The Internet of Things (IoT) is generally viewed as an internet-like structure where physical objects have network connectivity allowing them to communicate on-line. Powerful analytics tools can then be used to process the information gathered in large sets of structured and unstructured data. On a high level, the IoT space is broken down into three main areas: Data collection, data transport, and data analysis.

**Use of solutions is still at the beginning**

Data collection refers to data that is produced by connected devices such as wearable electronics, smart sensors, connected vehicles, smart energy meters, and health monitoring devices, just to name a few. As IoT devices continuously generate data, a vast amount of that data needs to be transported through (mostly wireless) networks, which adds to the already exponentially growing volume of internet traffic. Advanced software analytics based on big data technologies allow for storage, consolidation and analysis of data in near-real time to achieve advanced operational business insights and eventually a competitive advantage against less data-driven business approaches.

While companies worldwide begin to embrace IoT and Big Data, a recent study by Gartner shows that only 8% of companies currently deploy such solutions. The same study also finds that 57% of companies are currently working on their strategy to tap into these sheer endless opportunities to gain valuable data driven insights about their customers, their assets, their processes, and their value chain as a whole.
Yet, if connected devices and the insights those provide are so valuable, why is IoT not ubiquitously present in today’s business world? As it turns out, the Internet of Things until today is based on highly complex value chains with competing and fragmented standards, applications, and platforms. Also technical maturity, especially battery performance for sensors and devices, has not been advanced enough to support long-term autonomous functioning without recharging. Lastly, national regulation and complex roaming agreements for international data connectivity also slowed down the speed of penetration of connected devices in the past.

Analytical insights with high value

Today, thanks to a maturing technology ecosystem and an uptick in demand, hardware and software costs have significantly decreased. National borders of data networks are about to disappear as carriers develop international M2M alliances and Wi-Fi coverage increases. At the same time, the rise of cloud services and mobile devices drives the development of a new generation of business applications and services. The combination of these trends gives reason to believe that the market for IoT and Big Data is currently at a turning point towards an accelerated growth phase.

With spurred growth and companies tracking more and more data, Big Data will become an indispensable tool for every business. Big Data is generally characterized by three V’s: High Data Volumes, Data Velocity, and Data Variety. The types of data that we are talking about here range from machine to machine (e.g., sensors, GPS, log files) to people to machine (e.g., e-commerce, financial transactions) and people to people (e.g., social networks, virtual communities). Whereas in the “old world”, one would look at finite sets of structured data, the Big Data world consists to a large extend of unstructured data (data that is not organized in a pre-defined manner) which is interlinked with data from a variety of sources. What is important to understand: Big Data really is not about the data itself but much more about the information, the analytical insights, we can derive from the data in our environment.

Using structured and unstructured data internal and external to an organization is what will differentiate successful companies in the future from their less successful counterparts. Finding data patterns and exploiting those will be a key competitive advantage for businesses in the 21st century. Advanced insights into data are not only relevant to achieve internal cost savings but they can also be used to create better products or services that are more tailored and customized than ever before. This makes Big Data a crucial element of every business strategy, generating cost savings, facilitating new innovations, and as a result, improving financial KPIs.

As a nascent industry trend, the Big Data space is characterized by a fast pace of innovation and new developments. Venture capital and institutional investments into Big Data companies have significantly increased in the last years, with over $3.6 billion invested in Big Data companies in 2013 alone. These new and innovative Big Data firms are shaping the trends for the years to come. This means that organizations that are ready to jump on the Big Data bandwagon will not only have to understand the current status of the industry, but also stay on top of emerging trends that will affect their Big Data projects down the road.

Convergence of Big Data and Cloud Services will affect all industries

Besides a variety of industry specific trends, the main overarching development to consider in the Big Data space is the convergence of Big Data and cloud and the impact it will have on corporate decision making. In the past, corporations used to build their own storage, data warehousing, and data analytics infrastructure—a costly and time intensive endeavor. In the future, corporations can draw on third-party providers to offer on-demand, sheer indefinitely scalable, cloud-based Big Data services. In addition to more efficient storage, cloud solutions will help corporations break up data silos and merge all their data into one comprehensive data cloud that is accessible anytime from anywhere. These holistic insights into a company’s operation will enable a higher degree of quantitative decision making for small and big companies alike.

These developments in Big Data, fueled by growth in internet-connected devices and advances in cloud computing will ultimately transform the way companies run their business, make decisions, build products and delight customers. This fundamental development will affect all industries, from telecommunications to healthcare, retail, logistics, manufacturing, energy, and beyond. It should hence be embraced as a way to spur sustainable growth and improve the bottom line in new data-driven ways.

Daniel Kellmereit has a wealth of experience in the areas of innovation management, marketing, corporate development and growth strategies. He has spent more than a decade enabling large global companies to develop business strategies, innovate and shape markets, adopt emerging technologies, design strategic alliances, and launch new products and services. In his current position as CEO of Detecon, Inc., he is responsible for the North America and Latin America region and leads the Strategy and Innovation group. He works with clients in the telecom, Internet, hardware, software and services industries as well as investors.