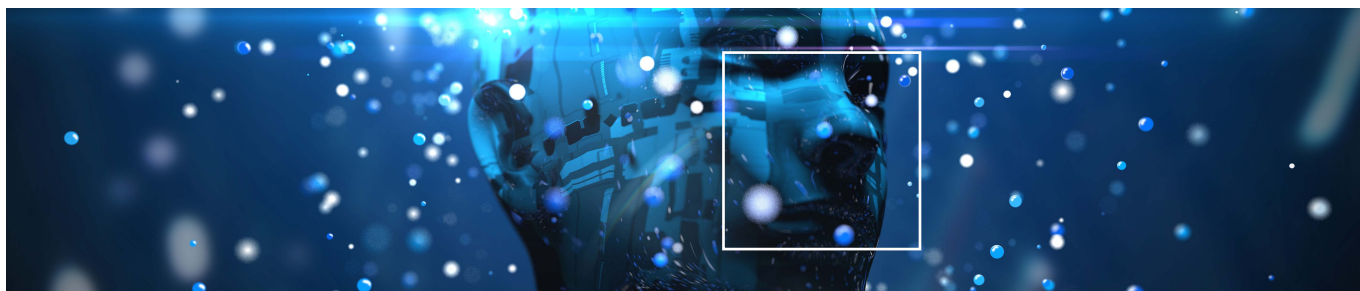# Executive Roundtable: Digitalization

*What are "real-world use cases" of today's digital-hype technologies?*

Arthur D. Little's sixth executive roundtable on "Digitalization" focused on implementation examples of technology-hype topics in different industry contexts, with emphasis on artificial intelligence (AI), robotics process automation (RPA) and blockchain. The cross-industry discussions revealed that certain AI and RPA applications have reached "ready-to-use" maturity and are almost standard in some industries, while they are hardly dealt with in others. Blockchain, on the other hand, has disruption potential in almost every imaginable application area – but still needs to be proven in real life outside the financial industry.

Digital-technologies evolution: Neither panic nor sleep

The sixth Arthur D. Little roundtable on "Digitalization" was introduced by Volker Pfirsching, head of ADL's Digital Competence Center, with a clear message: It is not too late to benefit from today's hype topics! Still, as technologies, e.g., in artificial intelligence, are at different maturity levels, some technologies have reached maturity that allows disruption of established technologies – depending on the use cases in which they can be applied.

Arthur D. Little AI Technology Maturity Tracker
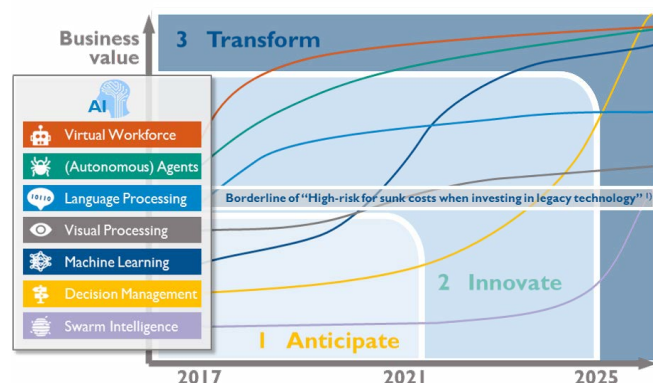
Artificial intelligence, for example, could make many of today's heavy investments in existing technology and IT obsolete within months, as some forms of it are already about to transform industries. As an example, the group discussed software robots as one specific form of AI: an insurance executive shared his experience with RPA. In his industry the technology is close to becoming established and is, rather, regarded as a bridge technology on the way towards more advanced AI. Representatives from other industries, on the other hand, shared their experiences with ongoing activities that were still in piloting phases and therefore some steps away from becoming standard.

Intelligent technologies – how AI and cognitive technologies can be applied in practice

Dr. Eberhard Kurz (CIO Deutsche Bahn AG)

As a key note, Dr. Eberhard Kurz, CIO of Deutsche Bahn AG, shared some insight into how AI is applied in Germany's largest railway company.

IT and AI play a significant role in enabling DB services

In the federal, technology-driven company, IT and AI play a significant role in enabling the broad service portfolio.

DB's "Digital Map" contains a broad range of digital initiatives that are driven by IT as a "digitalization engine". The current focus of AI initiatives is on additions to existing processes and functions. These help, in particular, in extraordinary situations such as handling of mass or peak requests. Some examples are language processing (e.g., for Alexa or Watson's Pepper) and advanced prognostics in the field of travel-chain information, predictive analytics in asset maintenance, and RPA pilots in accounting.

> "Sometimes we cannibalize ourselves…! But better we do it than anybody else"
>
> – Eberhard Kurz

Manifold application areas for AI in Deutsche Bahn

	SMART Mobility	SMART Logistics	SMART Assets	SMART Admin
Language Processing	Automated Customer Service			Automated Text Generation and Documentation
Image / Video Recognition and Processing	Autom. Train Operator Check / Passenger Flow Analysis	Autom. Truck-Authentification / Increased Driving Safety	Support of Operational Safety	Automated Document-Management
Neural Networks / Machine Learning	Prediction & Prevention of Crimes	Optimized Itinerary Planning / Optimized Storage	Opt. Employee Assignment / Optimized Maintenance	Automated Backoffice Processes
Smart Machines, Robotics	Robots (e.g. Cleaning)	Robots (e.g. in Warehouses)	Autonomous Drones	

Kurz explained that Deutsche Bahn, together with its internal IT provider, typically acts as an "integrator" and "smart purchaser" of new technologies, deciding where to focus and invest: the technical development of new technologies is conducted by partners or in the DB ecosystem. A discussion within the group showed similar approaches in other companies, which also act as "refiners" and "adapters" of existing technologies.

In order to foster innovation and develop new applications of AI from within the company, DB applies several organization forms:

- Labs with different focus (e.g. d.lab, Ampulse, Skydeck)
- Accelerator (Mindbox)
- Venture teams (for venture-capital investments)
- Beyond1435 (open-innovation platform)

"Alexa, ask Deutsche Bahn…": travel information per voice
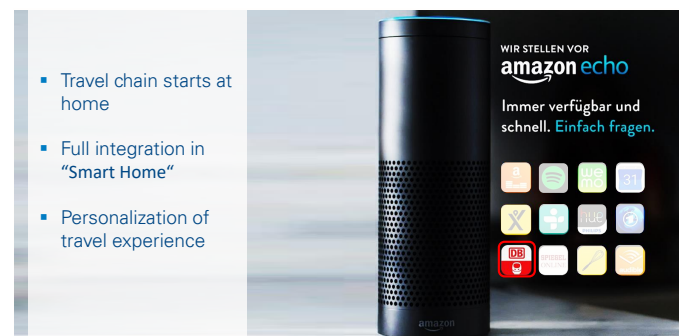
- Travel chain starts at home
- Full integration in "Smart Home"
- Personalization of travel experience

According to Kurz, the next big challenge will be to scale successful initiatives in order to harvest their full benefit. The discussion revealed some key success factors for scaling "speedboats" that also apply in other companies:

- Establishing a common platform – DB calls it "AI operating system"
- High management attention
- Successful convincing of the organization…
- …e.g., with tangible success stories, such as pilot plants
- Committed IT community
- Encapsulation of complexity with APIs and platforms
- Effective governance to avoid redundancies
- Fitting incentive schemes with appropriate KPIs

Automation (RPA/AI) in CRM – an opportunity to augment human and artificial intelligence

Karsten Kraume (CSO/CIO Arvato CRM Solutions)

The next impulse was given by Karsten Kraume, CSO/CIO of Arvato CRM Solutions, on the topic of RPA and AI in the global customer services market. Kraume firstly described a general trend that customer service is becoming more and more technology driven, with an increasing share of self-service and automation and relatively declining direct contact. Nevertheless, direct customer contact – the "human touch" – will always be a key element in the delivery of differentiated customer service. Growing demand for hybrid offers and blended solutions (a

combination of automation and direct contact) can currently be observed.

Kraume explaining RPA/AI applications in customer service

AI is considered one key technology to meet the growing automation demand in the customer service area and decreasing availability of a skilled workforce. Referring to the initial discussion which led into the roundtable, Kraume explained that AI was therefore not considered a bridge technology, but part of a long-term solution. It can contribute to meeting increasing automation demand due to efficiency requirements, capacity shortage and market growth.

With regard to the concrete implementation of RPA, the participants discussed tasks and skills required to "build" a software robot. Kraume explained that different characteristics apply, compared to AI applications: RPA implementation requires a strong functional skill set and process know-how in order to ensure that the bot is able to perform functions previously covered by humans. RPA should therefore be established as a decentralized construct of a centralized and standardized technology, close to business processes. High-end technical expertise, on the other hand, is not required to apply RPA to business processes – a characteristic that makes it attractive to implement and differentiates it from AI, which requires high-end tech and algorithmic expertise.

Discussion on "building" software bots

Of course, in customer services as well as other industries, if the basics of digitalization are still not established, RPA has its limitations. Non-machine-readable forms were one example Kraume described. For other use cases, RPA may not be the first choice. The "augmentation" of customer service with advanced analytics, for example, to improve agents' recommendations and decisions, is an interesting application field in which AI and data science are applied, and (co-)innovation will continue. Preferred models, which are often applied by Arvato, are global R&D ecosystems interlinking companies with expertise from global academic institutes.

Blockchain – Tech hype or game changer?

Prof. Dr. Philipp Sandner (Frankfurt School Blockchain Center)

The last impulse session of the day was given by Prof. Dr. Philipp Sandner from the Blockchain Center of Frankfurt School of Finance & Management. To start the joint discussion, Sandner gave a short overview of what problems Blockchain could solve with the help of an analogy.

Blockchain allows an "internet of value" in addition to the existing "internet of information".

Similar to the transfer of information via email, blockchain allows the transfer of "value" from one person to another. The transfer goes way beyond the mere transparency of an account balance, and can mean transfer of money, securities, properties and more. The core idea enabling this transfer is the capturing of transactions in one joint, distributed ledger instead of routing it through one or multiple banks or, more generally, intermediaries.

Money transfer via email with the help of blockchain?
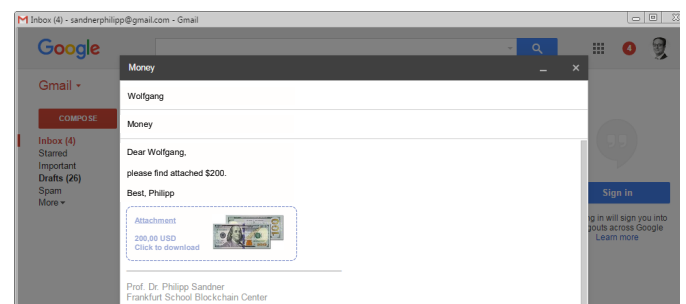
But blockchain's characteristics (decentralizing trust, validation and security, and privacy/anonymity) allow for many more applications in different categories. Some of the many examples include:

- Public blockchain: Avoidance of intermediaries in transactions. The main applications today are cryptocurrencies such as Bitcoin and Ethereum.

- Enterprise blockchain: In particular, for B2B transactions. E.g., for bonded loans or in logistics in order to integrate payment and delivery in one system; even objects such as trucks and trains can become smart and independent, and can, for example, pay tolls themselves.

- Investments: E.g., via initial coin offerings (ICOs) for financing of companies or projects. ICOs are already today challenging venture capitalists.

Following the introduction, the participants discussed opinions, e.g., on the disruptive potential of blockchain for different industries. Sandner pointed out that cryptocurrencies, for example, were not only currencies, but fintechs with business models which had significant potential to disrupt the financial industry. Applications in other industries are manifold. But despite the immense number of potential areas of applications, real applications can hardly be seen.

In his opinion, three things might turn the tide and lead to a multitude of new business models based on blockchain:

- Cash on ledger: A legitimate currency based on blockchain

- Dematerialized securities: Securities without paper documents in the background

- Validity of blockchain in court: Blockchain becomes valid in court just like, for instance, a fax

Summary and outlook

Following the discussions on three very interesting and challenging topics with maturity degrees ranging from early-hype phases to "close-to-standard", Volker Pfirsching summarized the key findings:

- Most corporates are positioning themselves as "smart purchasers" and integrating technologies from outside into their portfolios.

- Many are willing to cannibalize their businesses by doing that.

- Ecosystem- and partner management are crucial to orchestrating innovation and its application.

- Intelligent IT also requires standardized infrastructure, making IT architecture a core differentiator.

- Many interesting use cases have already, or are currently, emerging in the area of AI, particularly in RPA.

- Blockchain is one of today's hype topics, covering more and more headlines – but with the exception of cryptocurrencies, real-world applications are still rare.

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Arthur D. Little

Arthur D. Little has been at the forefront of innovation since 1886. We are an acknowledged thought leader in linking strategy, innovation and transformation in technology-intensive and converging industries. We navigate our clients through changing business ecosystems to uncover new growth opportunities. We enable our clients to build innovation capabilities and transform their organizations.

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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