



Dear Readers,

As reported in our last newsletter, the team of the ICV Dream Factory is currently working on the topic of **“Business Analytics”**.

Business analytics describes the comprehensive use of data based on mathematical and statistical analyses, together with explanatory and predictive models. In this context, the use of the word “business” underlines the fact that these analyses and models are used for business purposes to support and improve managerial decision-making.

In this newsletter, we first outline the different development phases of data analysis. Then, we show which industries are currently leading the race in the use of business analytics. Finally, we take a look at how individual functions use business analytics in their daily business.

We hope you enjoy reading this issue of the Dream Factory Quarterly. We wish you a merry Christmas and a Happy New Year!

Best regards,

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Suggested Reading

The KPMG study **“Mit Daten Werte schaffen”** (*Creating Value with Data*) investigates the different perspectives of



the use of business analytics in the German economy. Based on a representative business survey, it discusses how companies make use of the different opportunities offered by business analytics and which chances and challenges arise in doing so. In total, over 700 managers and executives from different

industries were questioned.

The Business Application Research Center (BARC) also carried out a large-scale study on the topic of business analytics this year. The study **“Big Data Use Cases 2015”** focuses on concrete use case scenarios for business analytics and their associated technological, organizational and professional requirements in companies. With over 550 participants worldwide, the study is one of the largest investigations into the topic of business analytics.



The development phases of data analysis | On the threshold of the data-driven economy

Since its very beginnings, data-based planning and performance management has been a core element of controlling. In recent years, leaps and bounds have been made in the degree of detail of the data analyses used and the knowledge and insights of the findings of those analyses. In the process, both mathematical and statistical analyses and explanatory and predictive models have become increasingly important. Thomas Davenport breaks this development down into three fundamental phases: Traditional analyses, Big Data, and the data-driven economy (cf. Davenport 2013). Davenport is the co-founder and research director of the International Institute for Analytics and is regarded as a leading expert in the field of business analytics.

1st Phase: Traditional analyses

The first development phase (mid-1950s to 2000) was characterized by mainly descriptive analyses and what we tend to call “classical” reporting. The objective was to use internal and structured data to describe transactions and activities which lay in the past. Predictive or prescriptive analyses (cf. Dream Factory Quarterly Issue 17) were rarely used at all. It often took several days or indeed weeks to carry out more comprehensive statistical analyses, with the preparation of the data frequently posing a greater challenge than the analysis of the data itself. This meant that analysts spent more time preparing the data than actually analyzing it.

2nd Phase: Big Data

The second development phase (2000 to today) started with the profitable utilization of data from the world wide web. Online companies such as Google or eBay were able to implement their data-driven business models within a very short period. While the focus of this phase still lies on descriptive analyses, unstructured data is also analyzed here. Additionally, external corporate data became increasingly important. New technologies such as in-memory databases or Hadoop enabled companies to evaluate large amounts of data in real time. Thus, complex analyses can be carried out many times faster than before.

3rd Phase: Data-driven economy

Today, we find ourselves on the threshold to a third development phase. The overriding characteristic of this phase is that most operative decisions are driven by data. This creates considerable competitive advantages not only for online companies but also for companies from traditional industries. These competitive advantages can be traced back in particular to the use of predictive and prescriptive analyses. In this context, descriptive analyses only play a subordinate role. Additionally, both structured and unstructured data and internal and external data can be combined as needed depending on the specific goal.

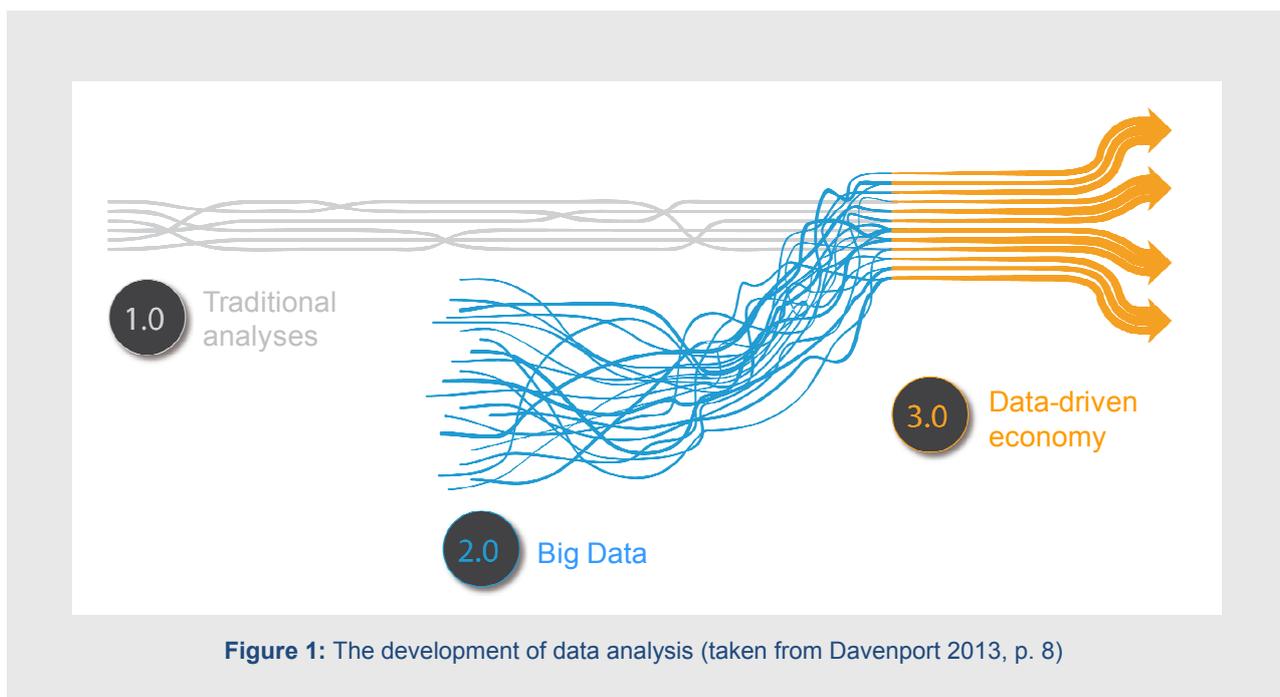


Figure 1: The development of data analysis (taken from Davenport 2013, p. 8)

Beneficial use of business analytics | Which industries are the frontrunners?

The use of business analytics was investigated as part of the current KPMG study “Creating Value with Data”. Alongside the objectives and challenges of individual methods of analysis, the study also takes a close look at the data sources and the technologies. The participants on the study included directors and heads of divisions and departments of companies in Germany with at least 100 employees (cf. Erwin/Heidekamp 2015). In the following section we would like to take a closer look at some of the interesting findings of the study.

How progressive are individual industries?

The participants on the study were asked a range of questions, including the extent to which their decisions are based on data analyses and whether the findings of data analyses create beneficial effects. Figure 2 shows the answers to these questions by industry.

According to the study, there are three leading industries: Transport and logistics, automotive, and insurance. After these frontrunners, the rest of the industries rank pretty closely together, although the energy sector does lag behind somewhat. This could be because “smart” meters are not very widespread yet. This means that there is not enough consumption data available to be able to identify the relevant causal effects. When it comes to the use of data analyses in decision-making, retail, banks, and machinery and plan engineering are regarded as extremely progressive (cf. Erwin/Heidekamp 2015, p. 19).

A look at the leading industries

Companies from the **transport and logistics industry** are seen as pioneers even though they use comparably simpler analyses. When it comes to the use of more complex analysis methods, transport and logistics companies are actually seen as stragglers.

More than two-thirds of the companies surveyed from the **automotive industry** already generate considerable added value today from the use of business analytics. One typical use case is the data-driven optimization of the supply chain. In terms of the use of more complex analysis methods, the automotive industry is also regarded as a leader.

The **insurance sector** is also extremely data driven. Mathematical and statistical methods play an important role, especially when it comes to assessing risks and the subsequent allocation into risk classes. The aim here is to optimize customer segmentation (cf. Erwin/Heidekamp 2015).

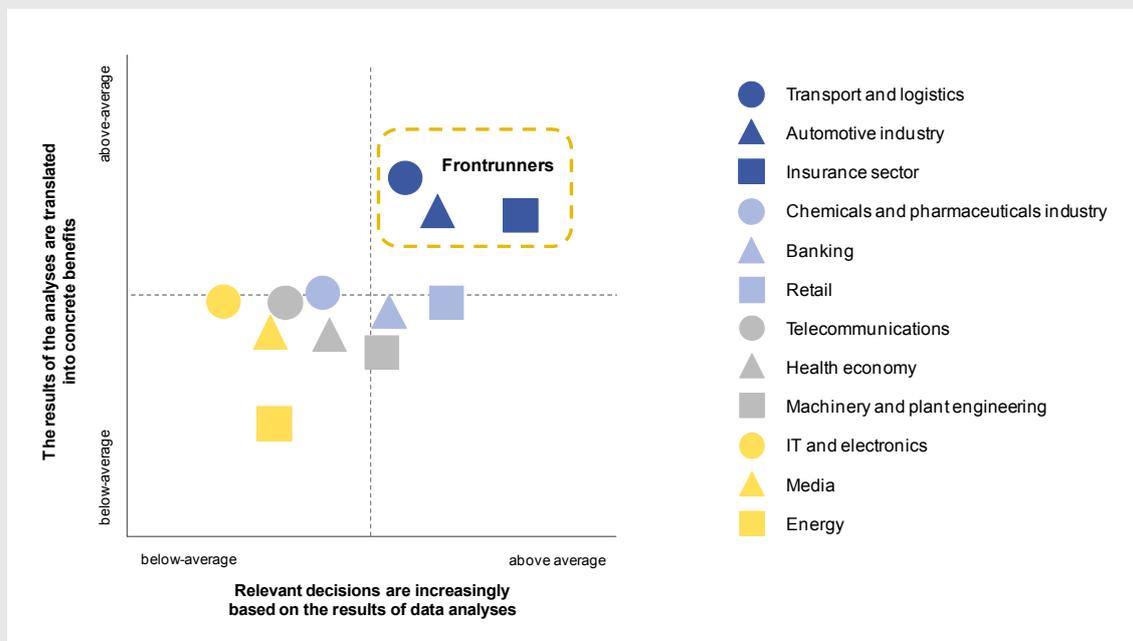


Figure 2: Specific use of business analytics by industry
(based on Erwin/Heidekamp 2015, p. 19)

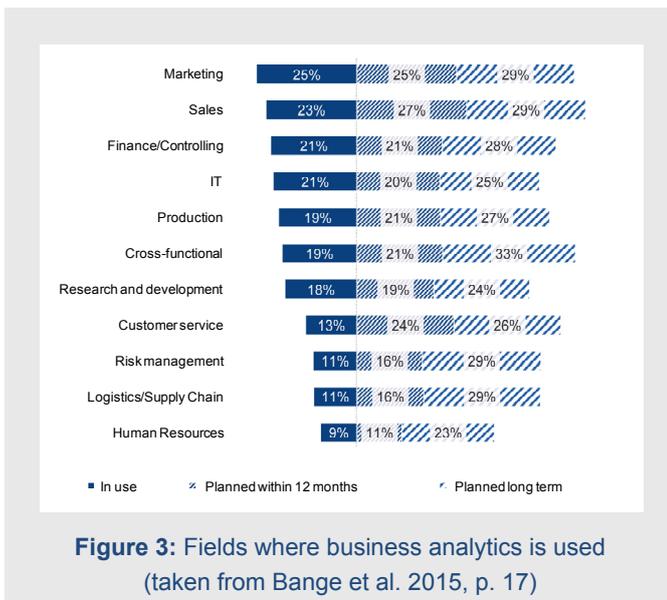
Business analytics in individual functions | Controlling among the top 3

Companies which already use business analytics methods today put a figure on the added value generated, saying they experience an average reduction in costs of 16% and an average increase in revenues of 13%. These are the findings of a current study by the Business Application Research Center (BARC) (cf. Bange et al. 2015, p. 16). During the course of this study, BARC also examined which functions already use business analytics and for which their use is currently being planned (cf. Figure 3).

Business analytics in individual functions

Concerning the use of both mathematical and statistical analyses and explanatory and predictive models, marketing and sales take the top two positions (cf. Figure 3). Here, the focus lies in particular on sales forecasts, the analysis of customer profiles, and the evaluation of different sales promotions.

Controlling placed third in the survey, with particular potential expected in the field of forecasting. For example, the use of probability-based planning methods leads to more reliable predictions.



Typical use cases in controlling

Currently, the focus of discussion lies on the use of driver-based planning. Here, planning is based on a system with the most important internal and external variables. These are aggregated step-by-step into a KPI.

The objective is to map existing uncertainties, with the challenge being to calculate the effects of different input values on the target values. One option here, for example, would be to use Monte Carlo simulations in order to discover the target value range for different input values. From the controlling perspective, for example, this would allow companies to address the following marketing and sales questions (cf. Oehler 2015):

- Which costs are incurred when a new salesperson is hired? Does this person need an office or a company car? Which ancillary wage costs are incurred?
- Which costs are incurred by a marketing seminar?
- How will sales revenues change if the price is raised by five percent? What impact will this have in the long term on sales quantities?

Naturally, the concept of driver-based planning is not completely new in controlling. However, the technologies now available offer new possibilities for the low-cost implementation of such a planning approach.

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