FUNDAMENTALS:

MASTER DATA

ERP Systems, Master Data and new Challenges

DREHER CONSULTING®

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Foreword

by Dr. Harald Dreher

This publication from our „Fundamentals“ series is intended to provide the reader with a brief overview and guide to action on specific topics.

This information on the topic of Master Data is based upon our practical experience.

Higher, faster, further - Technological progress and digitalisation make our working everyday life easier on the one hand, but also increasingly fast-paced and complex on the other. New technologies and the trend towards customising lead to fragmentation and ever larger amounts of data. Poor master data often has negative consequences for a company and makes work more difficult for everyone involved. These texts are the result of this problem. It will help you to better understand the problems of master data and the associated challenges and apply this knowledge to your company.

In projects dealing with the introduction of ERP solutions, CRM or other business software, we repeatedly experience the underestimation of master data. This documentation is intended to help you and provide you with information on what you should pay attention to when introducing ERP solutions or generally dealing with the acquisition of new I.T.

We would like to thank all supporters who have made this book possible. The exchange with colleagues and company representatives is essential for continued success in our work.

If you have any suggestions, please let us know and write to us.

Böblingen, April 2019

It is true that an ERP system can only be as good as the master data quality it possesses. Even if this topic is already an ongoing issue, the rapidly advancing digitalisation threatens to catapult it from the frying pan into the fire. There is a danger of being caught between the millstones of the flood of data and the simultaneously increasing demands on data quality.

Master data: An ongoing issue that needs to be tackled

The numerous problems with master data have already been discussed several times. They involve duplicates as well as incomplete or outdated information. But the effects of bad master data are usually not immediately noticeable, the consequences are much more insidious. Over time, employees have more and more queries and the coordination processes become much longer. This creeping effect causes the trust of the staff in the company's own data to dwindle in the long term. If decisions have to be made under deadline pressure - not uncommon in everyday business - employees learn to help themselves. Under certain circumstances, incorrect master data is simply accepted or gaps are filled by more or less arbitrary estimates.

As if the general master data situation were not challenging enough, the advancing digitalisation presents companies with even more challenges. The amount of data continues to grow rapidly. At the same time, the quality requirements for the data are also increasing.

The trend cuts across all industries: From the food industry and furniture manufacturing to mechanical engineering and automotive - customers increasingly want more customised products and more often in smaller delivery quantities or sizes. Customer wishes are also becoming more and more differentiated in the service sector. Technological progress favours this trend by making more and more variations technically feasible and economically affordable.
Individual parts in small series can be ordered by uploading a CAD drawing on the corresponding supplier websites. For master data in ERP systems, this means one thing above all: their number is increasing massively due to new customers and products.

Technologies such as 3D printing are also driving this. This allows physical objects to be manufactured by applying layers. This makes it possible to economically produce individual parts and also small series - there is often talk of batch size 1. This also leads to a strong increase in the number of product variants, and with them the (master) data volumes continue to grow.

Digitalisation and increasing demands on master data quality

Another trend taking place at the same time, however, is that digitalisation is increasing the demands on data quality. For example, automation and machine learning will play a major role in coping with the flood of data. However, these technologies require high-quality (master) data that is as accurate and complete as possible. Product life cycles are also becoming shorter and shorter due to digitalisation and new technological possibilities; in addition, niche requirements are also increasing. For master data, this in turn means that their lifespan is becoming much shorter and they are becoming outdated much more quickly. They must therefore be updated more frequently. In dynamic industries there is already a trend that a large part of the master data is no longer up-to-date after 2 years at the latest. This means that it is becoming increasingly costly to keep data in a usable state. The enormous amounts of data generated by digitalisation require new ways of dealing with the associated problems. It is becoming increasingly important to use automated processes to filter out the necessary or desired information. Here again, data and master data play an important role. After all, the quality of automated solutions can only be as good as the data quality on which they are based.

„It is becoming more and more important to use automatic processes to achieve the necessary or desired Information.“

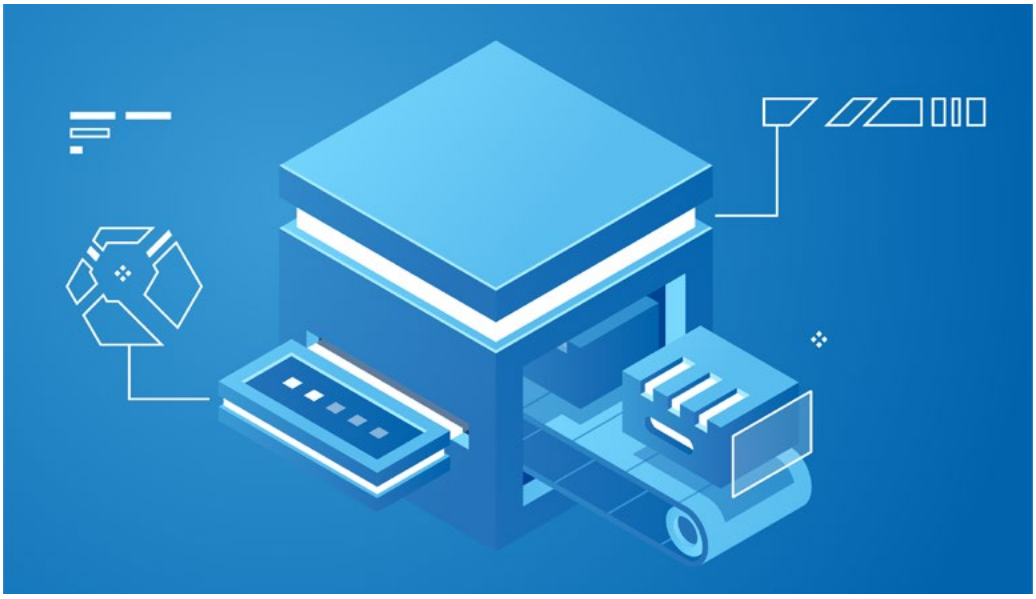
One example of this is machine learning - a technology that is already being used successfully today for matching invoices or recognising specific product images. However, in order for machine learning to work as desired, the algorithms usually have to be taught using historical data. Useful patterns can then be derived from this. Here it is important that the existing data - for products, customers or suppliers, for example - are of a correspondingly high quality in order to deliver reliable results. Another area is M2M communication. Here, machines acquire the ability to communicate with each other and thus avoid bottlenecks.

In addition to the diversity of variants, the Internet of Things (IoT) is causing a data explosion. More and more measurement parameters can be recorded more sensitively and at the same time more cheaply by sensors. In addition, the costs for data storage are falling consistent. These include, for example, aircraft engines, lift and train doors or food in transport and storage containers whose cold chain is monitored by sensors around the clock. In addition, the development of providing many devices, machines and other components with a digital twin - i.e. a digital copy of the physical object - is leading to a further massive increase in data volumes. Master data is also increasing and forming more and more links to other data.

The new technological possibilities and the increase in data mean that the need for further solutions - which in turn generate new data - increases. These include solutions in the areas of data protection and data security. At the same time, it is becoming more and more difficult to keep track of master data and other data, and the maintenance effort and susceptibility to errors continue to increase. In the product data area, for example, new products, variants and versions as well as new hierarchy levels for master data are being added. Or free capacities to help each other or to pass on information to the responsible personnel.

If certain material is missing, the missing parts can be ordered automatically. If a machine announces free capacities for a certain period of time and is equipped with the appropriate tool, the parts in question can be diverted to production. But in order for the processes to function smoothly, the corresponding data - including master data - must be as complete and correct as possible.

Due to internationalisation and economic integration, which is promoted by the internet, old value chains and networks are being reorganised. Partners and suppliers who play an important role for one‘s own core business are now increasingly located on the other side of the world. Other countries, geographic conditions, laws, languages, cultures - this leads to master data not only



increasing in number, but also showing more and more country-specific differences. This increases the complexity and the effort. For example, foreign-language designations increase the effort required to ensure correct spelling.
Another trend concerns new software solutions with the advent of cloud computing. Work, production and business processes have to meet ever higher demands due to increasing requirements. Therefore, it is often necessary to combine on-premise ERP systems with solutions from the public cloud or from several clouds. This, in turn, requires cooperation and a smooth

Data exchange of the different software. If master data and other data are incomplete, incorrect or duplicated, the problems become even greater. The more integrated the different ERP solutions and the specific add-ons are, the faster errors spread. Delays occur because data must first be cleansed and corrected, or decisions are made on the basis of incorrect data, which may not be noticed until later - but are then all the more costly.

Summary and Outlook

As the discussion has shown, the amount of master data is increasing due to digitalisation and other technological developments.

The Internet of Things and the diversity of variants are driving this. Furthermore, it is becoming increasingly important for companies to maintain high standards in data processing. These are important in order to cope with the rapidly increasing amount of master and other data due to digitalisation. This is especially true when it comes to automating work and production processes. This is the only way companies can maintain their competitiveness and meet market demands today and in the future.

About the Author

Dr. Harald Dreher is the owner of Dreher Consulting, an independent expert consultancy for digitalisation, I.T. selection and process optimisation. After holding various positions in industry, he founded Dreher Consulting in 1992. Since its foundation, it has been concerned with process optimisation and improving the competitiveness of companies. Harald Dreher is active in various initiatives on supply chain and process optimisation, was a lecturer on process optimisation and is active as a speaker and lecturer, as well as the author of various specialist articles. The focus of his expert consulting for entrepreneurs is the implementation of digitalisation strategies, the strategic alignment of I.T. and the improvement of competitiveness through the use of A.I. and A.R. applications.

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Master

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