



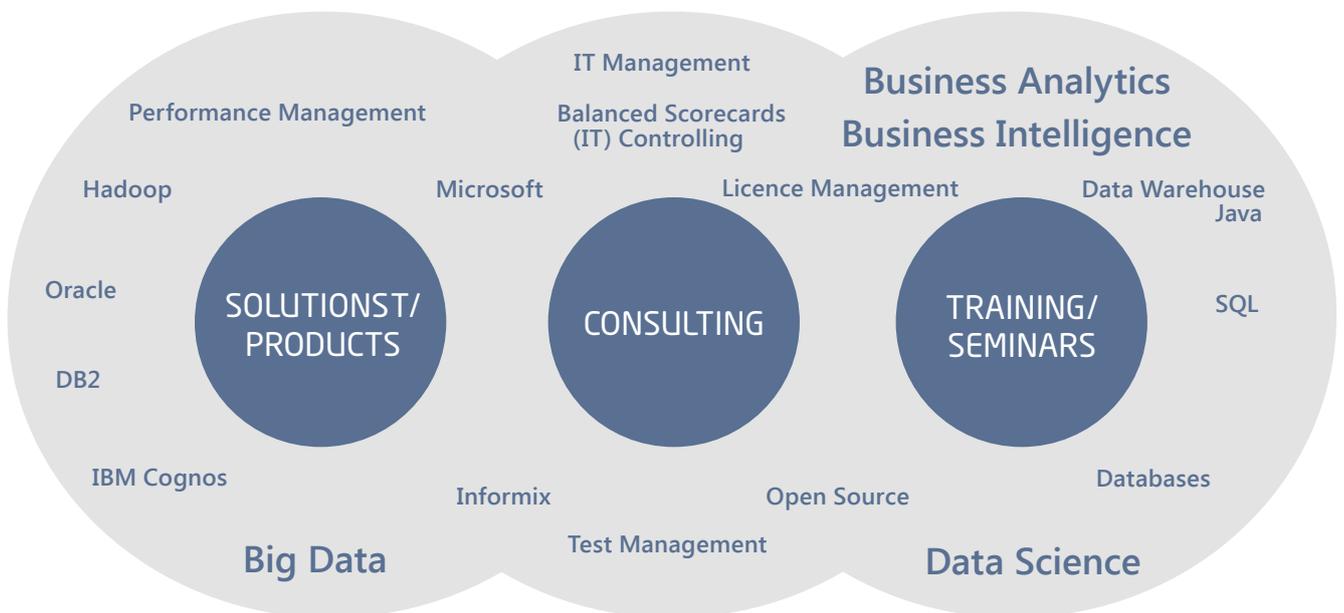
1 MILLION HIDDEN TREASURES
1,000 POSSIBILITIES
100% OVERVIEW

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The company

SINCE 1999, we have been providing large corporations and SMEs all across Germany with business intelligence, big data and data science solutions. Our clients can get an instant snapshot of their business, finding out not just where they are at any given moment, but why, and what predictions they can make for the future.

OUR SERVICES



Big data in purchasing - data-driven purchasing optimisation

Reducing and avoiding costs – how to save money in purchasing: with more algorithms and smarter data, this goal can now become a reality



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Data-driven purchasing optimisation

The relevant information is already there. It's just tucked away in Excel workbooks, SAP systems and a variety of data sources. It's just waiting to be tracked down and turned into meaningful information.

Together with our research partners at the Fraunhofer Institute IAIS, we have developed intelligent algorithms that enable targeted rule extraction for the optimisation of purchasing activity.

The aim is to provide an integrated, up-to-date view of a company's business units and to enable further cost reductions. Ease of use is essential. No special expertise should be required for the results to be used effectively.

Solution methodology

The following solution has been developed:

- Integration of data from over 120 SAP systems and saving and planning databases and from contractual information in the Hadoop big-data system

- Enhancement of information with purchasing strategies most likely applied and the extraction of the rules discovered (if-then)
- Analysis and visualisation of communities

The results are then used to realign management reporting to make it reflect the most important influential factors.

Irrelevant reports and analysis can be dispensed with. Where reports that would provide information on relevant influential factors are missing, they are produced via IBM Cognos BI.

Detailed information on the success rate of the various strategy combinations and organisational structures are used to inform actual organisational change. Moreover a financial forecast of the cost reduction potential can be produced before any measures are decided on and implemented. Organisation and methodological change, such as that advised by a management consultancy, can therefore be tested for effectiveness before being actually implemented.

Data science in sales – optimisation in service and after-sales business

Increasing replacement part and service sales – new business opportunities in service and after-sales: using previously atypical methods to uncover new approaches and business models in sales



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Data-driven sales optimisation

In the CRM and merchandise management systems of an agricultural machinery manufacturer, there lurked some hidden treasure.

Together with our research partner the Fraunhofer Institute IAIS, we applied an established but previously atypical procedure that confirmed farmers' experiences and brought diffuse or previously unknown information into focus.

The aim of our solution was to provide an integrated view of our client's replacement parts and service business (generated via head office, dealers and other channels, for both own-brand and other manufacturers' replacement parts) and to highlight any correlations.

For the company's management, ease of use, with no expert knowledge required, was a central requirement. Every member of the sales team was therefore enabled to use the insight gained to directly increase replacement part and service sales.

Solution methodology

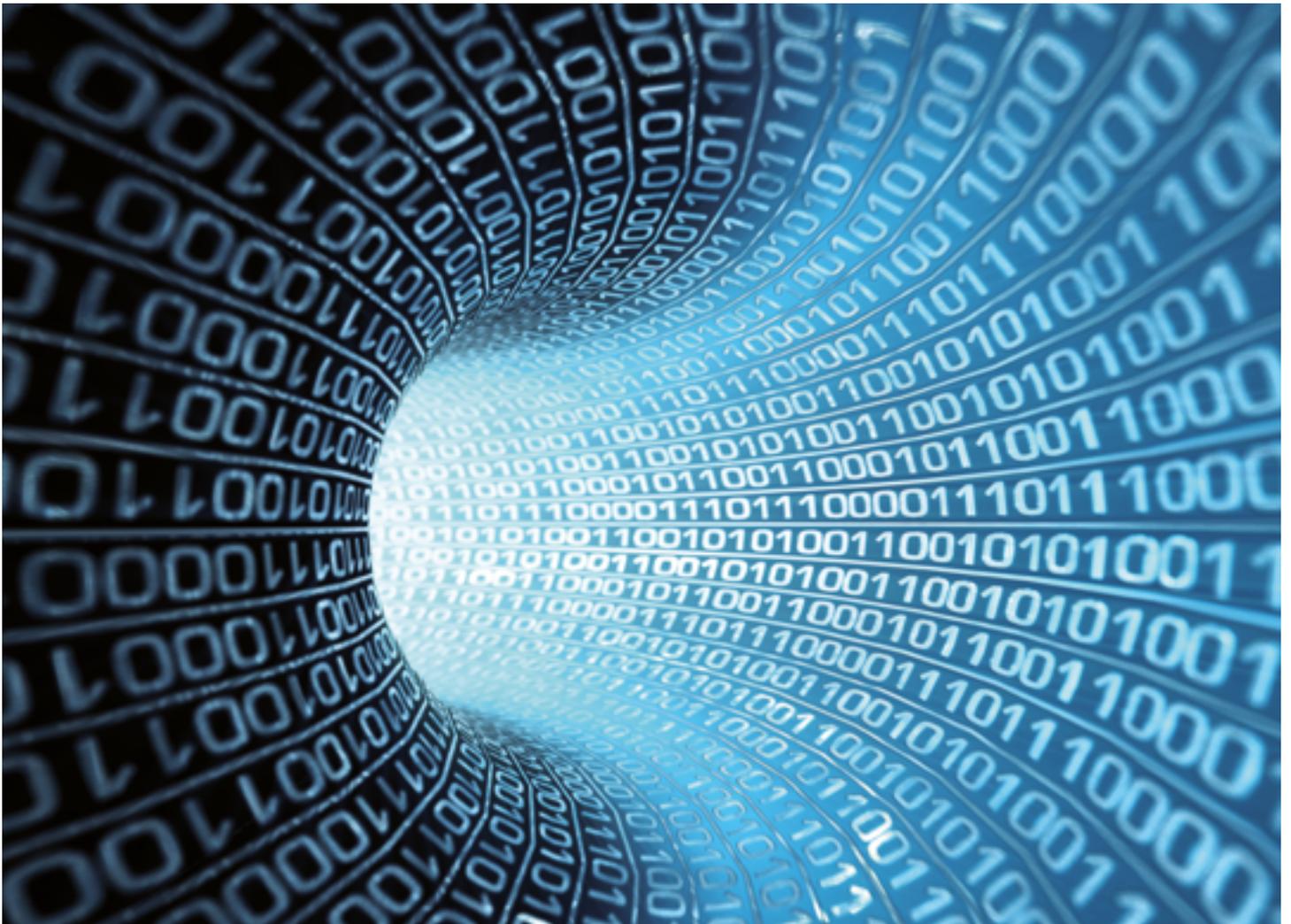
The following solution was developed:

- Consolidation of CRM and ERP data into one big-data platform (Hadoop)
- Analysis of the factors influencing customer behaviour (e.g. season, region, size and type of company, machinery stock)
- Recency, frequency, monetary value (RFM) analysis and customer potential analysis
- Analysis of effect of servicing on the demand for replacement parts and the extraction of servicing-related information for sales purposes.

The knowledge thus gained can be used to devise new incentive systems to encourage customer loyalty and develop new servicing products. Further down the line, customers can be targeted with specifically tailored recommendations relevant to their situation.

Increasing efficiency in data-driven tests

Increasing the efficiency of testing – minimising time and cost expenditure for providing test data, especially through the use of larger and more valuable databases



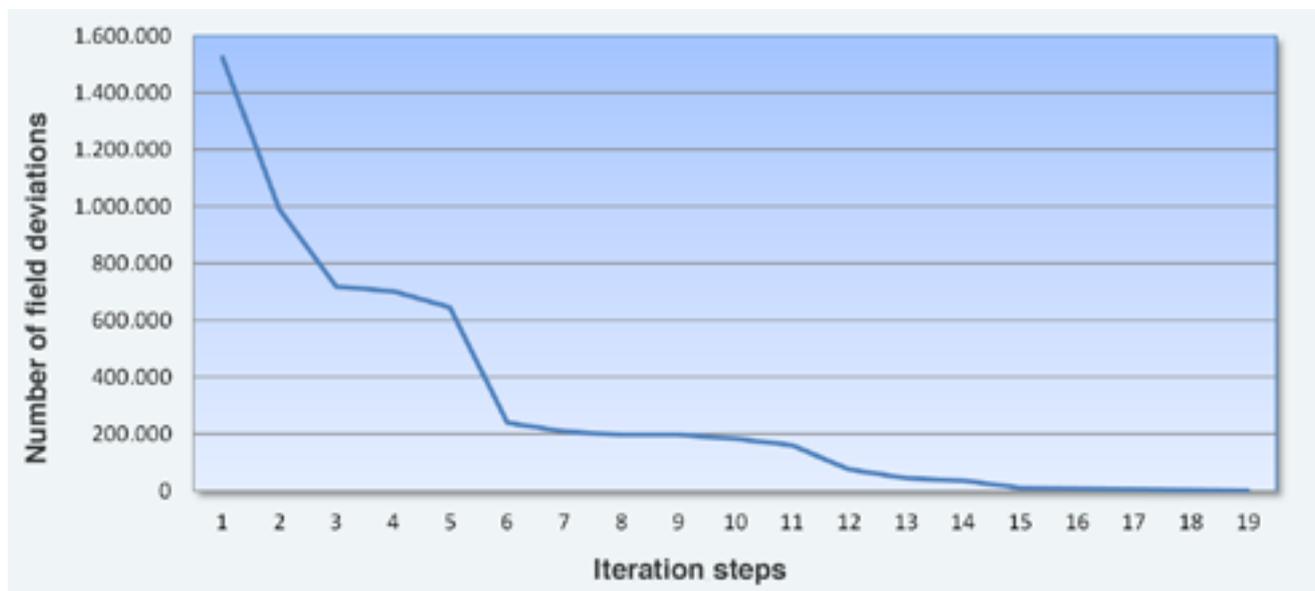
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Provision of test data and error analysis

In the development process, focusing on essential data content in consultation with specialist departments and with the use of data mining methods enables a massive reduction in the volume of data to be tested. The use of parallel handling processes speeds up the processing of the relevant information to an extent that enables a high number of iterations for day-to-day business. The design of representative, synthetic databases for testing purposes using equivalence class analysis makes it possible to test systems and processes without having to extract data from functioning systems.

officers takes place just once. A concept and a repository serve as the basis for reuse and updating. Analysis and structuring of the data takes place using keys, file and field names, deviations and number of deviations.

Learning acquired about desired deviations and corrections is applied during subsequent iterations. The number of test cases therefore decreases with each iteration step. The underlying procedure allows scalability as required and manual activity can be avoided.



The high-performance anonymisation of polystructured mass data via our licence-free, open-source, platform-neutral software allows valuable data to be used for test purposes.

In a case study involving a bank with the relevant systems, the procedure outlined above saw a 75% reduction in terms of time and cost.

Relevant samples ensure consistency is maintained over the entire database. The classification of sensitive data fields in consultation with data protection

Concept - multidisciplinary approaches in lightweight design

Pre-development and simulation – innovative development processes



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Background

In the development process for innovative products, product lifecycle management (PLM) plays a vital role. This can be broken down into various approaches such as product data management (PDM), computer aided design (CAD) and engineering applications (CAe). Holistic solutions use CAD for their underlying data model.

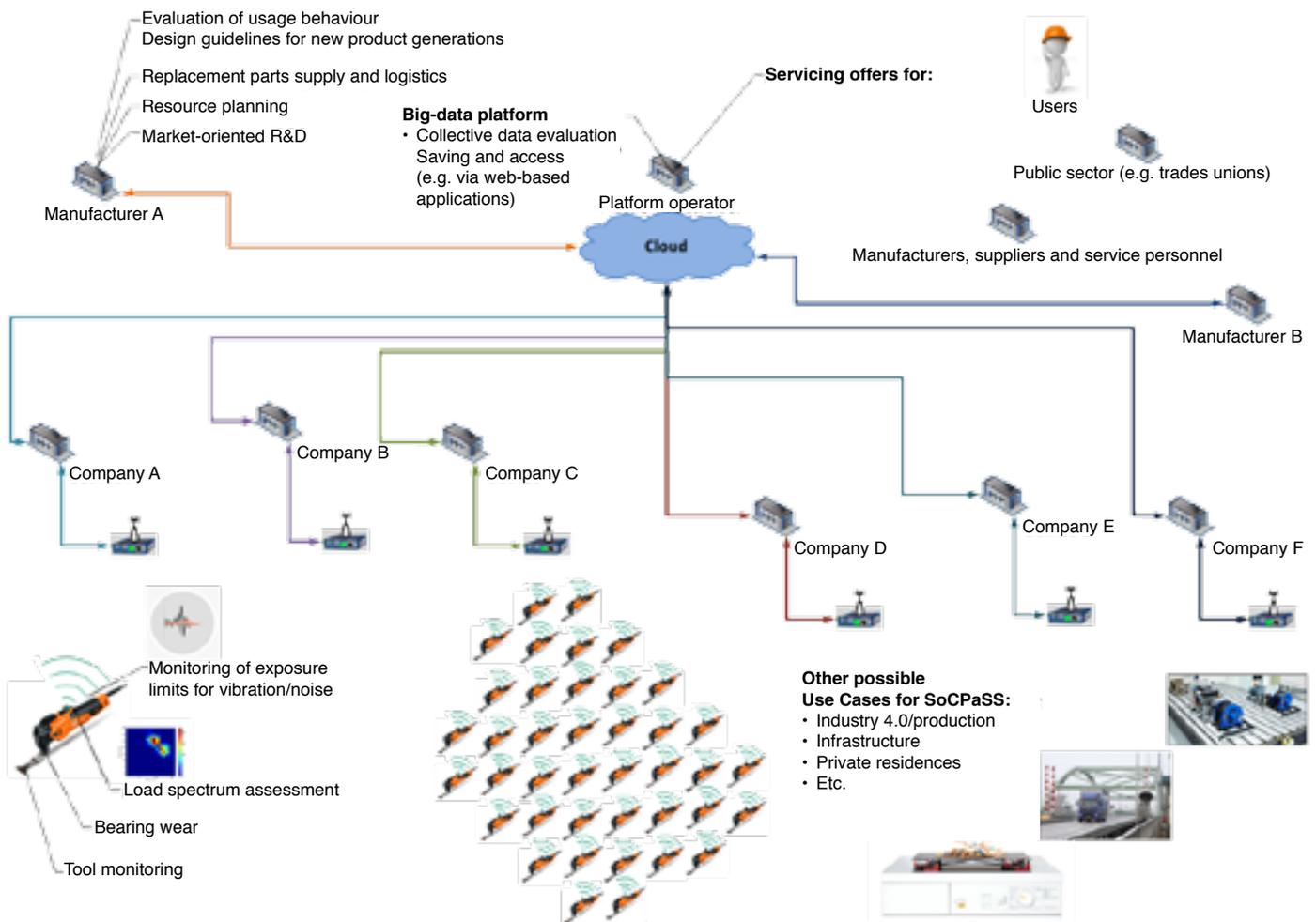
The resulting PDM solutions focus on CAD data sets, which means limited support for other information. Additionally, PLM applications are mostly closed systems, as well as being inflexible and frequently incompatible with one another. In 2008, the MODELISAR project led by Dassault Systèmes involved the creation of a functional mock-up interface (FMI) specification that defines standardised interfaces for coupling various simulation softwares.

This standard is increasingly being used by major manufacturers. The Virtual Vehicle Research centre has created an independent co-simulation environment (ICOS). The multidisciplinary approach is focusing on total simulation in the automotive sector. This leads to big-data problems, as it enables the centralised real-time processing of large unstructured or polystuctured masses of data that are frequently subject to change.

This concept was developed jointly by Open Logic Systems, the Fraunhofer Institute LBF and other partners.

Concept - smart vibration data platform

Optimising the reliability and emission of vibrations – improving vibro-acoustic and acoustic behaviour



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Background

With precise information on the current state of machinery combined with predicting ability, significant reductions can be achieved in maintenance and repair costs. Vibration created during operation contains valuable information about damage, wear, operational status and equipment misuse. New insights can also be obtained into the loads and pressures that actually arise during operation and are exerted on equipment, parts and people that are exposed to the operational vibrations of the system (exposure limits). This information can then be used in future product generations to help design active anti-vibration measures (both active and passive) as well as structural optimisation measures, and can further be used to assess and improve vibro-acoustic and acoustic behaviour.

The vibrations can generally be captured relatively easily using sensors. Nonetheless it is well known that, apart from the detection of significant equipment failure or damage, sensor-based monitoring requires a large volume data to be captured, as the correlation between the vibration and the relevant value-adding information can only be measured empirically and is subject to a wide range of influencing intensities. For the data captured to be both useful and assessable, the largest possible basis should be used, such as a large number of similar machines. The integration of data from multiple networked systems (even from different manufacturers) for the purposes of data evaluation (across equipment clusters) in one platform therefore offers all stakeholders huge, and thus far

untapped, potential for new intelligent services:

- The machine user/operator can be advised how to operate the machinery in a way that benefits both him/herself and the material being processed, and can be instructed in anti-vibration measures.
- Predictions for wear and tear and emerging damage help to create maintenance schedules that are based on the condition of the equipment and are therefore especially cost-efficient.
- The machinery manufacturer can use the analysis to improve products with regard to reliability and the emission of vibration.

Aim

The aim is to develop a platform that permanently stores and networks real-time vibration data from all types of machinery and provides methods, tools and scalable algorithms for analysing that data. The automatic 'semantification' of large volumes of textual sensor data enables cross-manufacturer clustering. Possible uses include the development of new business models (e.g. tailored insurance quotes, new bookable options or the optimisation of the global supply chain using smart data).

This concept was developed jointly by Open Logic Systems, the Fraunhofer Institute LBF and other partners.



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