

## Executive event “Beyond the Internet of Things”

*From technology to services and the internet of everything*



On September 23rd, 2016, Arthur D. Little hosted its annual executive conference in Munich and welcomed more than 50 senior executives from different industries in Europe, the Middle East, Asia Pacific, and the US. This year's major theme was “Beyond the Internet of Things – from Technology to Services.” Insightful presentations and lively discussions allowed all participants to gain valuable perspectives on and ideas about how the IoT and digitalization are impacting business models and operations of different industries, and how successful players master these challenges. The event concluded at the Munich Oktoberfest, where many guests networked in a relaxing atmosphere.

### **Beyond the Internet of Things – from technology to services**

The increasing digitalization challenges players across the industries to transform and embrace the emerging opportunities. Until today companies have often seen digitalization and the Internet of Things (IoT) mainly from a technology perspective. Digitalization, however, has a broader scope than devices becoming IT or internet enabled and “smart.” Therefore companies need to abandon the narrow view and understand that digitalization drives not only technological change, but also the transition of offerings from physical products to services, and even disrupts entire business models. The Internet of Things will even develop further into an Internet of Everything, comprising also the digital twins of services and human beings.

These changes urge companies to develop new capabilities and understand and adjust to the different characteristics of new service offerings, in order to effectively provide integrated value propositions to their customers. Most importantly, the digital opportunity needs to be viewed holistically, in contextual environments, in which the new solutions will be introduced.

However, this massive change, in most cases, cannot be handled by one industry alone. Hence, the IoT can only be mastered jointly and not by competition across the industries. Partnering will therefore gain importance in every industry and market.

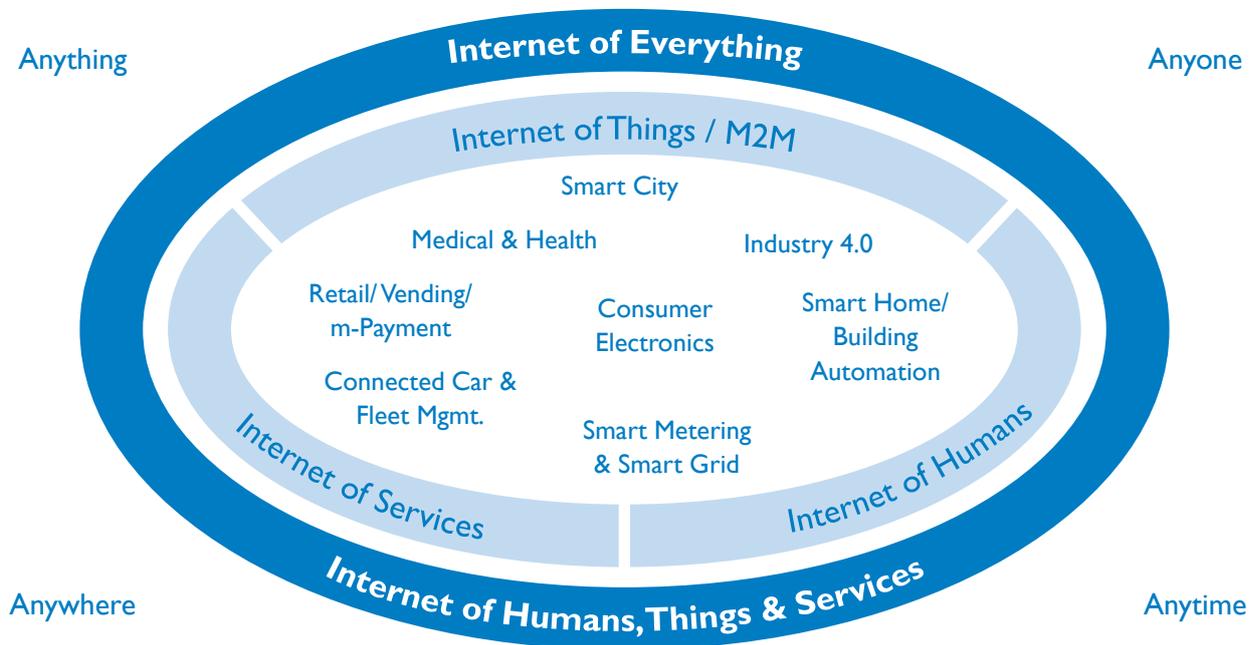


In summary, the IoT is the core driver of business model change and efficiency improvements. However, no industry or player has a dominant position in this space yet and mass-market application of the IoT can only be mastered effectively through partnerships. This understanding was shared across the presentations of André Stark (BMW), Sven Heistermann (Google) and Yüksel Sirmasac (RocketHome).

Another important aspect discussed by the participants was machine learning, i.e. the ability of machines to learn constantly by connecting to the outside ecosystem in order to improve services and create value for the customer. “You have to put the customer into the center of your activities,” Sven Heistermann said. Henriette Wendt of Telia Company agreed: “We are reaching the point of machines having the intelligence of human beings.” And “We are now at the tipping point of IoT becoming real in people's and organizations' lives,” Wendt stated.

In the discussions during the event, it also became apparent that data security, privacy and ownership of data are critical and

## The Internet of Everything



Source: Arthur D. Little

important aspects of successful IoT deployments. Despite this topic being of highest importance to participants, it also became clear that no permanent solution to this issue has been found. Hence, this topic still imposes huge insecurity to most players.

### Converging business models driven by the Internet of Things

Manufacturers such as BMW see digitalization also as an enabler to transform their core businesses. “In the future, the mobility experience in vehicles will be totally different to what we experience today,” stated André Stark, Head of Digital Services at BMW. Due to the continuing trend towards autonomous driving, vehicles will become more like living rooms, and hence need to be able to offer similar experiences to customers. Engaging in service dialogue with the customer, however, is a new dimension for OEMs. Furthermore, to provide these advanced services, vehicles require secure back-end systems as well as broadly available and effectively stable connectivity. Christof Hellmis, VP Strategic Programs at the digital-map service provider Here, picked up and confirmed this aspect.

Yüksel Sirmasac, CEO of RocketHome, believes truly smart solutions need to connect the whole ecosystem that is emerging within the smart home market. He highlighted to the audience that today’s digital solutions in the smart home space are mainly independent and isolated – hence, they are less accepted by customers due to the low additional value add. By offering integrated portfolios, smart home providers such as

telecoms and utilities could transform their businesses, bind their customers more effectively and reduce churn significantly.

### IoT as an enabler of smart manufacturing

Alastair Orchard, VP Digital Enterprise Project at Siemens, outlined the importance of grasping the digital opportunity for the product development process. “The digital revolution enables companies to transform the internal value chain into a competitive advantage,” Orchard believes. Siemens is already today running its product development and manufacturing processes as a “virtual copy” of manufacturing sites comprising production facilities, people and products. This advanced technology enables Siemens to produce highly customized products for its clients – right the first time. The example of Siemens demonstrated to the participants, how far digitalization has driven the developments in manufacturing. Even if, as Alastair Orchard pointed out, not all of Siemens’ facilities are yet working with these highly sophisticated technologies they are making pace on this path.

### Partnering is becoming a key differentiator

Panelists from Vodafone, BMW, insurance service provider Audatex, and Google reiterated that in particular the need for partnering within and across ecosystems will be required for succeeding in the digital age. “Every company has to focus on its key capabilities – if we combine these capabilities, we will be able to build differentiating solutions,” said Erik Brenneis from Vodafone.

Hubertus von Roenne of BT agreed: "Players will be strongest when they identify their individual strengths and focus on those, while partnering with others to acquire the capabilities the player does not have itself." However, internal organizational structures often do not match innovative ecosystems.



### Beyond the Internet of Things – driving the future of operations

As "Industry 4.0" shapes the future of operations, Bernd Schreiber of Arthur D. Little highlighted that the integration of the value chain is key to driving radical performance improvements in enterprises. In order for companies to effectively leverage digitalization for their businesses, they need to understand the available and emerging technologies, develop target pictures, and improve transparency on cost structures, which is essential for setting the right priorities.

### LPWAN for new IoT solutions: enabling low-cost use cases

Emerging technologies such as "low-power wide area wireless access" (LPWA) represent new and efficient ways to realize

small band and very remote use cases. "Solutions can go as low as five Euro total cost of ownership," said Pierrick Hamon from Qowisio. By introducing such types of low cost solutions, the market could move to "disposable" IoT solutions ("Long-range RFID"), enabling use cases such as palette tracking and tracing in the logistics industry, sensor networks in remote locations, and smart city networks and numerous others in the utilities and telecoms industries.

### Big data as a value driver

Many IoT applications will depend on large amounts of data and analytical input from numerous sources (e.g. weather, emissions, traffic-light data) with the aim of providing the most precise information at any location – e.g. delivering accuracy of less than one centimeter for mobility services. "The real value add, however, is the ability to "make sense" out of big data and put it into a meaningful form and result – from business of data to business of knowledge," Christof Hellmis from Here claimed.



### Future of Operations Building Blocks

Cognitive	Connected	Virtual	Human centered	Value add
Big data / advanced analytics 	Connected things 	Augmented reality 	Collective intelligence / crowd sourcing 	Block Chain 
Cognitive, self learning systems / bots 	Collaborative, smart machines and robots 	Cyber physical systems / virtualized networks 	Virtual workplace / workplace 4.0 	Additive manufacturing / 3D printing 
Autonomous transport systems 	Smart energy systems 	Virtual modelling / simulation 	eLearning / MooC <sup>1</sup> 	Integrated eco-systems / decentral (mobile) value add 

<sup>1</sup> Massive open online Course  
Source: Arthur D. Little.

Claudiu Pasa from Amazon as well as Tariq Hussain from Zumtobel Group explained that IoT use cases can however become difficult to implement due to the “massive scale” of solutions, physical constraints of devices and the need for devices to work seamlessly on a global scale. Henriette Wendt from Telia Company added that operators will have to work on global connectivity solutions aiming to make it easier for businesses to offer their services worldwide.

## Oktoberfest

Traditionally and also this year, the event was closed by a visit of the Bavarian Oktoberfest to which Arthur D. Little invited. A number of participants joined the gathering and used the casual atmosphere to network and exchange ideas across industries.



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Our consultants have strong practical industry experience combined with excellent knowledge of key trends and dynamics. Arthur D. Little is present in the most important business centers around the world. We are proud to serve most of the Fortune 1000 companies, in addition to other leading firms and public sector organizations.

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