



## Will this be the year of artificial intelligence?

Artificial intelligence will play a crucial role in the transformation of the auto industry in 2019. The reasons: Automakers have to better understand their customers as they forge a more direct relationship. And growing amounts of available data will require the auto industry to adopt more sophisticated analysis tools to remain competitive. AI is also coming into play in areas such as process robotization and data security.

One of the conclusions of the 2018 annual IT trends study by consulting firm Capgemini was that companies are increasingly focusing on the end-customer. Until now, nearly half of IT budgets have been spent on operations, maintenance and upkeep, but that percentage is set to drop as automation reduces costs. “Budget will be freed up,” said Rainer Mehl, digital and automotive expert at Capgemini. “With cloud and cloud applications, you don’t need major upgrade projects anymore, and you save money on operations,” he said. That money can, in future, be deployed elsewhere. Said Mehl: “Things are generally moving toward customer-oriented applications, and the share of costs for IT operations and maintenance must decline.”

Artificial intelligence (AI) and deep learning may well become one of the technologies that will make the difference between commercial success and failure in the auto industry of 2019. Experts say AI is far from a mature field today, but testing and further integration into existing systems will give the technology greater prominence. Axel Schmidt, global managing director for the automotive sector at Accenture, said AI is “the biggest and most important IT topic for the future.”

Companies are now having a hard time with the integration of data products, which are frequently developed in external labs. “Above all, you need data lakes, not data silos, to take new data products from machine learning and bring them into legacy systems. In this area, everyone is taking a trial-and-error approach,” Schmidt said.

The uses of the technologies are still not evenly distributed – not by a long shot. Sascha Coccorullo, an Oliver Wyman principal specializing in the automotive sector, said the auto industry is making only limited use of the potential of machine learning and deep learning. “There is still plenty of room for broader use in applications like residual value calculations and leasing contracts,” he said. A rethink is underway, Coccorullo said.

A concrete example is how AI could help make engine development far more efficient at a time when diesel is in decline and new electric powertrains are on the rise. Until now, the controls have been calibrated practically from scratch for each development. This has been a Sisyphean task in light of the new exhaust cycles. Johannes Richenhagen, department manager for software systems at FEV, a development services provider, said AI could bring simplification. “If all the data were collected in data lakes, you could access a trove of experience based on the type of engine and automatically preset many parameters,” he said.

The data

Data are becoming more and more important. But fields such as data science and AI can only be pursued successfully if data management functions reliably. “For added value to be generated from the volume of data, the information has to be classified and labeled,” Richenhagensaid. “We are in



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our relative infancy here.”

IT services provider Dimension Data is forecasting changes in information architectures for 2019. “The optimization of data management will therefore be an important area for company investment in the coming years,” it stated.

It is hardly surprising that data management and data quality topped the list of important issues in a survey of 2,700 data users by the Business Application Research Center (BARC). Data discovery and visualization ranked near the top. Unstructured data such as images tend to be underrepresented in these analytic efforts. Many companies find it too difficult to tackle this topic. But Google, Amazon and Microsoft are good indications of where the data sector is headed, especially in the field of image recognition.

For example, huge numbers of people are busy labeling images manually, to better train the deep neural networks that massive quantities of data require. The classification of images is becoming a special business model in many low-wage countries. “There is great value in labeling data, and the information brings considerable power to the automotive sector. It offers great potential for test and diagnostic data and for networking,” said Richenhagen of FEV.

So far, the most experience has been gained in the quality field. In the AI context, another aspect is becoming more important: simulation tools that help to generate images that can serve as the basis for self-learning algorithms. In many fields, cognitive services will support so-called transfer learning, in which neural networks learn from one another.

Many market analysts classify robotic process automation (RPA) as one of the strong trends. “RPA continues to play an important role, especially in finance, procurement and HR,” said Accenture’s Schmidt. “It can provide up to 50 percent greater process efficiency.” But it’s essential to look closely at RPA in light of the intricate character of many systems where machine and deep learning play practically no role at all.

It’s early days for process robotization, said Capgemini’s Mehl. “We’ve carried out many robotic projects this year, but just a small share has moved from the pilot phase to the rollout.” Process robotization is certainly suited for fields like accounting, payroll, incoming invoices, or standardized orders with invariably the same, recurring process steps, provided there is a business case for them. “The RPA that I see is geared to things that are highly standardized,” Mehl said. He sees future combinations of RPA and machine learning.

### Customer focus

Automakers increasingly deal directly with end-customers and the change of perspective is a tough one for an industry used to dealing with a specialized retail network that traditionally owned that relationship. “In the coming year, manufacturers will continue to face the challenge of learning the end-customer business,” said Coccorullo of Oliver Wyman.

Each manufacturer is trying to uniquely identify customers using a global customer ID. But many potential customers have been backing out, for example, at the point where they are asked to start an account so they can configure a vehicle. Companies need to clarify the benefits that would help keep the interested party hooked.



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CRM is an old sore point for the auto industry. Is there a way forward here? There is a noticeable shift away from dealers and to manufacturers, who are getting more and more points of access to customer data, for example, using vehicle-oriented smartphone apps and a wide variety of connectivity solutions. “Something is actually going on, even though people thought for years that nothing was happening,” Capgemini’s Mehl said.

VW’s used-car exchange Heycar is an example of the importance that customer data now enjoys. It is more evidence of cross-manufacturer cooperation on digital projects. Daimler recently acquired a stake in Heycar.

Starting in 2020, at the latest, all vehicles will likely be networked and the data will be available to the manufacturer, “Europe’s General Data Protection Regulation is slowing the trend somewhat, but the train is moving on,” Accenture’s Schmidt said. He is optimistic that manufacturers and dealers will agree on a common data platform. This is the only way to derive real benefits from the data and offer wide-ranging services, he said.

### Security

In its trend forecast, Gartner cites quantum computing as a key issue for 2019, even though it will be broadly relevant in 2023 at the earliest. But it is a disruptive factor and a complicated issue that should be dealt with at an early stage. This is especially true for data security. Companies like VW are already dealing with a key question: whether data that is now thought to be secure will continue to be safeguarded over the next few years. At that point, cryptographic processes that have been considered secure will be able to be cracked with quantum computers and their many times-higher computing power.

Mehl also sees a potential need for security-related measures in 2019. “Companies have to deal with the issue of whether their data is ‘quantum-secure,’” he said. “Data security in the cloud and in edge-computing is still an important theme as it relates to the customer’s trust.”

Experts say that, over the next few years, security will need to be anchored even more strongly into processes and organizations. During system engineering, for example, requirements relating to security risks should be taken into account. At the same time, systems need to be better encapsulated and conceived so that security problems can be repaired quickly over the air. Market researchers at Forrester are predicting that the “zero-trust” model will become the ad-hoc standard for every security architecture.

By Daniela Hoffmann