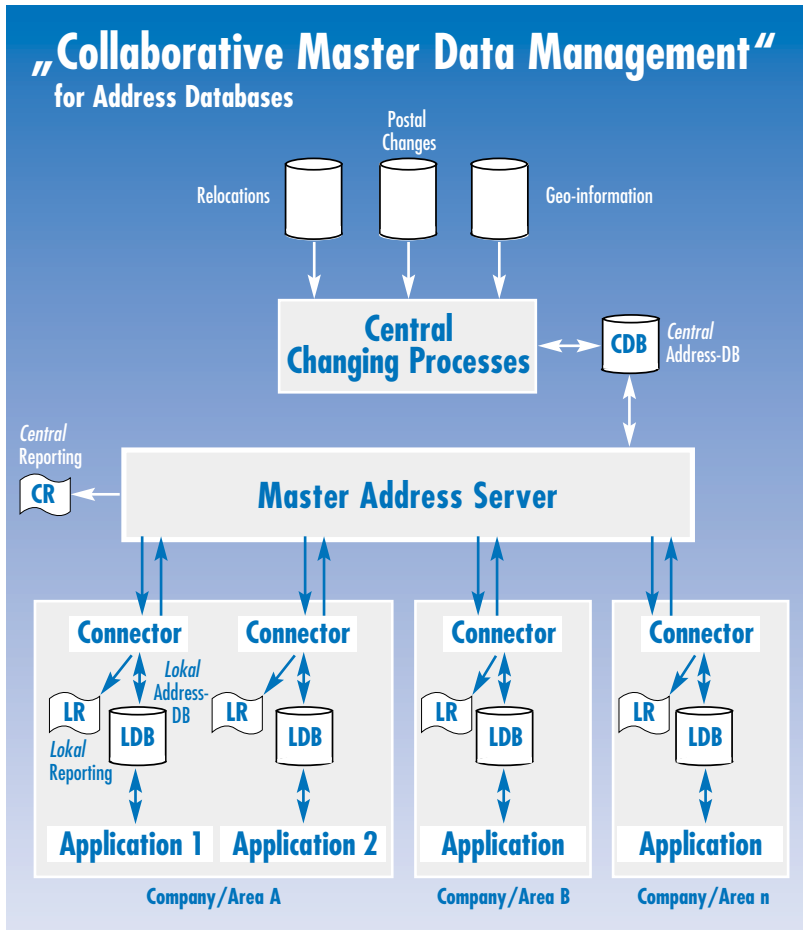
If the central master address server detects changes in the data, it automatically accomodates all applications that have this address object according to previously agreed upon data exchange rules. Every application receives the corresponding data with the respective local reference number.

If the local application is assigned access to the central master address server, it in turn must ensure that access is possible only to addresses for which the respective application is registered as "owner". Moreover, it must ensure that access to different data segments is only possible within the context of the data exchange rules.

It is recommended to implement certain active quality assurance measures via the central modification processes in the master address server. Among these are eg changes in city and street names or house numbers as a consequence of renamings in a city or town, or incorporations and changes in the postal code due to postal reorganization. By utilizing expert systems such as the Uniserv solution *post*, such changes can be carried out in the database automatically without the user having to enter them manually. Also, the most rational method for updating geo-information that is used in several local applications is to assign it to the central master address server. The same is true for the processing of relocation data that is made available in the various countries by different providers (in Germany e.g. by Deutsche Post Adress). The assignment of the relocation data is possible using the Uniserv products *mailBatch* or *relocation*.



Processing these measures within the framework of a CMDM system has the advantage that these operations only need to be executed once. All linked applications, via the defined data distribution process, automatically benefit from the enhanced data quality.



Typical knock-out (KO) criteria

The success of a CMDM system is determined by a number of important features and characteristics. Among the most important considerations are the following touchstones:

- Restrictions resulting from data protection laws should be taken into account already in the conception phase. Important to consider is which data may be stored and/or transferred and when and how. Furthermore, it should be taken into account that legal modifications can be coped with even on short notice by customizing.
- If the applications involved use different customer number systems, considerations to standardize these in the various applications should be negated, especially in the B2C area. Such an action would fail in most cases, and most often company departments involved do not want this. Instead, the data should be merged completely automatically using intelligent matching systems.
- In many cases it is meaningful not to mirror all addresses in all applications involved, but only to integrate the addresses entered into the respective system into the data exchange process of modifications/enhancements.
- The data quality must be checked automatically and ensured continuously.
- It is imperative to keep a version history of the data objects in the master address server. When and why a change was carried out and by whom must always be traceable - even when this is not supported by the applications involved.
- In case of doubt, an asynchronous connection linking the local application with the master address server is preferable to a synchronous connection.
- Systems in the B2C area fulfill different requirements from the B2B systems. This must be taken into account already in the system design.



Summary

In the future, Collaborative Master Data Management systems with integrated, intelligent address management components will become a decisive competitive factor, especially for company groups. Multiple system CRM projects that do not take this into account will either fail or earn a mere fraction of the potential ROI. Despite decentralized management of customer/prospect/supplier data, despite different IT platforms and extremely diverse operative application systems, a clear basis for making decisions about economically efficient business processes can be achieved. However, this can only be realized through an enterprise-wide, unified and transparent view of the customer.

Roland Pfeiffer, Managing Director of Uniserv GmbH:

"Collaborative Address Master Data Management enables company groups to merge decentralized address databases into one large, centralized customer/prospect database. That's an important prerequisite for the "single view of the customer". As far as possible, manual changes should be kept to an absolute minimum when consolidating relevant data from diverse sources. Identical data records as well as merely similar data records must be traceable, even if different customer code numbers have been issued in the applications involved. Consolidation is not just a one-time process but instead works continuously in the background within the larger maintenance framework. What's called for here – particularly in decentralized maintenance – are intelligent methods that automatically ensure data quality and prevent errors from creeping in and contaminating the address databases."

