

Dear Readers,

In the last newsletter we gave you a brief outlook about our new focus: In 2013 and 2014 the Dream Factory will tackle the issue of "Big Data". The new technical possibilities arising from information technology enable us to gather, save and network quantities of information that were previously unimaginable and mean that today companies face the challenge of how to make profitable use of this data.

The Dream Factory of the ICV has set itself the goal of presenting the challenges which arise from big data for controllers and providing the first impulses for its use in companies in general and in controlling in particular.

As can be seen in Figure 1, we want to find out which tasks and functions the controller should take on when collecting, preparing and analyzing big data.

This issue of the Dream Factory Quarterly is dedicated to answering the question of what differentiates big data from

conventional information, where big data comes from, and in which areas of the company big data analyses are already being used.

Additionally, we have a report about a joint session on exchanging ideas and opinions by the Dream Factory with representatives from IBM. At the beginning of July, members of the Dream Factory were invited to the headquarters of IBM Germany in Ehningen for a workshop on big data and smart analytics.

We hope you enjoy reading this issue of the Dream Factory Quarterly.

Best regards,

Péter Horváth

Uwe Michel

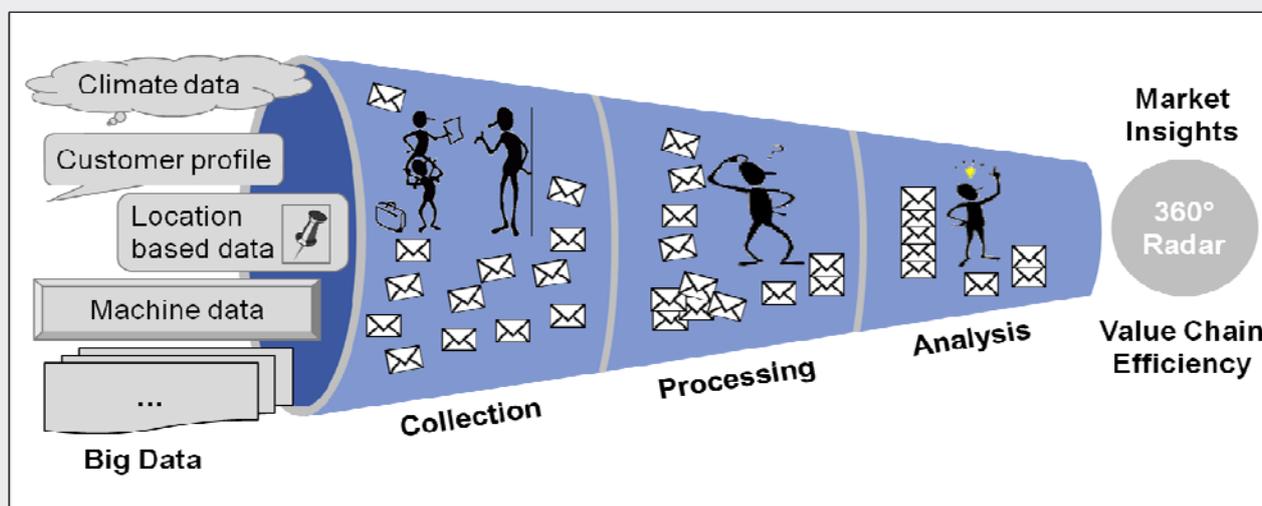


Figure 1: What should the controller do when using big data?

How to win with data | Big Data - The management revolution?

Andrew McAfee and Erik Brynjolfsson (2012) see the use of big data in companies as nothing less than a “management revolution”. Their reasoning is both simple and complex. Simple, because decisions based on facts are – simply – better. Complex, because basing decisions on facts is no easy thing to do. The sheer multiplicity and the overwhelming quantity of data which has become available thanks to the technological developments of the last decades exacerbates the selection of relevant data. Additionally, new methods of analysis are necessary in order to master the resulting avalanche of data and to ensure it is used meaningfully. This aim of this article is to provide initial insights into the topic of big data. We want to show what big data means, where big data comes from, and in which functions companies place their trust in big data analyses.

Big data is used in a wide variety of fields

Everybody should know that young companies like Google or Amazon use big data. If you don't, then ask yourself how Amazon can always recommend books which match your last purchase or why Google recommends websites from outdoor suppliers after you have booked a trekking tour on the Internet.

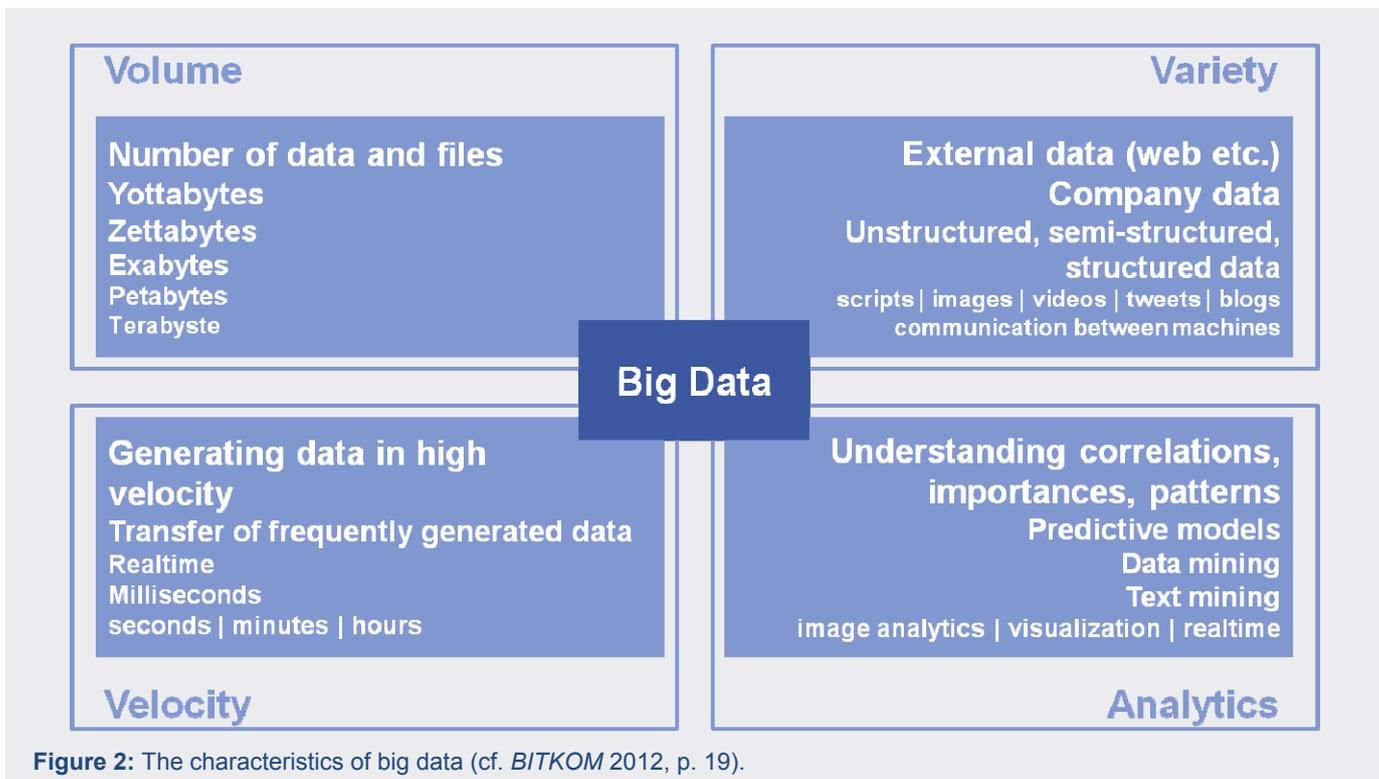
But big data can also be incredibly useful outside of CRM applications, for example to decide the US elections or to assess the players on FC Chelsea's shopping list. As such, President Obama's campaign team used enormous amounts of data to decide which voter groups represented the most effective use of campaign funds or which voters would be most likely to donate to the campaign (cf. *Business Intelligence Magazine* 2013).

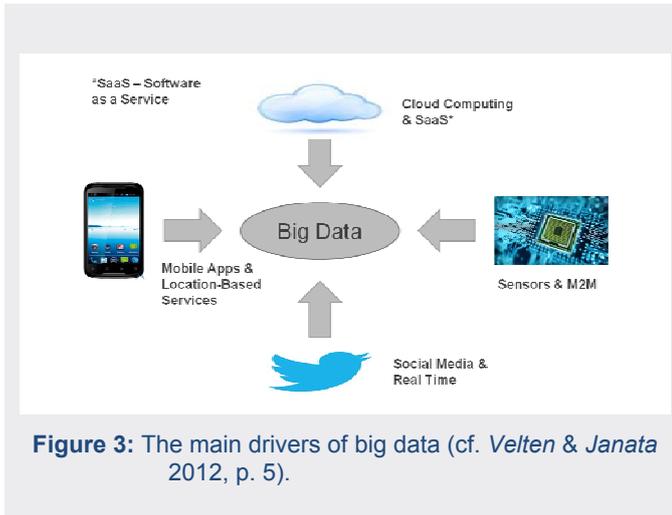
Big data is a relatively new phenomenon which has only been a topic of public interest in the last few years and is now slowly finding its way into companies. So, what is so special about big data? What makes it so different to our information pool of past decades?

What characterizes big data?

A look at the most prevalent publications on big data reveals three constitutive characteristics: Volume, variety and velocity. Some authors, such as the authors of a study by the Federal Association for Information Technology, Telecommunications and New Media e.V. (BITKOM), also see the new possibilities for analysis as a criterion for big data.

New methods of analysis are a prerequisite for being able to make any meaningful use of big data whatsoever. It is virtually impossible to efficiently analyze unstructured data particularly, i.e. data without a predefined format, with conventional methods. Prime examples of unstructured data are the contents of social media platforms or Twitter updates.





The quantity of data which companies use in their decision-making processes grows drastically when we bring in big data. If we have gigabytes of data about bank statements and sales statistics in ERP systems, the volume of data in the field of big data is many times greater. The information available on the Internet alone is estimated to amount to 295 exabytes (one exabyte has 18 zeros!) (cf. *Seidel* 2013).

And data from the Internet and from social networks is only one source of big data. As Figure 2 shows, mobile apps, cloud computing and sensor-supported networking of manufacturing goods and machines are also the main drivers of the data explosion. It is above all the social media phenomenon – the possibilities for communicating on the Internet – which plays a major role in the exponential growth of data due to the spread of content via a wide range of platforms.

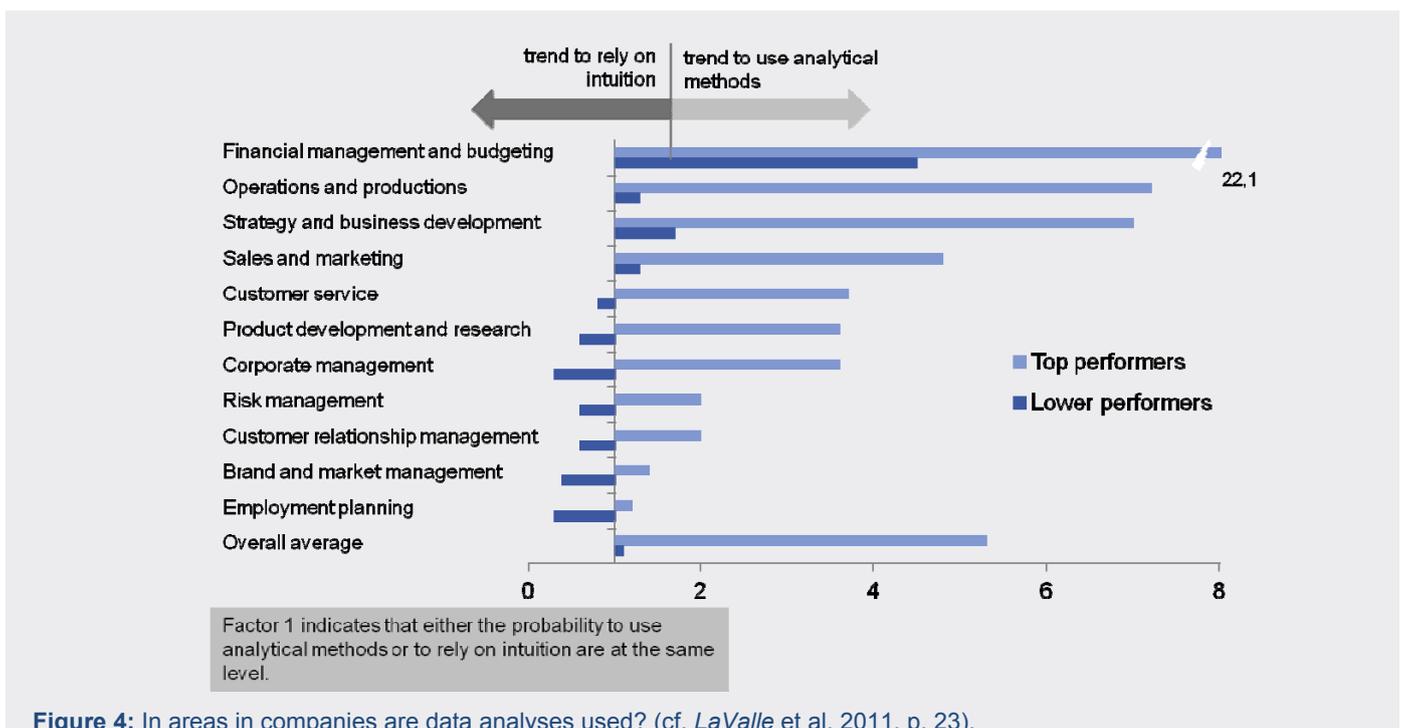
M2M communication between machines, and the data and information which this generates is of particular importance for our production methods of the future. Numerous companies and research institutions are already working on the fourth industrial revolution, after mechanization, industrialization and automation. The core vision of “Industry 4.0” is digitally networked and locally controlled production plants which can react to changes flexibly and autonomously (cf. *Spath* 2013).

How can big data improve corporate management?

McAfee and *Brynjolfsson* (2012) see the advantages of big data in corporate management in improving decisions through a more effective supply of information. An empirical study by *IMB* and *MIT Sloan Management Review* appears to confirm this. As can be seen in Figure 4, top performers base their decisions much more often on analytical findings than on intuition. At the same time, there are three steps to the use of analytical methods (cf. *LaValle* et al. 2011, p. 23-24):

- **Aspirational** → Analytical methods are used to confirm decisions already taken,
- **Experienced** → Decisions are chosen based on data analyses,
- **Transformed** → Decision alternatives are developed based on the analysis of data.

We at the Dream Factory of the ICV will spend the coming months investigating which challenges these new possibilities of supplying management with information will create for the controlling departments in companies.



Bringing Big Data to the Enterprise | Die Ideenwerkstatt im Austausch mit IBM

At the beginning of July, the Dream Factory was invited to a joint session on exchanging ideas and opinions with representatives from IBM at the headquarters of IBM Germany in Ehningen. The goal of the meeting was to bring the Dream Factory up to date with the latest technological possibilities for using big data in companies and with the analytical tools needed for this. In return, IBM hoped to receive impulses and ideas for potential uses of big data in controlling from the Dream Factory team.

The team of the Dream Factory was given a very warm welcome in Ehningen by *Martina Koederitz*, President of the Management Board of IBM Deutschland GmbH, and *Donya Amer*, Director of General Business South Germany.

The joint workshop was opened with a presentation by *Frank Theisen*, Vice President of Smarter Analytics & Smarter Commerce, which gave insights into what big data means for IBM. Alongside some initial application examples, what was particularly interesting here was how the use of big data analyses for defined function of an IBM company is planned and executed. The underlying intention of such a project is always to create value for the company through a better basis for decision-making. Here, the focus is less on the question of what happened in the past or what might happen but rather on how to create the best result or what the best measures in a specific situation are.

After this, *Markus Gretschnann*, IBM SPSS WW CTP Leader & Industry Solutions Leader, presented the latest instruments and methods from the field of "Predictive Analytics". He gave real-world insights into their use in companies with numerous examples from the entire product lifecycle (cf. Figure 5). In this way, it was possible to use big data analyses to reduce the reject rate of a foundry for cylinder heads by 80% in twelve weeks, for example.

The meeting was rounded off with an outlook by *Dirk Wittkopp*, IBM Vice President of the Research & Development Lab Germany, of the latest trends and visions from the field of smart analytics and big data. However, as these are almost as top secret as the recipe for Coca Cola, unfortunately we cannot provide you with any more details here.

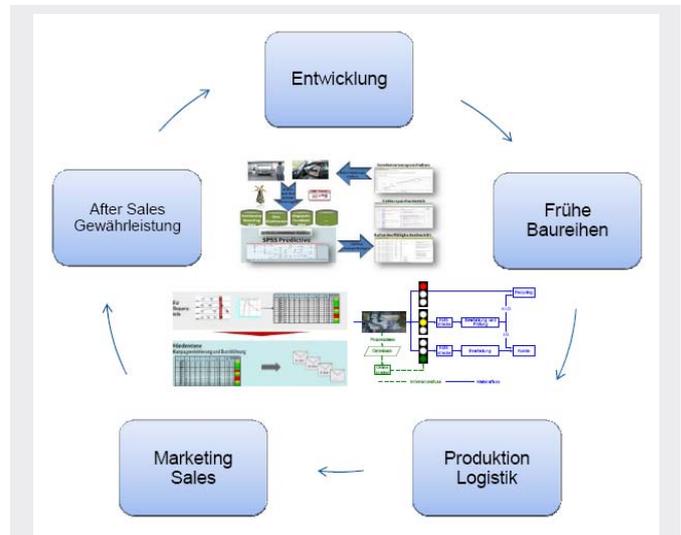


Figure 5: Areas where big data is used across the entire product lifecycle (IBM Deutschland)

The Dream Factory would like to take this opportunity to thank IBM once again for the invitation to Ehningen and for the interesting and stimulating presentations and discussions. We hope that we will have the opportunity to continue this exchange in the not too distant future.

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