

Between Motor and Mobility

Customers need more than just a car





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Dear Readers,

Imagine that you have arranged a meeting with a customer. When you enter the appointment in your calendar, a self-driving car is reserved for you automatically. It then drives up to your office to pick you up on time, or informs you in advance that the journey will have to start half an hour earlier due to a traffic jam. You get in and your telephone and notebook automatically connect with the car's technology. This allows you to read your e-mails on the tinted windows and start a video conference on the way to your meeting. Refreshments are provided in the minibar, which is filled with your favourite beverages and snacks. After you have arrived on time, you simply get out of the car, which then searches for a parking space by itself and drives up again when you "summon" it.

Focus on the customer's individual needs

I can hardly wait for this scenario to become a reality. I would like to take my "digital life" into the car with me in order to make good use of my travelling time. So that this becomes reality, there needs to be rethinking in the automotive industry – away from the car as a pure vehicle and towards mobility that focuses on the customers and their individual needs and which anticipates these needs depending on the situation.

A fundamental change of self-conception

What does this entail for the automotive industry? It must take action NOW and tackle the manifold tasks associated with the digital transformation. It is not enough to just adapt a few processes. New products and new business models are needed here. And not least, there needs to be a fundamental change of self-conception: away from the provider of motors and towards a service provider of individual mobility.

Read all about concrete measures you can take to drive forward the transition towards becoming a mobility service provider and what you should look out for when digitalising your added value and products in this special issue. We will help you to be outstanding – especially in terms of customer focus, product quality and economic yield.

I hope you will enjoy this special issue.

Jens-Uwe Holz

Managing Director, NTT DATA Deutschland GmbH



Digitalisation – the engine of far-reaching changes

Cloud, mobile internet, social media – we are constantly on line, connected with everyone and everything, and have a world of information at our fingertips at all times and wherever we are. Digitalisation is on the upswing and affects customers' expectations and values with regard to mobility and transport just as it affects cooperation with suppliers and service partners. It is therefore important that OEMs digitalise their products as well as the entire process from product development to production and all the way to distribution, maintenance and customer support. As Marc Benioff, CEO of the leading cloud provider Salesforce, says: "If you don't move, you'll be "Uber"-taken".

New technical possibilities – the example of 3D printing

One of the principal drivers of digitalisation is the cloud, which enables huge volumes of data to be stored and accessed at all times and from any location. It is thus the prerequisite for digitalisation, the Internet of Things (IoT) and Industry 4.0. It provides momentum to technical innovations, which, in turn, spur on digitalisation. 3D printing, which could even revolutionise the automotive industry, is an example of this.

While the industry is still waiting for self-driving cars, the next technical revolution is just around the corner: 3D printed vehicles. A car that was made using a 3D printer was presented at the International Manufacturing Technology Show in Chicago in 2014. It was manufactured within 44 hours using a large 3D printer right at the convention centre. The entire manufacturing process took only four months, from the first brainstorming session to the actual printing process. A quantum leap in comparison to conventional vehicles, whose development and production take several years.

No longer a distant prospect: electromobility and autonomous driving

3D printing will soon play a major role in creating parts and components, because it allows for a greater variety of variants and enables manufacturers to respond more quickly to individual customer requests. The problem with 3D printing, however, is that vehicles can be produced only one at a time; a fact that stands in the way of series production in the long term. This is why we are still quite a long way away

from completely 3D printed cars. In contrast, electromobility and autonomous driving are technical innovations that are currently revolutionising the automotive industry. An increasing number of countries, such as Norway and the Netherlands, intend to ban the sale of vehicles with internal combustion engines as from about 2025. Against this backdrop and in combination with increasing tax incentives or bonus payments from the state, some countries will see electric vehicles developing first into a competitor and then into a no-alternatives replacement for conventional cars with internal combustion engines.

Autonomous driving is also within reach. For example, Google announced at the 2015 International Motor Show that its first self-driving car would need neither pedals nor a steering wheel – and is to be ready for the market in four years time. Autonomous vehicles will have an enormous impact on the entire industry, for example due to the fact that driving as such will take a back seat, while making good use of time during the journey will become more important. Offering customer-relevant connected car services is the prerequisite for making the best possible use of time spent in the vehicle. The car is thus no longer important as a product, but as part of the service provided to the customer.

New market players

Google and Apple are investing heavily in the development of self-driving cars. Similarly, Tesla and Chinese OEMs are challenging the established German car manufacturers and their suppliers. So far, it is impossible to predict how the focuses and market shares will change. That traditional automotive manufacturers will have to change their view of the competitive environment, however, is certain. The rise and fall of companies from other industries shows that forces in an ecosystem can change – keyword "Uber". New competitors such as Apple or Google have a crucial advantage over the established car manufacturers: They do not have costly manufacturing plants or rigid corporate structures that are geared to production. Instead, they have the latest IT technology such as the cloud and big data. This makes it considerably easier for them to adjust to changing customer interests, to which they contribute, so to speak.



Since its “birth” in 2007, Apple’s iPhone has changed our manner of communication completely (both private and business-related) and also the expectations of the customers, who today take devices that are easy and intuitive to use for granted. Apple has demonstrated how to design products and processes that fulfil these customer expectations.

Digital natives display different consumption behaviour

Therein lies one of the greatest challenges for the automotive industry: to adjust to the constantly changing customer behaviour and new customer expectations. The consumption behaviour of digital natives, also known as generation Y or millennials, is completely different from that of their parents. The car is losing its significance as a status symbol. You no longer have to own something in order to use it. The new motto is rather “sharing is the new owning”, as digitalisation and permanent access to the Internet make shared use so much easier. Never before has it been so simple to bring suppliers and consumers together to share articles of daily use, including cars. For customers, the focus will no longer be on the car in the future, but on mobility. Furthermore, customers will, of course, expect cars to also be part of the digitalised world, in other words to be equipped with integrated connectivity.

What needs to change? A lot. And fast.

What are the consequences for the automotive industry? It needs to take a step towards the customer. The entire organisation must be centred on the customer. “The main focus is on the customer” must not be just

an empty phrase any more. To achieve this, it is necessary to invest in digital technology and thereby create flexible IT architectures, the prerequisite for fast and proactive business with more customer-relevant products and services as well as shorter development and release cycles. The distribution of cars also requires a makeover – with a focus on mobility contracts, on-line sales and a repositioning of trade. What is needed here is not least a change in mindset of the established automotive industry and close cooperation with the digital industry. As one of the leading providers in the area of business and IT consulting with profound expertise in the automotive industry, NTT DATA can take on the role of intermediary here.



Vassilios Vlachos
Head of Business Transformation Consulting

#outstanding: My focus is IT strategy, transformation and change management. For me, consulting starts with active listening. In the context of transformation in particular, I consider consulting to be a partnership between customer and consultant.

Understanding the customer is not enough

Meanwhile, we have got used to lying on the sofa after a Sunday spent shopping and determining the exact hour our order will arrive. We can track the taxi we ordered to take us to the next restaurant on-line all the way to our doorstep and pay for the ride directly via app. We are fascinated by the fact that our laptop seems to know exactly what our favourite products are. All these experiences cause our expectations to increase continuously, towards the perfect customer experience across all touch points. Expectations that automotive manufacturers do not yet meet.

The customer expects more

The years of merely selling standardised vehicles as per Henry Ford are over. In order to stand one's ground in the current market environment, meeting customer expectations and, to an even greater degree, creating new needs is more than just a necessary condition: "A lot of times, people don't know what they want until you show it to them" – Steve Jobs realised this almost two decades ago. Automotive manufacturers cannot escape from this development if they want to even come close to holding their own next to the leaders of the on-line customer experience who are new to the industry and whose focus is not on the product, but on the customer.

This means that the entire organisation and corporate culture need to be designed with the customer at the centre in future. This reorientation towards the customer and service must be not only advocated, but practised by all organisational units and hierarchical levels. Digitalisation changes everything. It requires automotive manufacturers to make the transition to becoming mobility service providers that place their main focus on the customers and their desires. To put it bluntly, the paradigm shift is moving "away from motors and towards mobility". What will and has to change in practice? And how will the manufacturers manage to overcome this transition with all its challenges?

Knowing what the customer really wants

The starting point for all considerations must be the customers and their individual mobility requirements, not the vehicle. In order for "The main focus is on the customer" to become more than an empty marketing phase, manufacturers need to really get to know their customers. Nobody knows exactly what customers will

expect and consider to be everyday added value in the future – in some cases, not even the customers themselves know. However, it is possible to know what customer needs are highly likely to arise in the future. Automotive manufacturers must anticipate the customers' situational requests and identify solutions before the problems occur in the first place. For example, arranging an appointment to have the tyres changed is often a stressful situation for customers, as it is often the case that this tyre change should have been taken care of yesterday rather than today. Wouldn't it be useful if the vehicle reminded the driver that it was time to have the tyres changed, and the driver then only had to tap the screen of the infotainment system to make an appointment? In short: "Simple is the new excellence". (See box.)

Making good use of customer data

The prerequisite for being able to predict situational needs is to get to know customers by using data correctly and setting up a sustainable and adaptive analysis platform. Manufacturers already have access to a lot of relevant customer data that is provided via the vehicle or the dealer and available for analysis. Aside from the technically doable challenge of generating and storing as much data as possible in a short period of time, target-oriented data processing has not been defined so far. The manufacturers have not yet acquired the skill of transforming this data into an informative overall picture of an individual customer. It is no longer sufficient to know the customers' historical data; manufacturers have to be able to actually make use of this data by means of prescriptive analyses.

Integrating the customer

This is all the more important given that brand loyalty is no longer the customers' priority when hunting for the optimum mobility solution that meets situational needs. It is up to the automotive manufacturer to find new ways to retain their customers. First of all, this means that manufacturers must make interactive use of every instance of customer contact and create integrative touch points. Methods such as design thinking are used to develop creative approaches to interactive, informative and individualised touch points. First tests have shown that integrating customers in the internal product design processes for a vehicle has a positive effect on the market launch of the product. This applies not only to the product design process, but can also be transferred to

other touch points.

Nowadays, customers use information channels that are independent of the manufacturer to obtain information about products, see what other people think or share their personal opinion. So far, manufacturers have not set up a sufficient offer in terms of interaction platforms to attend to this need to share information. They are thus missing out not only on an important lever for customer management, but also on the possibility to track valuable customer data. For years, they

have been subjecting their customers to emotionally laden advertising messages. However, they are not succeeding in capturing the customers' emotions optimally and steering them individually through the entire customer life cycle. It is time to meet customers at eye level, to cater to their individual needs and create more transparency with regard to sales and after sales processes. This is the only way to involve customers in the long term, to tie them to a brand and to spark their enthusiasm for vehicles and services.

Simple is the new excellence

Ever since the triumph of the smartphone at the latest, connectivity has become a cornerstone of modern life. We expect to be able to access information and services on the go at all times – a wonderful world of convenience, provided that the technology works. But what was the password for the mobile app of my favourite pizza delivery service again? And what was the portal where you could switch to a different electricity provider? Did I download my favourite album from Spotify, or Deezer, or was it Amazon Music?

Customers are often overwhelmed by the density of information and the complexity of many communication platforms. This applies to all industries, the automotive industry included. Manufacturers who operate on a global scale have standards and processes that have grown over decades and revolve around one main focus: the car and its core functionalities. Traditional manufacturers are skilled with respect to topics such as the development of vehicle bodies or engine design.

It was only a few years ago that the topic of “digital customer experience” was brought to attention at the conference tables of the automotive manufacturers. Apps, customer portals and digital contact channels were subsequently docked to the manufacturers' established structures. It is therefore no wonder that customers experience disruptions on their digital customer journey time and again. In order to be able to use the functions continuously, customers are often busy with the administration of identical information in countless applications. This results in unnecessary complexity on the side of the customer. To address this problem, a holistic consideration of digital services is called for.

Do you want to win the race for tomorrow's best customer experience? Then you will need people who understand customers, stir up structures and have specialist process knowledge. We will put you in pole position by making you outstanding. Outstanding in terms of customer focus, product quality and economic yield:



Sebastian Dappa
Consultant, Business Transformation Consulting

#outstanding: I have a passion for connected car services and future retail. My work is based on customer-focused and concrete consulting.



Anja Oberhofer
Consultant, Business Transformation Consulting

#outstanding: I am a specialist for customer strategy and omni-channel management. I stand for forward thinking and a creative approach to consulting.



Verena Rupp
Senior Consultant, Business Transformation Consulting

#outstanding: I am fascinated by e-commerce, service management and customer strategy. I campaign for customer-focused approaches to solutions and cooperative consulting.



Alexander Wirtl
Consultant, Business Transformation Consulting

#outstanding: My areas of expertise are customer strategy, connected car and future retail. I have a profound understanding of customer needs in combination with knowledge of products and the industry.



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Connected car is the future

Automotive manufacturers are transforming into mobility service providers. Connected car services and apps are the prerequisite for being able to make the customer a holistic promise of mobility. This change is accompanied by a paradigm shift from “motor” to “mobility”. From “means of transport” to “living environment”. From “oil” to “update”.

Structure in the data chaos

In-car software and apps provide manufacturers with new information about the use and driving characteristics of their end customers. Cars are turning into a collection point for raw data. Aside from the technically doable challenge of generating and storing as much data as possible in a short period of time, target-oriented data processing has not been defined. Although manufacturers are aware of this, they are showing a lack of organisational, structural and systemic adaptation. This is necessary in order to transform findings into valuable services. To this end, data must be processed in three steps:

Defining and understanding the data base

The first important step is to take stock: Which data is gathered from which sources, and what is its quality of interpretation? The valuable information amongst the mass of data must be identified. For example, the rain sensor, the adaptive dampers and the stereo camera in combination with the rotational speed and GPS information provide data about the current condition of the road. A centralised data management system classifies the preprocessed raw data in terms of its information content and makes it available for further processing.

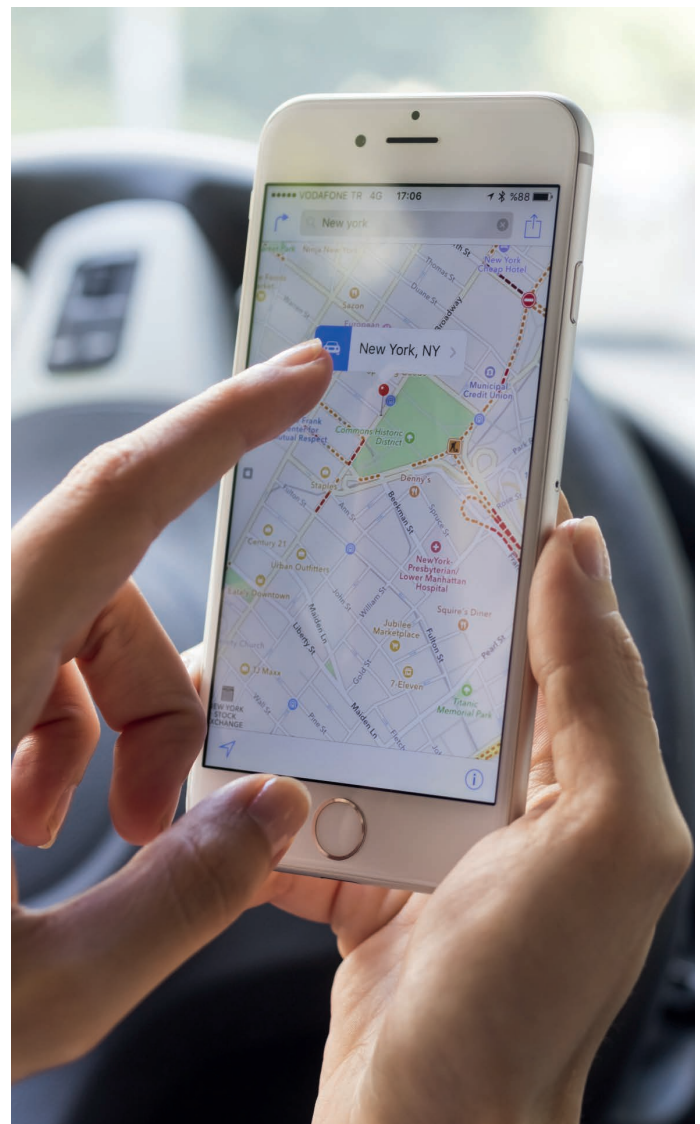
Defining use cases

The preprocessed data stock can now be used by different stakeholders. Marketing, for example, can segment customers on the basis of their driving profiles. This segmentation forms the basis for identifying customer-specific use cases, such as pothole warnings for sports drivers or fair-weather routes for people who drive convertibles. Here, the focus is on the end customer's view, not what is technologically feasible.

Processing data

Once the use cases have been defined, the relevant raw data must be combined, its frequency of collection must be determined and, if necessary, complemented with external data. GPS and rotational speed data can be used, for example, to determine the vehicle's position. Together with the stereo camera, the movement of the adaptive shock absorbers provides information on the

road surface condition. This data is then processed by the minute, allowing the driver and other customers to be warned about potholes in real time.



Differentiation through new services

Connected car services provide an excellent opportunity for catering to the customers' individual needs. They contribute to individualising and differentiating the mobility experience, and thus to customer loyalty. The added value for the customer increases if the booked service is available not only in their private vehicle, but also in the car sharing vehicle. Just like smartphones, cars are also turning into devices on which customers can use their services. While the importance of the vehicle itself is dwindling, the mobility experience is coming to the fore. As a result, it is advisable for automotive manufacturers to expand their competence profile to include holistic service management. There are three concrete fields of action here:

Building up a portfolio

To do this, manufacturers can either advance their service ideas towards market maturity on their own initiative, enter into targeted partnerships with third-party suppliers or integrate complete services into their portfolio. If customers are offered services that are important to them, they will be prepared to pay for these services and provide their personal and usage data to the manufacturer if necessary. This is the basis for the business model of the future.

Accelerating release cycles

If a service is relevant for the customer, it must be brought to market as quickly as possible. As smartphone users, customers are used to always being able to use the current version of apps, including bug fixes through updates. Manufacturers can cater to customer and market needs in a timely manner only if they develop their services in a need-based and agile way, contrary to the usual development cycles.

Establishing an ecosystem

Having the right ecosystem is a crucial factor when it comes to marketing services. The basis for this is a platform that also enables management of the services. This comprises version management, country-specific characteristics and software that is adapted to the vehicle's hardware. In addition, the platform must ensure that customers are approached and distribution is available via various channels such as the smartphone, the vehicle and the customer portal. Impulse purchases in the vehicle in particular (for example fair-weather routes when it is sunny) offer potential. Finally, seamless payment transactions and financial integration enable the monetisation of the services.

The new type of service – updates instead of oil

The trend towards the connected car and the associated expansion of the car's range of functions also affect the service. Its weighting is undergoing a fundamental shift. It is workshops that are responsible for servicing electric vehicles. Service requests for in-car software and connected car services, however, require IT skills – service requirements are increasing. This is the reason why service must be completely redesigned. The following three fields of action play a central role here:

Defining responsibilities

While the manufacturer sells connected car services directly and benefits from this, dealers come into contact with these services only in the context of customer complaints. Dealers therefore have no incentive to increasingly integrate connected car competence into their services. The question of who is responsible must be clarified in order to ensure a holistic support process for connected car services.

Establishing new roles

Traditional service is all about the vehicle. So far, qualification for connected car services plays a subordinate role for service personnel and processes. Usually, no contact persons have been defined, and employees lack profound knowledge that would allow them to help customers who are experiencing problems with connected car services. New roles are needed here: product experts become "service champions" and provide customers with all-round support for their connected car. The service champion undergoes targeted training, is certified and then positioned as an expert.

Enabling remote servicing

Given that e-mobility requires little maintenance, how often cars will have to visit a workshop in the future is a moot question. In contrast, connected car services and software require regular updates and bug fixes. The technical customer interaction centre must become the central contact point for making a remote diagnosis for the vehicle, transferring software updates, or solving simple problems via remote control.

The car as an office?

Connected car services can be booked on a situational basis, which expands the vehicle's range of functions. However, operating systems that are not yet fully developed and only partially autonomous driving currently still prevent the effective use of time spent in the car. The current motto is: "Don't text and drive" – in the future, it will be: "My car is my office". How will we get there?

Today, the vehicle's range of functions is being extended through external devices and services. Customers can partially integrate life and work content into the vehicle with vehicle-specific apps or by coupling mobile devices. The steady increase in display size is limited by the premise of not distracting the driver. Legal regulations, inadequate connectivity or existing vehicle architecture restrict the extension of the offer of integrated functions.

Tomorrow, vehicles will be adapted to their new role, which is to enable active communication with the environment. Working with external devices and mobile office services will be fully possible. Customers will then be able to exchange information via various displays and a 5G data connection while being chauffeured to their destination. However, legal restrictions and data and charging infrastructures that still have room for improvement prevent customers from working without distractions during their journey.

The day after tomorrow, the driving function will take a back seat. The fusion of vehicle and living environment will result in an expansion of the living and working environments. Fully autonomous electric driving will enable the unrestricted use of functions via various car screens as well as interaction with the environment by means of augmented reality. The vehicle will be a fully-fledged living room or office where all private and work-related data will be available at any time and independently of the location. Although many limitations will have been removed, two of the most important restrictions are likely to remain: security and privacy.

Are you in need of innovators and connected car enthusiasts who can turn mobility into an individual experience? We are at your service. We will make you outstanding. Outstanding in terms of customer focus, product quality and economic yield:



Christof Kleinhenz
Head of Digital Mobility, Business Transformation Consulting

#outstanding: "From moto to mobility" – that is what I believe in. I provide customers with results-oriented support for developing customer-relevant mobility solutions and services. I stand for authentic consulting from strategy to implementation.



Martin Müller
Senior Consultant, Business Transformation Consulting

#outstanding: I am passionate about the digitalisation of sales and after-sales processes as well as innovation management. My work allows me to combine creativity and methodology, and I understand consulting as teamwork that takes place at eye level.



Thomas Unger
Senior Consultant, Business Transformation Consulting

#outstanding: I am an expert in digital services who specialises in consulting projects with a focus on the end customer. I always take a customer-oriented approach to consulting.

The future of engineering and production

The shift to becoming a mobility provider requires all processes to be adapted, from portfolio planning to development and all the way to production, distribution, service and customer support. The transition to customer and service orientation also includes changes to the product creation process. Developing a vehicle that is the epitome of an intelligent product presupposes a change towards distributed, system- and function-oriented development networks.

The seamless integration of and cooperation between continuously growing electrics/electronics and software scopes together with the mechanics is an important key to innovative ability. New processes, methods, technologies and organisational measures are necessary to cope with the flood of data in portfolio planning, pre-production series and series production. Today's value creation and enterprise architectures show hardly any consistency with the interdisciplinary ideation, development and digital validation of the vehicle in the life cycle and until the end of life. It is to an even lesser degree that structures and IT solutions take into account the intrinsically consistent creation and administration of services. The following fields of action play a central role here:

Systems engineering

The systems engineering approach describes the interdisciplinary, consistent use of digital models in the phases of requirements definition, system modelling, detail development and digital factory planning. This ensures the increasing integration of electronics and software as enablers for tomorrow's services.

Service and security engineering

The service engineering approach extends systems engineering to include aspects relating to planning, designing and validating services. The requirements are to be transferred, for example, to components, control units, back-end systems and front ends. Going beyond consistent processes, methods and applications, it is also necessary to create roles in development: the engineering "service champion" is responsible for end-to-end services, functions and the associated security.

Digital process chain

The digital image of a product includes a consistently integrated simulation of mechanics, electronics, software and sequences in a bundle of services. Integrating grown maturity levels of virtual and augmented reality technologies provides insights at an early stage, thereby allowing the customer experience to be optimised.

Design for X in Impression 4.0

When the data base between engineering, production, distribution and after sales is enriched with additive manufacturing processes, this gives rise to innovative approaches with regard to personalising the vehicle. New business models with engineering services for the customer are generated on the way to batch size one.



Tobias Häuptle

Team Leader, IPLM & Digital Factory, Digital Enterprise

#outstanding: To me, consulting is characterised by specialist knowledge, honest customer orientation, high-quality results and cooperation that is based on partnership. Innovation arises from a dynamic and active team – curiosity and authenticity are essential.

Realistic delivery times through dynamic production planning

Customers expect to be provided with information as soon as it becomes available. Customers do not wish to be informed of the exact delivery date for a vehicle just shortly before the delivery. They are even less willing to excuse delays due to changes to the vehicle order or loss of production. To change this, production planning, which is often very static, must become dynamic. This requires using Industry 4.0 methods and big data.

Planning is already highly optimised today. The methods, usually integral optimisation problems, are known, and the numerical algorithms used to solve them are reliable and have proven themselves. What is known as manufacturing intelligence, a system of key figures that is created and monitored consecutively and in real time, is used for the analysis. Nevertheless, costly production stops occur time and again. Aside from external influencing factors such as power outages, the question as to further causes and ways to prevent production stops arises. Adaptive manufacturing is to be used to adapt control. The focus here is on the increasing availability of information in real time. The actual condition of the production sequence can be compared to corresponding threshold parameters in near real time.

One of the central questions in this context is the analysis of the influencing factors. Usually, it is not individual factors, but rather the interaction between different event conditions. A production line consists of many successive, often grouped, work steps. The average times for the work steps have been recorded and form the planning basis. The fluctuations between the real values and the planned average values allow conclusions to be drawn. However, the individual workstations are usually not equipped with a direct time recording facility. It is therefore necessary to search for further data. Machine-generated sensor data (rotational speeds, electric motor currents, speeds) that record precise changes are the most suitable. This data is highly structured, which is why it constitutes an excellent calculation basis.

The aim is to arrive at an adaptive calculation system to diminish the gap between static planning and dynamic production. In terms of methodology, it is not enough to predict an outage. In order to be able to

take countermeasures, it is necessary to identify the changing influencing factors. Usually, the correlations can be verified only mathematically and are not immediately visible, which is why they must be determined first. They then serve as the basis for a “near real time” simulation and can be used for active controlling measures. Thanks to the latest big data technology and open source software, the performance required for the calculation can be reached easily. One factor has proven relevant for success in this context: the temporal and causally logical correlation between the original data. It is not possible to create a simple time slice. This is why it is necessary to model the loss rates as a function of environmental impacts. This is a very challenging process that must not be based on the planned average values, as these correspond to actual reality only by coincidence. Planning is designed to be robust and includes uncertainties that must be accepted consciously. Close cooperation with production planning and production control is therefore required in the context of such a project.



Michael Wegenaer-Schuchardt
TTeam Leader, Advanced Analytics

#outstanding: I stand for analytical solutions that can be implemented in practise, and my aim is to enable comprehensive use of industry experience.

Digitalisation needs a strategy

Be it the Internet of Things or Industry 4.0 – digitalisation is not a trend that will pass. Automotive manufacturers who do not want to give up the market of the future to the software companies need to radically rethink and move away from being a pure “manufacturer of wheels” and towards a provider of holistic mobility solutions. To do this, car makers need to digitalise not only their value chain, but also their products and services.

Successful digital transformation with NTT DATA

How can this much-needed digital shift succeed? Success factor number one is a holistic strategy that is tailored specifically to the company. NTT DATA supports automotive manufacturers and suppliers with regard to the four fundamental elements of digital transformation:

- **Customer excellence.** NTT DATA is familiar with the customer journey of the automotive industry. This knowledge allows us to provide optimum support to our customers and their end customers on the way towards digitalisation.
- **Digital value creation.** NTT DATA is very familiar with the automotive business processes and speaks the customers language. We plan and implement IT solutions that generate added value.
- **Data-driven enterprise.** Not only can NTT DATA manage the huge volumes of data generated as part of digitalisation in terms of quality and security, but it can also optimally analyse it for the purpose of business-critical decisions.
- **Agile IT.** NTT DATA's way of working is characterised by creativity, flexibility and agility. We know from experience that the continuous adaptations necessary for successful digitalisation require efficient co-operation as well as integrated solutions and methods.

Mediator between the industries – for a holistic mobility solution

We understand the industries, but also the interaction between the various industries – automotive, telecommunications, energy suppliers, banks and insurance companies. This enables us to create a holistic mobility solution. Why? Because we are a business and IT consulting company and as such have been deeply rooted in these industries for over 45 years. NTT DATA accompanies automotive manufacturers and suppliers on their journey to the new digital age and supports them in all areas of digital transformation – from revising business models and digitalising processes to establishing and operating integrating IT platforms. We make our customers outstanding – especially in terms of customer focus, product quality and economic yield.



Dr. Florian Gerhardt
Head of Digital Enterprise

#outstanding: My focus is the combination of strategic and specialist consulting and the agile implementation of PLM, customer journey and connected car solutions. We are your end-to-end partner. We are passionate about your digital transformation.

#outstanding

About NTT DATA

NTT DATA is one of the world's leading business and IT consulting companies with over 100,000 employees in 40 countries. In the EMEA region, we have more than 14,000 employees with the personality and passion for IT on the ground for our customers. As a global innovation partner for our customers, we combine global reach with local proximity that is closely interconnected with our innovation centres.

We accompany our customers on their journey to becoming a digital company. Our portfolio includes business and IT consulting, system integration and application management services. Our technological leadership is paired with a deep understanding of our target markets: automotive, manufacturing, banking, insurance and telecommunication.

We make our customers outstanding – especially in terms of customer focus, product quality and economic yield.

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