



Decide with Confidence



D&B Whitepaper II

Master Data Management as Prerequisite for Sourcing Success

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1. An Opportunity?

A question: How much discount would you expect to be able to negotiate if you discovered that your spend with a vendor is four times greater than you thought? Ten percent? Twenty percent?? The answer, of course, depends on many dimensions, but certainly your expectation would be some sort of reduction.

Let us take this question a stage further. Imagine, for a moment, that whilst organizing the home finances with your future spouse you discover that the various insurance policies for the house contents, the small business, the holiday home, the two cars and the motorcycle have all been issued by different companies and offices, but in fact they all belong to the same group. What happens next? As a minimum you would of course expect a reduction in the policy premiums, but the question again is how much? One might even consider to try and terminate the policies earlier and negotiate an overall package with a different insurer. But the price aspect is the easy bit. Further questions: Which spouse is going to manage the relationship to the old insurer, who happens to be a long-time friend? Who is going to manage the new sourcing activity, negotiation and manage the relationship to the future insurer?

In this scenario the link between the contracts was discovered through the corporate logo which appears on all the policies. In business the issue is often made more difficult due to the poor quality of master data hiding in the accounts payable file. For example, we all recognize the brand names of Roche or Mars but what are their legal names in different countries? In business it is not so easy to discover vital links between customer or vendors, other tools are necessary in order to identify important connections between the various parties when trading on a strategic level.

2. Types of Master Data and Classification

Master Data Management can be defined as the structured and systematic approach to the grouping, classification, definition, maintenance and archiving of static data used within a (computer) system. Before we go any further we should perhaps remind ourselves of the different types of master data:

Business Partners

Customers, Suppliers, Manufacturers, Distributors, Service Providers; Logistics Providers, etc.

Employees

Roles, Levels, Individuals, Contracts, Access Rights, Authority Levels

Products

Purchased, Manufactured, Semi-finished, Subcontracted, Toll-manufactured, Indirect Products and Services (MRO)

Manufacturing Process

Bills of Materials, Routings, Dispensing System Process-Information

Commercial

Contracts, Orders, Price Books and Lists, Discount-Tables, Promotions & Deals

Assets

Items which are recorded on the books with a certain value to be depreciated

Units

An element which needs to be sold, maintained and serviced (e.g. elevator)

In terms of classification, the following are particularly strong and growing in coverage:

D-U-N-S® Numbers

Dun & Bradstreet Unique Numbering System. For identification and categorization of vendors and business partners

SIC

Standard Industry Classification, a four-digit code which groups vendors according to the product or service provided. The SIC code is useful for identification of potential vendors.

UNSPSC

United Nations Standard Products and Services Code, an eight-character code which enables users to consistently classify the products and services they buy and sell. UNSPSC is considered as an open standard and is the result of a merger of the United Nations' Common Coding System (UNCCS) and Dun & Bradstreet's Standard Product and Services Codes (SPSC).

E-Class

E-Class is similar to UNSPSC but with further differentiation, it depends not only on 8 characters, but also has certain characteristics (screw length, shaft diameter) pre-defined.

Having identified the types of master data to be analyzed and the possible classification approaches, it begs the question "So what is the case for change?"

3. The Case for Change

Due to the focus on core-competencies and outsourcing, business is becoming less and less site-specific and ever more virtual. But virtuality depends on data, and successful business performance depends on the structure and quality of that data. In recent years many companies have invested huge sums of money in an attempt to transform their business, only to discover that they have not achieved the anticipated and necessary payback. In most cases, new processes have been implemented, but unfortunately without due attention being paid to the data integrity needed to support these processes and virtual performance.

As a result, new approaches and solutions are emerging to strengthen the management of master data. On the one hand are the technical solutions such as the „golden box contract server" approach, and on the other hand the

data standard solutions such as Dun & Bradstreet numbering and UNSPSC codes. A combination of these two solutions delivers significant benefits for an organization, the realization of which, however, is a task not to be underestimated.

4. The Drivers for Master Data Management

The drivers for a stronger master data management approach are several:

Globalization

Quite simply, today's markets are far different from those of yesterday. Barriers to entry were relatively low and competition was the norm rather than the exception. Oligopoly, merger and acquisition mean that companies are starting to trade on a much broader geographical scale and as a result more strategic business approaches are reflected in a move away from local to global responsibility and towards community management. To be more specific, this means that a buyer is no longer bound to a given site such as was traditionally the case. But in order for this to work, the definition of data has had to change from being "loosely defined" to "very highly structured".

Housekeeping & Efficiency

Essentially, master data and conventions are used to store certain key elements of information so users know where to look to find something. In the past, purchase record cards were filed in certain defined sequences, for example the increasing size of screws: M12 * 20, M12 * 25, etc. or increments in the drawing number: 33-12-1036, 33-12-1042, etc. Typically, when a record card was extracted, a "marker" card would be inserted in the record cabinet to indicate that the record card was in use – a simple, yet effective approach. There is still a tendency for number ranges to be "speaking", meaning to indicate some attributes or a certain place within a range, but these days this approach is largely unnecessary and has been overtaken by "non-speaking" (random) numbers due to the availability of powerful analysis functionality.

Furthermore, the shift from unstructured to structured data can be witnessed in your home with insurance policies. In the past one was "only" an insurance policy holder with a name and address, now one is „simply" a customer number that happens also to have a name and address. Plus of course, detailed analysis in the insurer's database as to your risk rating respective to your demographic group and the number and size of claims you have made.

Legal, health and safety, quality requirements

A further driver for enhanced focus on master data management is the ever-increasing regulatory burden. We are all familiar with lot-tracing within the pharma industry and how this requirement demands high-quality data. Not so long ago it was unheard of for a farmer to keep detailed records of animals, crops, feeds, and treatment. This is becoming the norm today, but in order to function, it requires very strong data management capabilities.

Product development

We live in a world which might still be orbiting at the same speed as it did one hundred years, but in comparison the difference in the speed of technological change is quite breathtaking – one only has to consider how quickly and often cars get "face-lifted" these days. Strong data management and version control is essential if the auto manufacturer is to ensure perfect changeovers and avoid having to dispose of old models cheaply.

Costing and controlling reasons

The current wave of stagnant sales and margin erosion demands swift, superior performance measurement. As global competition intensifies, it becomes even more important to know the total cost of acquisition of a product. And this at different levels – for a site, region, country, division, business unit and ultimately globally. This can only be done if the data basis is not only highly structured and of high quality, but also regularly and correctly maintained.

Repeatability for the end customer

A customer will ask "Does my second batch of products look the same as the first batch?" Technology has raised our expectations in many walks of life, today we are not prepared to accept the blemishes which we previously accepted with a certain product. Again, these high standards can only be supported by very strong master data management.

Technology

We tend to forget certain key facts rather easily. One must be reminded that computers used to be extremely expensive air-conditioned monsters, these days your average PC has probably more performance than NASA had when the first rocket went up.

Remember also that accounts clerks used to collect invoices from vendors together, payment of invoices was usually done based on the alphabet, not a vendor number. This meant if an invoice from "F. Hoffmann-La Roche AG" was filed under "Roche" instead of "Hoffmann", at some point the error would be discovered because the clerks would also (optically and without even thinking) scan the document to see if it matched the others in the ring binders or filing pockets. The development of software drove the need for data definitions, but capacity limits often restricted classification, for example where only two characters were available to define a product group (e.g. 5A) whereas on the old record card it had been written longhand (5A – Folding Cartons).

Ten years ago most business aspects were still paper-based – we did not have the ability to analyze data in the depth and breadth that we do today. Cheaper computing power and more sophisticated software meant that more data had to be defined and structured. Unfortunately, nobody envisaged what you would or could do with it afterwards, because it had been impossible to do anything with it under a paper-driven system anyway. Therefore master data management was simply often ignored or not taken seriously.

Virtualization

In recent years the pace of change in the areas of computer hardware, software and, more specifically, networking has been staggering. On the one hand this means these days it is easier for businesses to be connected – we have become "fully wired". On the other hand, these connections in turn demand and can only function with data standards – despite recent improvements, computers are still very poor at interpreting "fuzzy" data (an area where humans still excel, thankfully). Therefore certain technology standards have emerged which enhance "connectability" and support the virtualization of the enterprise.

It is a fact that virtual organizations can only properly function with clean, structured data. As organizations increasingly deploy "servers in the sky" to manage their global data and procurement contracts, the need for data integrity, both in terms of static and transaction data, becomes paramount. This then dictates strict controls over who can create or change which data and when.

5. The Evolution of Master Data Management

Throughout the years, data management has been perceived as an unrewarding task and not as a source of competitive advantage. From its early beginnings, however, master data management has now evolved into a task of critical importance. The various stages of evolution can be described as follows:

- You don't see a need to record it at all
- You record it to make or sell a product or service
- You record it to satisfy head office
- You aggregate it for basic analysis
- You structure, classify, filter and clean it to gain corporate transparency
- You define very strict rules for all future master data input
- You don't let just "anybody, anywhere" mess with it...
- You make people *BEG* on their hands and knees to the "not-just-anybody" to create new item, vendor and customer masters...(a state known as master data management heaven, because you have now realized the true value of highly-structured data)

6. A Typical Business Situation Today

If we examine a large business today, what do we find? We discover a system landscape which has somehow evolved over time, much as a tree will grow around rocks which are in its way. It is typically a mixture of legacy systems and modern applications, usually with very few consistently deployed data conventions. Mergers and acquisitions have led to data inconsistencies and often total confusion and exasperation. And we discover multiple points of contacts between buyers and sellers. On the one hand, these often confuse the vendor and lead to sub-optimal performance ("My order is the most urgent!" "No, mine!"). On the other, the relationship fragmentation undermines the customer's spend potential — more often than not the vendor either deliberately or innocently exploits a lack of cohesion on the part of the customer. A simple analysis is shown in Figure 1, where small but important differences reveal the total spend with the vendor to be three times what the individual buyers perceived it to be.

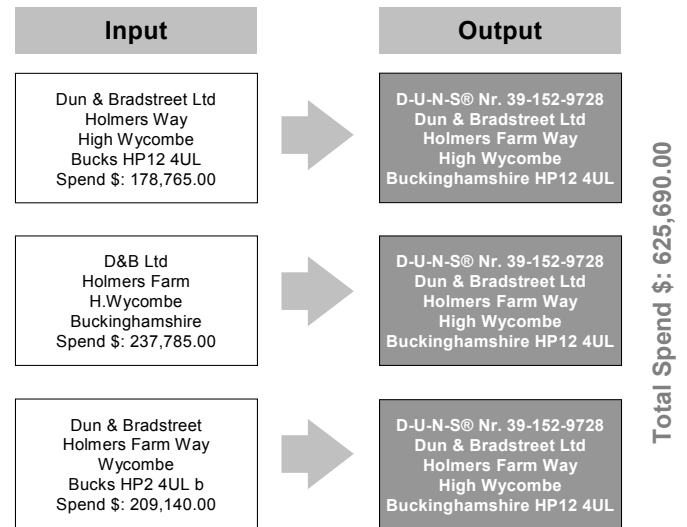


Figure 1
Example of Spend Analysis — Identifying the Vendor

If we then ask buyers for their estimates of the overall spend with a particular vendor, and then compare it to the actual overall spend volume, we might find something of a surprise or even a shock. In one such example, BearingPoint interviewed five vendors of a well-known large organization, and each estimated their spend with one vendor to be between 1 and 2 million Euro. Analysis showed that the total spend with the vendor, based on six entries within the payables ledger, was a total of 10 million Euro, and not one buyer estimated anywhere near such a number. For a buyer, such a discovery generates, as a minimum, the following questions: What does this mean to me? What does this mean for the procurement team? What happens next??

7. What happens next?

Analysis has revealed that the company is not exploiting its spend power and it is quite likely that the vendor is confused and perhaps irritated by the number of contact persons. So, what happens next?

The following is a typical approach:

Clean and filter all related spend records

- Decide on data conventions to be adopted, e.g. D-U-N-S® Numbering
- Structure, convert, harmonize and consolidate spend data
- Establish whether this new knowledge affects the vendor portfolio and sourcing strategy
- Decide whether prices and contracts should be renegotiated
- Rethink/review the company organization, roles and responsibilities
- Decide who will become the supplier key account manager
- Define the future sourcing and ordering process (in the past several buyers had contact with the vendor, how will requirements be ordered in the future?)
- Ensure that the "freed-up" resources are re-deployed to support future (often marginal) procurement initiatives. Consider appointing regional "master data champions".
- Decide which new master data management processes and tools will be necessary to support the business in the future

8. How D-U-N-S® Numbers support Sourcing

8.1 Choice of Standards or Conventions

Of all the data convention and structure systems which can be considered when analyzing spend data, the D-U-N-S® Numbering system is an approach which gives the biggest benefit and can be deployed universally. It has the advantage of being supported on a truly global basis, but more importantly it delivers benefits swifter than item numbering systems because *all* companies have vendors in their accounts payable ledgers, whereas only some companies use item references for their total expenditure.

In a typical manufacturing company we will find all production materials supported by individual item numbers, but often non-production materials are purchased via generic commodity or "umbrella" item codes. This usually means significant effort is required to establish exactly what was purchased. In contrast, supplementing the company-internal vendor numbering systems with

D-U-N-S® Numbers allows rapid identification of duplicates. More specifically it also highlights which suppliers are somehow connected, the discovery of which can present an opportunity for renegotiation based on bundling of the spend, combined with a reassessment of the risk analysis.

8.2 Identifying Vendor D-U-N-S® Numbers

How can one identify the D-U-N-S® Numbers for vendors? Essentially there are two methods, one is batch processing performed by Dun & Bradstreet, the other is "self-service" via UPIK-online. Dun & Bradstreet also offers a portfolio check which, for example, covers the number of duplicate vendors, interrelated business partners, number of companies "out-of-business" and companies with poor financial rating.

A typical D&B approach would be, for each individual ERP system, to clean duplicates based on the use of D-U-N-S® Numbers, correct all addresses with their ID-Data-Package and delete those vendors no longer trading. Then the next step is to initially synchronize all systems and in the process combine duplicate records identified via the D-U-N-S® Number. Updates to vendor coordinates can be performed via the D&B address server. Further classification is available through UPIK (see the UPIK-Project <http://upik.dnb.com>). A further service is the identification of vendor/group family trees, essential for concerted, cohesive key account management, an example of which appears in Figure 2, where no-one had previously identified that those vendors 1, 2 and 3 actually belonged to the same conglomerate and therefore perhaps an opportunity for buyers to wield some purchasing power had been missed.

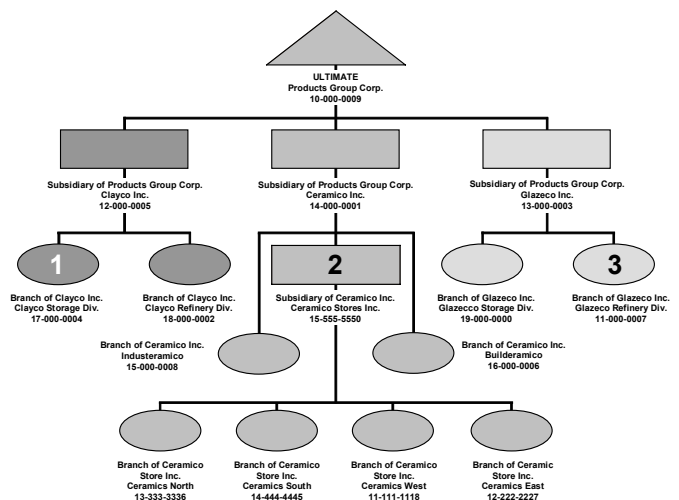


Figure 2
Example of Dun & Bradstreet Vendor Family Tree

8.3 How D-U-N-S® Numbers support Sourcing Activities

So, how does the use of D-U-N-S® Numbers support strategic sourcing? This first impact is on the spend analysis, because removal of duplicate vendors will deliver different results compared to those originally obtained and suggest new priorities and approaches. Secondly, enriching vendor master files with the relevant SIC codes supports searching for potential vendors for certain products or services. Thirdly, when selecting a "long-list" of vendors to be considered for an RFP, one could select only those vendors denoted by a D-U-N-S® Number, or go even one stage further and select only those vendors with a given financial rating. A further consideration may be a check for spend/turnover dependency between the companies. For e-procurement, loading only creditworthy vendors with D-U-N-S® Numbers into the system is one method to ensure control. Finally, maverick buying can be controlled by insisting that all new vendors must be defined with their D-U-N-S® Number and be of a certain credit rating. In short, the D-U-N-S® Numbering system supports all of these activities.

9. The Payback on Master Data Management

9.1 Investment of Resources

The effort involved in high-quality, intensive master data management is not to be underestimated. The investment in resources, however, can yield a very worthwhile and sizeable payback once certain key pieces of information come to light. So what type of effort and resources are necessary on the journey to master data management heaven?? And what type and size of payback can be expected?

The first investment necessary is that for the analysis and cleaning of spend records — Figure 3. On the vendor side this means submitting a file to Dun & Bradstreet for each vendor to be supplemented with the D-U-N-S® Number and for the identification of duplicate records. This task costs up to €2 per record.

A company with a vendor file of 10,000 records is looking therefore at a one-off bill of about €20,000, some might say a significant sum, but an amount that is relatively easy to recover once some spend transparency has been achieved.

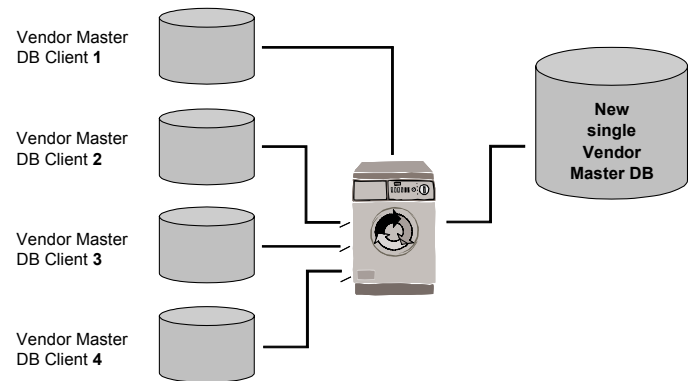


Figure 3

Analysis and Cleaning of Spend Records

The second type of investment is that of data conversion and harmonization. It is impossible here to estimate figures for this task because it depends on so many variables, such as the number of systems, the volume of data, the state and quality of that data, and the desired target data set-up. It is without doubt a task not to be underestimated, but on the positive side, it is a one-off activity.

These data analysis and harmonization activities will generate at least two other types of investment, the first of which is realigning the business. Having created and refined new master data structures and data content, the various business units will need to be persuaded on two counts. Perhaps the easy part will be to use this new data in purchase and sales orders and related transactions. But more importantly will be the buy-in to a new, more rigid, process for the definition of master data, particularly where certain business units were able to do their own maintenance in the past. In order to support this process, companies are investing in web-based applications where a user can easily request the creation of a new master data record. This is then directed to a central master data management group, which checks whether the record already exists, perhaps under a slightly different description, and then considers whether to actually adopt the record for use in the global database.

Finally, data harmonization will most probably force a redefinition of the management of the vendor relationship. Given a situation where several buyers have been communicating with a vendor, the customer must decide which of its buyers should take on the responsibility for managing the relationship, communication with the vendor and conducting negotiations.

In addition, new processes must be defined which potentially reduce the level of responsibility and involvement of certain buyers, a situation which needs to be managed very carefully in order to limit the amount of demotivation.

9.2 Return on Investment

After investing in data cleansing and enrichment, the quick wins are derived from the savings from rationalization of the vendor base, the subsequent bundling opportunities, renegotiating contracts and forcing compliance with frame contracts. Each case is different, but quick win savings typically lie within a range of between 2% and 20%. Suffice to say that these savings alone will be more than enough to offset the cost of the Dun & Bradstreet numbering activity. These rapid benefits will be supplemented by longer term changes to the spend portfolio and the development of selected vendors, these are the slow wins which generate ongoing and sustainable price reductions.

Apart from the pure price savings which impact the bottom line, other benefits accrue through the improved use of procurement resources, on the basis that there will be fewer purchasing points of contact with fewer vendors. This means a reduction in "interference", the situation where several buyers give a supplier conflicting instructions, thereby adversely affecting the overall performance of both vendor and customer alike.

Moreover, through coordinating the procurement activity with the vendor and delivering a "consistent message with a common voice", it then becomes possible to focus on truly developing the vendor's capabilities and performance to a level way beyond those benefits typically obtained via straightforward, tough negotiation. In one such example, joint product development reduced the purchase price from \$2.5 to less than \$1 (yes, a saving of 60%!), and the vendor was able to realize significant manufacturing efficiencies. Neither of these "win-win" benefits could have been realized through pure negotiation alone.

10. Problems Encountered with Procurement Analysis

Let's be honest: master data management is simply not sexy. But the money that can be saved through concerted and focused data management? Now that's sexy! However, BearingPoint's experience with clients during strategic procurement projects has identified several common problems with the various procurement analysis approaches.

The first and most surprising issue is the proportion of spend which is still not defined or recorded by major companies — it is sadly still quite common for significant sums to appear under the "one-time" or "miscellaneous" vendor. Secondly is the combination of direct and indirect expenditure where this does not make sense — it is essential to provide filters (direct/indirect/sub-contract/service) for this type of analysis.

The third issue is the failure to ensure that all spend amounts relate to the same unit of measure. It is common, for example, to specify copper bar in meters, but it is usually priced by kilo to reflect the inherent manufacturing tolerances. For analysis, however, it is essential to define the analysis unit of measure, otherwise one summarizes apples with pears and obtains a misleading fruit cocktail...

Another problem is that the lack of data standards amplifies the "garbage in — garbage out" rule through aggregation and consolidation of the garbage. This means that the consolidated information is sadly almost worthless, which in turn means that, unfortunately, not all of the benefits from the spend analysis can be harvested.

Above else, often senior management does not pay enough attention to this topic, because of course, it's simply not sexy...

11. Outlook

Common belief is that the customer is king. In today's increasingly virtual environment, perhaps in this phrase we should replace the word *customer* with *data* — after all, how can you satisfy the customer if you do not really know what you are doing?? Following the Y2K panic, enterprises started to realize that new software alone does not guarantee business performance. An increasing number of Supplier Relationship Management Systems are appearing on the market, and these can only function with top quality, highly-structured data, or a significant number of "look-up" tables. Master Data Management is now recognized as *the* prerequisite to sourcing success. As it becomes more widely adopted, businesses will be forced to change their organizations and processes to incorporate the new approaches which support master data management. Slowly it is becoming evident: *the more virtual a company becomes, the more critical master data management becomes for success.*