

GCRI INTERVIEW

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Professor Kempf, how do you define Big Data?

Big Data is a new technology that makes it possible to analyze huge amounts of data in a very short time. In many cases, the analysis is done in real time. The sources of the data can be very different. You can use structured data from databases or unstructured data like comments in social networks or even pictures and videos. The focus of Big Data is to provide new and enhanced information to enable better decisions for companies or organizations.

What future opportunities and applications do Big Data solutions and analytics provide to society?

A good example is traffic control. With Big Data technology, you can analyze traffic in real time, which helps to detect and avoid congestions. The obvious benefit is a reduction of the individual travel time of every single driver. Moreover it is good for the environment. A Big Data-driven traffic control system reduces pollution significantly. Also Big Data can help oncologists find the best cancer therapy for every patient. For this purpose medical scientists analyze data from different sources like anonymized patient records, articles from medical journals or other medical documents. Finding the best cancer therapy for a patient used to be a very difficult process that could take a lot of time. Big Data has the potential to dramatically decrease that time, leading to better results. There are many more examples how Big Data can help society today and in the near future.

What are the major challenges with respect to privacy and the application of Big Social Data in Germany?

Whereas in the U.S. the focus is more on the chances of Big Data Germans tend to highlight the risks and the fear of uncontrollable surveillance. That is why it is necessary to discuss the chances and risks of Big Data technologies in public. It is obvious that the potential of big data is enormous. But in Germany Big Data projects will only thrive if they succeed in complying with data protection rules. Therefore, the legal requirements should be taken into account at the very beginning of the development process of a Big Data application. The design of the process is decisive for legal compliance. It has to be checked whether consent of the data subjects is needed or if privacy issues can successfully be avoided by anonymizing data before processing it.

How can we, as Internet content consumers and producers, personally benefit from Big Data?

People benefit in many different ways. Consumers benefit from better products and services, car drivers from better traffic control, patients from better medication and employees from better work flows. In most cases we will not even see what is happening behind the scenes, but we will realize that things are getting better. This requires transparent data handling and a legal framework which is state of the art.

In which ways does Big Data enhance Germany's competitive advantage in research & development as well as in innovation?

Today, data is a resource like financial assets, manpower or property. Therefore, Big Data will become a key technology in the digital world. Companies from many different sectors have to adopt those techniques if they want to stay innovative and competitive. In the realm of science, the technology is a key enabler for further progress in, for example, genetics, climate research or astronomy, where it is necessary to collect and analyze huge amounts of data. Using Big Data techniques, scientists will significantly improve their productivity getting excellent research findings in less time.