TREND STUDY

THE CUSTOMER DIALOGUE OF THE FUTURE:

OMNICHANNEL MANAGEMENT IN THE LOGISTICS INDUSTRY

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In cooperation with:

DB SCHENKER

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Dear Readers,

Your industry, the logistics industry, is on the threshold of a period of sweeping change. Technological developments are changing both the lives and the working environments of your customers. The ever-presence of the mobile and stationary internet has led to a transformation in customer behavior. Logistics providers are now facing new demands from consumers regarding customer dialogue and service.

Digitalization, automation – and soon also autonomization – will characterize production and logistics processes in the year 2025. Logistics processes will become more efficient, as will also personnel management and the customer experience. The changes in the logistics industry will be driven not only by new technologies such as 3D-printing, drones, and autonomous systems. Changing customer requirements – and those players who respond in a timely manner with new business models – will also push these trends along.

Thus new digital players will occupy important strategic customer interfaces. At the present time all companies, across all industries, whose business in the mass market is based on strategic access to interfaces with the end consumer are facing a powerful challenge. These companies are being presented with entirely new requirements on flexibility and agility.

Many companies have long provided their customers with a great number of communications channels. This step toward multichannel management was necessary, but insufficient in the long run. Logistics companies are facing the challenge of coordinating and integrating communication across all channels, across all sectors, and across all phases of sales and customer management. This omnichannel management, taken to its logical conclusion, will thus change far more than merely the immediate interactions in your customer care. Omnichannel management means nothing less than placing the customer into the midpoint of communications and of your entire business model in a completely new way.

Our new study, "The Customer Dialogue of the Future: Omnichannel Management in the Logistics Industry," reveals how the omnichannel approach will change the experience of customer dialogue in the future, how logistics providers can establish future-proof omnichannel management, and what organizational and structural consequences this will have.

Logistics has a great future – even though this will look very different from its past. The study presented here names the significant strategic drivers for the future of your industry. It explains which players will drive which trends, and for what reasons. From the roadmaps, plans, and expectations of the major players involved, a picture of the future of your industry emerges for the coming five to ten years. And, based on concrete strategic options, our study shows what steps logistics providers must take to establish their omnichannel management systems of the future.

The trends described in this study are to be understood as long-term aids for strategic orientation. Be skeptical, however, of trend studies that forecast that your industry will change completely from one day to the next. That is pure nonsense. Most logistics companies will be able to continue with their current businesses for many years to come – with steadily decreasing revenues, of course, but continue nonetheless.
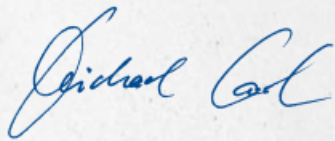
The present study represents an invitation to the industry to develop approaches to the future in manageable pilot projects parallel to the slowly declining classic logistics business and thus, step-by-step, to generate more profit than is lost by that existing business. This study is a handbook for determining the future. Your success in doing this – or lack thereof – will decide whether you will number among the winners or the losers of today's trends in 2025.

Due to our cooperation with DB Schenker, we are able to present this study to you free of charge. Please do not hesitate to contact us or our partner if you would like to use the results of our study to review your strategies. We would love to help.

We expressly wish to thank our cooperation partner for their kind and constructive help. They enabled us scientists to undertake an independent and unbiased analysis of the future trends. We wish ourselves and our readers the same open-minded approach to the challenges of the industry, as well as an awareness that, as we plan our futures, we can only influence change by actively shaping it.

Make your company future-proof! We would be delighted if this study helps you to do so. We wish you an inspiring read ...

... and a great future!

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Omnichannel management for logistics – The future of customer dialogue in the logistics industry

We are all experiencing a far-reaching transition due to digitalization. Today our everyday experiences are changing very rapidly. We are in a position to configure a significant portion of our everyday routines on our smartphones, whether it's the remote control of home heating, the purchase of a train ticket, or setting up an optimum exercise plan for the week. We will soon have three-dimensional printing, our packages will be delivered by drones, and self-driving automobiles are likely to appear on our roads not long from now. Trend researchers say that this is only the beginning, and that the world will continue to change at an ever-accelerating pace. These changes will not spare companies; rather, they will force them to face entirely new challenges.

Deutsche Bahn* has engaged with these topics and is currently working on more than 150 projects within the framework of our digitalization offensive. In this respect, future scenarios have been developed and evaluated for moving both passengers and freight, for rail infrastructure, and for IT as well. Of course, logistics also has to be included. Within the scope of the innovation offensive known as Logistics 4.0, DB Schenker is developing solutions for the optimization of transportation through digitalization. For example, even today containers can be tracked by satellite. But will the container of the future be networked and find its own way all by itself? Additional solutions such as self-driving transporters in the warehouse of the future, and even automated rail traffic, are also under the magnifying glass.

But what will be the effect of these changes on customer dialogue? In particular, what must we do to satisfy the expectations of tomorrow's customers, and what exactly will these expectations be? What communication channels will have to be employed in which ways? And how will they be networked? Everyone is talking about omnichannel management, but what does this mean exactly? How will our customers of the future want to enter into dialogue with us? And how much dialogue is still needed whatsoever, what will control these devices automatically and autonomously in the future, and who will tell the devices how and what to do? And finally, what does all this mean for the organizational structure of a logistics provider? What will sales have to look like tomorrow?

These were the questions we posed at the beginning – but in the meantime we have learned that much more is involved. And also: what opportunities will appear for logistics due to the increasing phenomenon of digitalization. The magic word here is connection, and it is the key for a successful business model in the future.

To remain successful in the market of the future, it will be necessary to construct a genuine omnichannel management system. Customers expect to be able to contact their logistics providers anytime and anywhere, and specifically over the channel most convenient at a given time. This means that the logistics provider must maintain all information on all channels with the same configuration and quality. And the available information will have to be networked.

An additional essential finding is that we will have to invest in future-capable IT systems more than ever before. And specifically in numerous, smaller solutions which are intelligently networked. If the logistics provider succeeds, as a coordinator, in organizing the flow of information along the logistics chain between all players involved, then new business models will appear. These opportunities will increase with the demands by customers for adaptive products, since ever more players will be involved in the process and will have to be networked together. The prerequisite for this is to have command over one's own gold mine: The data relating to the end customer and to the players involved throughout the supply chain.

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Connection is also an important factor in the organizational structure of the logistics service provider. Instead of impermeable linear functions and a silo mentality, interdisciplinary teams are needed which always have the customer in view. All departments – marketing, sales, customer service – will manage the customers together. Customer requirements will thus always remain the central focus in the organization of customer dialogue.

Business models will have to change, and the trick here will be recognizing the key challenges and adapting your organization accordingly. This is also the goal of our cooperation with the 2b AHEAD ThinkTank: not to say what the (logistics) world will look like in ten years. Rather to understand what trends will most likely emerge, who will be driving innovations, and where new attackers will appear. The present study provides a clear picture of where the journey is headed and what guideposts will have to be set in time. Whether we succeed here or not is something that the future will reveal.

We also wish to express our gratitude to the 2b AHEAD ThinkTank for their constructive and cordial cooperation. In addition, by our involvement we hope to have enriched the discussion about the future of the logistics industry, and in particular of customer dialogue.

We wish you an inspiring read!

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OMNICHANNEL MANAGEMENT OF THE FUTURE

The starting point for this study is our finding of just how fundamentally the communications needs of customers in the logistics industry have been transformed by the continuing process of digitalization. The customers' expectations for their logistics providers have increased; their needs have expanded. New communications channels, points of contact, and types of data are emerging continually – promoted by the progressive digitalization of all areas of life, by the comprehensive networking of mobile and stationary everyday objects, and by technologies such as intelligent sensors and smart forecasting – and new ones will surely follow. Customer confidence is shifting in large chunks toward digital assistance systems. Management of these channels and points of contact will be decisive in the future for the success of a company; this will change and characterize business models, organization, and products. And this also applies to the logistics industry.

This change in customer requirements leads directly to the necessity for omnichannel management. Customers in the future will obviously expect to function in an environment that allows them to begin dialogue with a company at any time and over any channel of their choice. All customer dialogue should be consistently attended and structured throughout its entire course and across all points of contact. Seamless communication over all communication channels will be increasingly expected as normal, and will require not only new IT-structures, but also an organizational restructuring of the logistics provider. The players in the logistics industry who do not adjust for this changed customer expectation will be at a considerable disadvantage in the future.

These customer expectations are at the same time highly differentiated. The omnichannel approach is based on a differentiated view of customers.

Traditional customer segmentation across industries is insufficient given the increasing differentiation of needs and products and a broad opening up towards new customer groups.

The present qualitative study examines the effects of technological developments and of changing customer expectations on the business models and organizational principles of logistics companies. The study concludes with strategic recommendations for implementing a future-proof omnichannel management in your logistics company. This is because the omnichannel approach opens up new product opportunities for all market participants. Logistics providers must respond to these changes: The market is already in motion.

The foundation of this study is interviews with experts, strategy consultants, and innovators of the logistics industry. The study is oriented toward the Delphi method, a well-proven method for scientific future research. The method uses the basic insight that the future of our living and working environments is not characterized by abstract megatrends, but rather quite concretely by the business pathways taken by innovative decision-makers. More precisely: by those driving players having not only an expansive vision but also access to the market so as to place their innovations with the customer and in this way to fundamentally change how entire markets function. Our goal as future researchers is to observe and to analyze this transition and to condense it into a picture of the future from which strategies can be derived for taking action today.

TREND CYCLE ANALYSIS – NOT MEGATRENDS

This is not a study on megatrends. Those who work with megatrends do so on the assumption that there are a limited number of drivers that affect all business areas equally. This is wrong. Trends exist only because industry developments are driven forward or blocked by those individuals who have the resources or authority to do so and to lead others in doing so.

Human behavior – and thus also investment decisions – always follows specific interests, desires and compulsions. These vary by industry and by industry sector. We trend researchers are able to observe this behavior on the part of decision makers; we can try to understand it, we can analyze driving and blocking factors, and we are able to generate forecasts regarding where this behavior on the part of industry players will lead. In the sciences, we call this "qualitative research." The following study is based on this approach. Compared with other industry studies, you will find no lists of percentages in the following pages. Futurists know that the future can neither be measured nor quantified – because it has not happened yet. For the most dead-on forecast possible regarding what will happen in your industry in the years leading up to 2025, no representative survey of customers or so-called experts will help, no matter how large-scale it may be, because no matter how many you might interview, they also cannot know what will happen.

The only possible way to come close to a reality that is still in development is to speak with trendsetting companies and industry players who are driving the technologies and trends that we will all meet in the future by the decisions they are making today, because you can talk to these individuals. Furthermore, you can try to understand their motives and compulsions. You can find out about

their expectations and roadmaps for the years to come. Where the statements of these players intersect, we can see those trends that are being pushed – or blocked – most forcefully. This provides the basis for the most realistic picture of the future of your industry that researchers could possibly offer you. You will find this picture on the following pages.

The trend research institute the "2b AHEAD Think-Tank" specializes in the identification of drivers and blocking factors, the analysis of opportunities and risks, and the development and implementation of business models for the future — all individually tailored to the trend cycle of specific companies. This last feature is important because the players who have a decisive influence on the business of their organizations vary from company to company. Thus the trend drivers and blocking factors, as well as the opportunities and risks, also differ between companies – even within the same industry.

Those who handle their future responsibly will not run after the one-size-fits-all megatrends of supposed trend gurus, but will base their strategies on the goals and the road maps of the leading attackers and defenders in their markets. This is our mission. We would be thrilled to hear that this study has helped you succeed there, too.

THE DELPHI METHOD AND QUALITATIVE EXPERT INTERVIEWS

The present study is a qualitative empirical study using the Delphi method. This method is a method for future studies that takes its name from the famed oracle of ancient times. It was developed during the middle of the last century in the US and is used for generating forecasts. Because hardly any expert in these complex times is able to successfully observe several mutually influential fields of expertise at once, Delphi-method studies draw on the assessments of several experts, each with his or her own specialist knowledge. The interviews are conducted using a two-stage process.

During the first phase, the experts are asked individually to give their personal assessments on specific topics during the course of guided expert interviews. During the second phase, in contrast, they are presented with the collective results of the first round. The experts are then asked to hold to their positions from the first phase, or to integrate the results of the first phase in a revised assessment of the subject matter.

The selection of the expert participants is particularly important for this scientific approach to trend research. For this reason, the so-called "trend cycle" is compiled using a workshop format after an extensive desk research phase covering previously published studies related to the topic. The trend cycle constitutes a list of all of those companies within and outside of the industry whose resources are sufficient to ensure that the strategic decisions they make today will have a significant effect on the future of their industries, either because other players are sure to follow their example, or because they can successfully push their business models because of the influence they have over the market. One expert was chosen out of each relevant group of industry players who did not merely speak about his own company, but was also able to give an overview of his group.

The pool of experts consists of key players from the logistics industry, technology providers, attackers from outside the classical industry, and influential business customers.

In both interview waves, the experts' investment decisions, business expectations, and statements on industry trends were analyzed and evaluated using guided expert interviews as a foundation. A total of 14 experts were chosen. The experts were individually confronted with various theses and asked to give their estimations regarding future developments. The expert statements subsequently underwent a qualitative analysis and were divided into four trend areas. These trend areas compile the essential statements given by the experts regarding omnichannel management in the logistics industry.

To conclude the study, strategic options for logistics companies were derived from the trend areas. These recommendations are based on a synthesis of the exploration of the trend areas, the statements given by the experts and the future scenarios built on those statements, and, finally, the expert knowledge of the 2b AHEAD ThinkTank in innovation management strategies.

HOW WILL LIVING AND WORKING ENVIRONMENTS CHANGE BY 2025?

The living environment facing customers in 2025 will be shaped by various factors. The average life expectancy in Germany, for example, will exceed 85 years and tend towards 90. In many families, celebrating the 100th birthday of a grandparent will have become a normal occurrence. Even among other families, the question will arise: What will people want to do between the ages of 60 and 85? Vacation? Work? Most are sure to experience a sort of new beginning as they enter the third active segment of their lives between 50 and 60. The phrase "new beginning" is meant literally here: a new job, a new home, a new life partner ... active living will continue at that point. The arrival of retirement age with its reduced mobility and activity will be pushed even farther back. People will half want this in order to spend those 30 years in a meaningful way, and they will half be forced to it in order to avoid the very real threat of old-age poverty.

The world economy will be increasingly dominated by Chinese players — not only in the mass-production industry, but also in the areas of commercial innovation and conceptual design. Asia will gradually grow out of its role as the region of discount labor, and will begin looking for its own cheap staffing opportunities in Africa: first in Northern and Southern Africa, and years later also in Central Africa.

In Germany as well as internationally, people are streaming from provincial areas into major cities. Rental costs are rising in the booming metropolises while rural areas are slowly being abandoned. Germany, in the meantime, will experience a long-predicted transformation: We will then live in an era of full employment where every halfway qualified person has a job. Not only that: Headhunters will begin to show up at the door, because there are approximately 3-4 million unoccupied positions in German companies. The companies themselves will see this as a catastrophe. Not so the employees:

They will have the upper hand in the employment game for the first time in decades, and thus can freely choose the jobs they want. This trend will push salaries upward, but will also be cause for the fact that roughly 40% of the working population will change projects – and companies – every 2-3 years as so-called "project workers." The short supply of personnel will also compel the logistics industry to develop and communicate its attractiveness as an employer in new ways. On the other side of the equation, automation and digitalization are leading to the disappearance of occupations which were still considered future-proof a few years back. As a result of this, the job profiles for needed candidates will experience an academization. Also, many classic skilled trades will be substituted by machines, and those that remain will become simpler. Also, most employees will need to be more intensively trained in information technologies due to the fact that the increased use of digital assistants will open up new areas of responsibility and occupations.

Against this background, some of the fundamental values of our society will be redefined: Security in life will remain important, but will become linked to new factors in the face of constantly available new jobs. Trust will remain important, but in the coming times of greatest possible transparency will not simply be handed over to major brands, but will have to constantly be tested. This will also affect the ways in which logistics companies communicate with partners and customers.

People will experience their personal health as the greatest luxury of the future. Thanks to all varieties of body enhancement, health will increasingly become a purchasable consumer good: Medical nutrition will eliminate most illness in society; brain food promises us the optimization of our brain functions as needed. And: The emerging production of human organs as replacement parts will lead to further increases in life expectancy in the luxury segment.

The greatest change, however, between now and 2025 finds its cause in the rapidly expanding phenomenon of digitalization. In the future, this trend will permeate every aspect of human life with information and communications technologies. Ten years from now at the latest, over 95% of the adult population of Germany, Europe and the United States will regularly use the internet. One striking trend in this regard is the fact that, even from 2015 onwards, more people will use the internet via mobile terminals than through stationary systems.

Business strategies, however, have for some time now ceased to focus on smartphones and PCs. The successors to iPad & Co. will go by the names iTable, iWallpaper, iMirror, iCar, iWindowpane, iDresser, i-ICE-Seat, and so on. All objects that can successfully be digitized will gradually be converted into internet devices. In this regard, futurists speak of the "Internet of Things." This entity will not only encompass the family home, but also the entire city and the entire world. The time will come where every object will have an IP address. The new volumes of data supplied by the Internet of Things will also open up vast opportunities for logistics providers along all stations of the business model.

Information flow and the synchronization of stationary and mobile devices will become wireless, and device control, through the use of sensor and gesture control systems, will increasingly adapt itself to (human) inter-personal communication. Logistics companies in the future will need to find ways to integrate these new forms of interaction into their customer dialogue. The futurist of a large mobile communications company has said: "Today, when I go into a hotel room, I have a screen on the wall, a telephone, and internet access. In four to five years, I won't receive a room key anymore, but rather a code that will be loaded onto my phone. The moment I open the door, the room will recognize my device, access the internet, and present me with all of the possibilities the world of telecommunications has to offer." Already in use today: biometric procedures. Vein scanners are using the unique vein structure of the hand to produce a secure and copyproof key.

Simultaneously, flat-rate telecommunications packages will guarantee the rapid expansion of this trend. Its key industry drivers will be the telecommunications companies, for whom mere datatransfer services will be a minor concern in the future. Data transfer itself will be sold as cheaply as possible, so that business models centered on apps and mobile commerce can truly boom. Companies must prepare for the time when both they and their customers will have permanent access to the internet from virtually everywhere. Thus every touch point will become a point of sale. This trend represents both a great opportunity and a great risk.

THE TECHNOLOGY KNOWS THE CUSTOMER

The emerging internet devices (on mirrors, tables, cars, walls, windows, etc.) will, however, not become computers as we know them. This is because new user-friendly concepts for product operation and new human/machine interfaces will develop. The iPhone and iPad introduced touch control. The next step, gesture control, which does not even require contact with the device, was introduced mainly by Microsoft. At the moment, Apple and Google developers generally prefer speech control systems. Both gesture- and speech control systems will exist in 2020. After 2020, these control methods will be replaced by thought control systems (brainwave recognition), which today still sounds futuristic. This last type, in the meantime, has already definitively outgrown the science-fiction stage, and in the coming years will become an increasingly commonplace component of everyday digital assistance systems.

Emotion recognition will find its way into our devices even before the advent of thought recognition systems. In this control method, devices recognize the emotions of their owners and can react appropriately. A car, for example, would correspondingly exhibit a different driving style when its owner is stressed and tired than when she is rested and relaxed at the wheel. Experts estimate that emotion-recognition systems will enter the luxury market in 2015 and will expand rapidly into the mass market from there. This development will owe its speed and momentum to Moore's Law – just as valid today as in the past – which dictates that the processing power of electronic chips doubles every 18 months at the same price. Also influential in this regard will be the large price drop for sensor technology, thanks to which sensors of all kinds will be mass produced in gigantic quantities. The technological hurdles for an automated and individualized customer sales pitch will largely disappear.

Companies will have to prepare themselves for the time when electronic devices will not only recognize individual customers, but also their current state of emotions, sensitivities, and bodily functions. Consumers will grow accustomed to communicating with their devices in a "human way": through language, facial expressions, gestures, and later even thoughts. They will also get used to the fact that technology will be capable of assessing their present situation and reacting to it successfully – within fractions of a second. Electronic devices will thus become "more human" than their human counterparts, because they will know much more about their counterparts than the average stranger would! This presents a great risk for human experts and sales representatives, but also a great opportunity for those who know how to use the technology competently.

SYSTEMS ARE BETTER THAN SALESPEOPLE ... THEY REMEMBER YOU!

Indeed, the additional benefits of connected devices in the future will not come about by means of data as we understand it today: those statistical heaps of data now lying in databanks. Our present conception of data will change. The intelligent compilation and evaluation of information on users' dynamic data will become part of our future understanding of data. Object recognition, image recognition, and observation-capable interfaces will guarantee that in the future, everyday objects will observe the behavior of their users, combine this real-world data with stationary information stored via the Cloud, and produce unique and situation-appropriate prognoses regarding the current needs of the user through automated algorithms or business intelligence systems — always accurate down to the second. It remains to be seen to what extent these devices will require an intelligence of their own or will function as part of a "smart grid" through which they are controlled situationally, yet also centrally. The question of "data" in 2020 will have little to do with the definitions we are accustomed to today. It will mainly be a question of the recognition of the user's needs ... and the prediction of her desires before they have reached her lips.

SMARTPHONES AS INTELLIGENT ASSISTANTS ... THE COMING TRAFFIC-LIGHT SOCIETY

In spite of the rapid expansion of smartphone use and the resulting opportunity for consumers to use all new apps available, one basic truth of technology- and media use cannot be ignored: Only a small percentage of us are highly active users who seek out, try, and use new applications on our own intiative. The vast majority of the world's population remain couchpotato consumers. This leads to problems when today's apps require active intervention and input by the user. The result is this: Even when the vast majority of users own devices that have apps on them, this in no way means that these apps are being used.

Therefore, systems that operate without active user control will represent an important market for the future. They will "monitor" their owners during their everyday routines, analyze the data, prepare requirements profiles, and then permanently filter their owners' environment based on these profiles. They will get their "intelligence" from an automated exchange of data with other nearby devices. In this way they will place(unprompted) recommendations

into the user's field of view when she is presented with an everyday situation which requires a decision. Technology developers do not describe these assistants as a program, but rather as a conglomeration of numerous individual programs. Much of the needed data will be obtained from the user's routine movement patterns, and these patterns take into account her recent locations, internet history, and the like.

WE WILL SOON HAVE SMART TECHNOLOGICAL ASSISTANTS THAT OWE THEIR INTELLIGENCE TO DATA GATHERED FROM THE CUSTOMERS' EVERYDAY LIVES

At the same time, we will experience a paradigm shift in the realm of data protection. Naturally, all of the predictions mentioned so far will only take place if people release their personal and user data for this kind of analysis and prognostics. This is highly probable. For, even today, we experience the same patterns and strategies when we move in the computerized world of the internet. Even there, the security of our data is undergoing a major paradigm shift. The assumption that private citizens do not want to release their data is 1980s thinking. Today's population lives in another world. It does not want to keep its data secret! We want to release our data! Data protection will become more important in the future, but also different. The data protection of the future means that the consumer can view, change, and delete the data saved about her with a single click. There will be a system in place that ensures this. Companies that have the trust of their customers as "trust centers" will have the best chances strategically. No company really wants to annoy its customers with mass advertising that scares off 90% of recipients and is useful only for the remaining 10%. However, in order to filter out this 10%, companies will have to evaluate consumer data. And for that, they need the trust of their customers. Customers will understand this, because life is much more comfortable when one only receives the right kind of ads.

Companies will have to adjust their strategies for the "traffic light society" that we will be living in by 2025. Their customers will have grown used to having an electronic assistant on their smartphones for every area of life that gives suitable advice, product evaluations, and tips for every possible situation. Customers, however, will not want to receive all this virtual information as rows of digits or mountains of text.

They want to be told: Is this the right product for me, or not? Is the traffic light red, yellow, or green? In most cases, your customer in the year 2020 will trust her smartphone more than human salespeople. This is a good thing, because the smart phone will give her better answers! The competent vendor of the future will have to make sure that his product will stand very high on the customer's list – and very "green" in her traffic light ...

NEW PLAYERS GROW MORE POWERFUL

There is another technology trend that will probably have a greater impact in the future than any other: In the years to come a breakthrough is expected in mobile payments. This means: The smartphone will become a means of payment! Step by step it will replace cash, but will also replace debit cards and credit cards. Different technologies for mobile payments offered by different providers will operate side-by-side. This strategic power will rest with any company that owns the technology interface through which the payment flows. Currently, three main technologies can be seen in development: First, there are the so-called smart cards, the successors to credit cards, which are swiped through an attachment on the user's smartphone and pay via app. This technology leaves the power over customer data with the credit card companies. Second, telecommunications providers are working on a payment system of their own that charges payments to the user's phone bill. The power over customer data in this case lies with the telecommunications companies. Third are the NPC chips mentioned earlier, which are already being built into the first smart phones. These could potentially place the power over customer data into the hands of the smartphone manufacturers.

LOSS OF SIGNIFICANCE FOR SALESPEOPLE ... THE DEVALUATION OF THE EXPERTOCRACY

Let's not beat around the bush: These digitalization trends hold not only great opportunities, but also major risks for today's companies. When we look back from 2025, there will not only be big winners in the digital world, but also large numbers of losers as well. For what can sales staff do when customers know better via bar-code scanners and Amazon if a particular product is right for them, how other customers have rated it, and if they can get it cheaper around the corner? Today's expert, tomorrow's cashier!

And this will not only affect salespeople. What can teachers do when their students know more than the department of education requires by reading eBooks? Today's expert, tomorrow's reciter!What can craftsmen do when homeowners no longer seek advice on heating their houses, but simply hire craftsmen to install heating system X – which the internet says is the best? Today's expert, tomorrow's henchman! What can tour guides do when there is always someone in the group who has more to say about the history of local landmarks – thanks to his smart phone – than the guide could ever memorize? Today's expert, tomorrow's chaperon! What will real estate agents do when their clients receive an offer for their dream apartment automatically in their glasses when they cross the street? Today's expert, tomorrow's doorman!

In the next few years, we will experience a devaluation – a loss of significance – of the expertocracy that will radically change large segments of our economy and open the way for new markets. Because: Those experts who characterize our world today will have to ask themselves the hard question: Can my expertise be offered more quickly and more custom-tailored by software in the future? Salespeople who do their work simply in terms of gathering, compiling and passing on data ... will lose. Their share in the market will go to electronic assistants.

But this is no reason to stick our heads in the sand. On the contrary: Those who actively use this trend in their work will be among the winners in tomorrow's business. The more competent companies who know how to use the capabilities of digital devices for themselves as electronic assistants and, at the same time, are able to offer their patients and customers services that digital devices cannot, will have an advantage decisive for future success.

HOW NEW TECHNOLGIES ARE CHANGING THE LOGISTICS INDUSTRY

Automation, digitalization, predictive applications – we are living today at the beginnings of the fourth industrial revolution. It is being fueled by the rapid pace of technological development. Experts agree that, in the new future, there will only be a few processes in industrial production and logistics that cannot be automated. Numerous processes will be digitized and automated, and will thus become predictable. The most important drivers of this development are the customers' desires on the one hand, and developments by innovative companies like Apple, Google, or Tesla on the other. With these innovative developments, they are setting new standards and thus driving the development of the markets.

In the field of robotics, technology has recently advanced to such an extent that tasks for which automation was thought to be impossible a few years ago are now routinely handled by machines. More accurate sensors, robots possessing a sense of touch, or precise picking robots in commissioning are taking over the tasks of human workers in more and more areas.

ROBOTS PACKING PACKAGES

The Robot Programming Suite (RPS) by the ArtiMinds company is making the programming and use of robots simpler in the areas of assembly, handling, logistics, or laboratory tasks in industry and the logistics sector.

Due to the enormous increase in the capability of intelligent computer systems and algorithms, automation will advance more broadly and faster than expected in coming years: exponentially, not linearly. Cognitive computing systems are becoming increasingly capable of grasping even complex situations and making better decisions faster than humans.

"Ultimately the manager's responsibilities will be limited to receiving a daily report and intervening as soon as there are any disruptions."

Ulf-Thomas Kunz, Director of Domestic Logistics, Kaiser's Tengelmann

The breakthrough of the Internet of Things will likewise drive this development in logistics forward. By the year 2025, a large portion of transport assets, loading equipment, freight carriers, and goods will have their own IP addresses and be connected to the internet. The "things" will be the data carriers for their most important information. The use of sensors and modern locating technologies will play a decisive role in this regard. For example, technologies such as RFID (radio-frequency identification) or BLE (Bluetooth low energy) will offer the potential to locate all goods, transport assets, etc., in real time and to save information about the carrier product or freight carrier. Real-time tracking and automated information transmission between freight items and equipment will be possible throughout the entire supply and value-added chain. In year 2025 the use of these technologies will have become so economical that they will be widely available.

"RFID technology would save a lot of time, money, and effort along the entire supply chain, but unfortunately the costs of chips are not developing as desired. So the prerequisite would be achieving as wide-ranging usage as possible so that prices for the RFID application will move downward significantly and thus keep pace with other systems like the barcode."

Günter Fridrich, Director of Personnel Management,
Lagermax Lagerhaus und Speditions AG

At the present time, mutually opposing interests are still blocking the acceptance of these technologies. Broadly speaking, logistics customers are indeed in favor of their use, but they are not willing to bear the extra costs involved with these technologies. Thus the logistics providers would have to pay for use of the hardware. From their perspective, however, the chips themselves would likewise create costs, whether due to additional data which is generated along the logistics process and which has to be integrated into existing systems, or due to the rising costs for data storage, IT-administration, and equipment maintenance. Even though locating technology enables logistics providers to maintain permanent transparency, reliability, and proactive intervention under increasing demands for flexibility, the costs for this technology (still) outweigh the benefits.

Nevertheless, locating technologies will soon gain a foothold in cases where a customer can improve internal processes and reduce process costs due to product tracking, for instance in the case of time-critical processes, such as in the automobile industry which is aiming to expand the use of just-in-sequence production. Combined with warehouses which were shifted into the added-value chain – meaning onto rail, road, air or water – the benefits of shipment tracing, tracking, and thus also of modern locating technologies increases enormously. Tracking is a necessary prerequisite for these time-critical processes. Moreover, industries producing high-value goods are driving the spread of this technology. In the pharmaceutical industry, for example, there is a great need for the temperature monitoring of products during transport: Shipment tracing offers assurance to the pharmaceutical companies. Furthermore, complex production chains are driving the use of chips. The more complex the process, the greater the demand for continuous tracking and precision planning and monitoring. The more users who ultimately employ RFID or BLE, the faster hardware prices will fall until their employment can be ported to mass use.

AFTER AUTOMATION COMES AUTONOMIZATION

The fourth industrial revolution and the Internet of Things is associated with an increasing autonomization of systems. By the year 2030, containers, crates, and containers will be not only networked together, but they will also become so intelligent that they will be able to act and interact autonomously.

These intelligent cognitive computing systems together will solve ever-more complex tasks. They will allow communication with people and with other computer systems, and they will be capable of recalling earlier interactions and drawing independent conclusions from these. They will take their surroundings into account, quickly process large volumes of data, and then adapt their conduct accordingly. Thus machines will be able to interact with their environment in a near-human manner. According to experts, by the year 2025 in the automobile industry, up to 80% of processes such as distribution, payments, and purchasing will be handled by autonomously operating systems.

"I am firmly convinced that, by the year 2025, we will have autonomous motor vehicles equipped with multi-agent systems that can truly interact autonomously. Earlier in intralogistics, but going a bit farther, I think they will also be on the road by 2025."

Prof. Michael ten Hompel, Managing Institute Director,
Fraunhofer Institute for Material Flow and Logistics (IML)

In the case of private transport, the use of driverless, autonomous transport systems will soon have become commonplace on our highways. By 2025, fully autonomous driving will be available as a standard feature. In this respect the use of autonomous vehicles and systems will be commonplace even by 2020. This will change not only the potential employment of vehicles in production and logistics processes, but also the types of vehicles available on the market. Thus quite in contrast to the situation today, there will be vehicles produced for specific commercial purposes, even in logistics.

SELF-DRIVING TRUCKS ARE ALREADY ON THE ROAD

In Nevada, Daimler became the first company in the world to obtain a highway permit for its self-driving truck. In Germany, the Daimler Future Truck is currently being tested for freight traffic on the autobahn in Baden-Württemberg. Daimler will soon receive a permit for Germany and the new vehicle will be ready for mass production by 2025.

DRONE PROJECT TRANSPORTS MEDICINE TO NORTH SEA ISLAND

In 2014, DHL began a pilot project titled "Packagecopter" using package-delivery drones . The project entails supplying a pharmacy on the North Sea island of Juist with deliveries of medication using drones. DHL is the first corporation to use drones at the commercial level. Other providers are sure to follow soon.

In addition to autonomous vehicles, autonomous drones are another means of transport which will cause a disruptive change to parts of the logistics industry. According to statements of the expert participants, the development of drones is nearing a breakthrough. By 2025 their use will have become commonplace. They will take over not only tasks like tracking, tracing, inspection, and scanning, but they will also be able to make autonomous deliveries. Although most civilian models today are only able to move loads of 2 kg, this maximum payload will soon increase many times over. The first prototypes are already able to transport shipments with a weight of up to 100 kg. This opens up entirely new transport possibilities, for example for grocery deliveries. In the automotive industry as well, drones will be used for the delivery of spare parts. But the experts also noted that unresolved questions of flight safety and air traffic regulation will inhibit developments in this regard. But since the demand for faster and more reliable delivery is already present in numerous businesses and the use of drones is technologically possible at virtually any time, transport by drones will nonetheless soon

SELF-DRIVING ROBOTS FOR THE TRANSPORT OF GROCERIES

The company Starship Technologies, headed by the two Skype founders Ahti Heinla and Janus Friis, is presently developing a new self-driving robot that can transport two grocery bags, each weighing a maximum of 10 kg. It is slated to begin trials in Great Britain in 2016. Customers will place their orders via an app, and using this app can track the transport of their groceries until the shipment arrives. In particular, suburban areas are supposed to profit from this service which will begin testing in Greenwich, London in 2016.

As soon as legal hurdles are overcome and the anxiety about losing contact with customers has diminished, then the acceptance of autonomous systems will increase on the market. An additional driver: They are superior to today's deterministic systems which are totally incapable of handling the increasing individualization, complexity, and speed of logistics processes. Costs for autonomous systems will continue to drop, so that by 2025 their use will have become commonplace – on this point the experts are unanimous.

INTEGRATIVE, MODULAR IT SYSTEMS ARE THE BASIS FOR AUTONOMIZATION

A growing number of networked players are increasing the demand for integrative IT systems. New interfaces, new information- and data sources, and new players must be integrated into existing IT systems. In the future, modular logistics IT systems will exist which will intelligently organize, analyze, and harness all the information from the cyber-physical systems.

The intelligent networking of autonomous systems increases efficiency, transparency, and speed, and thus has a considerable added value for logistics. Nonetheless, the necessity for the integration of new IT systems appears at first glance as a financial risk for logistics providers. This is because significant innovations are needed at the outset. The implementation of new IT systems and autonomous vehicles and equipment initially will not be associated with savings, but rather chiefly with increased costs in personnel and time.

In the case of small and medium-sized companies, the implementation of these IT systems can be handled as a large-scale project. Large companies, however, will need other solutions. The costs and benefits for such IT transitions are only in balance here when the IT system is of a modular nature, and small, island solutions are created which can be linked together in subsequent steps. A complete redesign of the IT systems, in the long run, contains the risk of involving too much time for the large logistics companies and corporations and ultimately of producing cumbersome, oversize solutions again. The implementation of an integrative, modular IT-system comprised of numerous individual solutions for lots, customers, and products as a continual process is superior: Such systems are more flexible, economical, and future-proof. Automation is a long-term project when viewed against the overall economy.

DATA MAKES FOR BETTER PROCESSES AND DECISIONS

The basic types of cooperation among companies along the value-added chain range from relationships in which only the most needed information is shared to more data-driven cooperation. This cooperation is driven by the advantages produced from the transparent and unbounded sharing of information and data (such as process optimizing). In these systems, all players along the entire value-added chain are almost completely networked and share data about production processes and warehouse inventories. In addition to more direct communication, significantly more planning data thus becomes available among the co-operating companies.

"An awareness must evolve that automatic decisions based on the evaluation of data are better and more efficient. Automation takes us to a higher level so that we can concentrate on special events, such as the Christmas season for example, or can focus on strategic decisions."
Prof. Michael Feindt, Founder & Chief Scientific Advisor, Blue Yonder

Then, based on this new data, new and more precise planning will become possible. For example, based on improved networking and enhanced data exchange, more and more predictive applications will come into use by the year 2025. These are able to determine future orders precisely and in advance, to plan the appropriate logistics processes and, if necessary, to set them in motion. Thus more accurate forecasts of demand, the intelligent ordering of spare parts, inventory planning, and re-supply are possible – together with the effects this will have along the entire supply chain. Thus companies can optimize their processes and reduce costs for the medium and long-term.

Again, the prerequisite for this is an increasing standardization of information technologies to ensure the compatibility of systems and processes.

PREDICTIVE ANALYTICS

Multichannel retailer Otto is already using the software Blue Yonder to generate precise turnover forecasts on the basis of Blue Yonder's algorithm NeuroBayes. Thus Otto can avoid out-of-stock situations while also increasing margins and customer satisfaction. The company is thereby also able to avoid surplus stocks.

3D PRINTING OPENS UP NEW BUSINESS MODELS FOR LOGISTICS PROVIDERS

3D printing will have become a fixed component of the global value-added chain by 2020. Users of 3D printing will range from consumers to local shops and even to major industries. The market will be the central driver at this point, and increasingly more individualized solutions and products will be in demand, which will be adapted during their use to the user's current needs: This means adaptive products. These requirements can be efficiently satisfied with 3D printing, so that merchants using the technology will have a competitive advantage.

3D PRINTING IN LOGISTICS

UPS is already offering 3D printing services to its customers in the USA, in particular the printing of prototypes and design models. In this venture UPS is working with printers by Stratasys uPrint SE Plus.

TNT is cooperating with Trinckle3D to support their customers in the use of 3D printing solutions in their value-added chains. 3D printing was developed – and is already in use – by TNT specifically for prototyping as well as single-product manufacture and production supply, for the on-demand manufacture of spare parts, for the service department, and for in-house logistics processes, such as for "perfect-fit packing."

The elimination of some stations along the value-added chain will mean that shorter distances will have to be traversed. In particular this will have a huge impact on just-in-time and on just-in-sequence production concepts. In general, all players who have the data for printing, and who have an appropriate printer, can offer 3D printing. This will give rise to new business models for logistics providers.

CUSTOMER NEEDS AS DRIVER FOR THE TRANSFORMATION OF THE LOGISTICS INDUSTRY

Technological developments and the associated new opportunities available to customers have led to a transition in customer requirements in the logistics industry. Customers' expectations for their logistics providers have increased; their requirements have expanded. The traditional customer segmenting into industries, sales segments, and industry sectors falls short in the face of an increasing differentiation of customer requirements and products, and for an opening of the markets for new customers, for example in the B2C business. This transition in customer requirements leads directly to the necessity for omnichannel management. A seamless communication across all communications channels will be increasingly viewed as self-evident and will require not only new IT structures, but also an organizational restructuring of the logistics provider.

The rapid transformation of the logistics industry due to technological developments – from the company app out to autonomous transport systems – is being driven forward powerfully by customer needs. Whereas this dynamic interaction has previously caused rather slow changes, the age of the fourth industrial revolution, as nothing before it, is characterized by increased velocity. For example, contracts are still being transmitted today by fax in the B2B business. However, many private customers are already using smartphones and long ago carried this requirement for new communications routes into the logistics industry. In addition, a whole generation of the labor force is going into retirement whose attitude toward communications methods was rather conservative and who used primarily classical channels. A younger generation of company leaders is emerging and will reinforce the demand for digital communications channels. We are accustomed to communicating with companies over our smartphones and to obtaining information via apps. In 2020 the use of logistic apps will be the standard, and will have become one of the most important communication channels between the logistics providers and their customers. Providers must take these requirements seriously and begin to structure their processes and points of contact intuitively and in conformance with the everyday living environments of their customers. Accordingly, the relationship between logistics companies and customers will be increasingly digitalized.

In addition, digitalization will give customers a new independence in the market. The internet offers customers comprehensive information regarding pricing, performance, quality, and experiences. Customers will exchange and compare information and will learn about services and products before even making contact with a company. With the click of a mouse, customers can switch to a new vendor whenever they are dissatisfied with the present one. There are already comparison platforms available for package shipments, such as letmeship.de or paclink.de in Germany, which suggests the appropriate logistics merchant for a particular need. The customer will thus become independent and autonomous. The downside: Stability in the customer relationship will disappear.

This independence with respect to the logistics provider is already being strengthened in the B2C business sector by the increasing use of digital assistance systems. By 2025, consumers will be able to use their digital assistance systems to save their needs regarding price, type of logistics process, and quality, and then need only receive sales recommendations from their digital assistance systems. Then the chosen suggestion can be confirmed by a single click. Since many developments from the B2C business have been transferred to the B2B business, it is of particular importance for logistics providers to know and understand the requirements of their specific customers along the spectrum from B2C to B2B. This is the prerequisite for long-term customer satisfaction and loyalty.

THE CUSTOMER WANTS TO CHOOSE

"The use of channels in the B2B business will be just as diverse as in the B2C business. The use of channels depends essentially on the technology affinity of the customer."

Thomas Preller, Scrum Master, Intershop Communications AG

Digitalization brings up new communications potentials, which in turn are reflected in changing communications requirements on the part of the customer. This is a mutually reinforcing process. The digitalization of communication routes does not mean that old channels no longer have to be serviced and that apps will replace e-mail, for example – by no means. Customers are accustomed to interacting with companies over a number of contact points and communication channels. They expect that they can choose the channel on which they communicate with a company – depending on how tech-savvy they are or how urgently they require an answer. Personal preferences and situational factors both play a role here. For example, mature companies that have mostly relied on fax for years to handle contracts will not have to switch to apps tomorrow – and they should not do so. Also, generations X and Y will not communicate exclusively over digital systems, but rather will want to speak with their logistics providers personally. These differing requirements will be driven in particular by the technological possibilities available to the customer. Companies that have to operate off the broadband network and whose digital development is restricted will still want to communicate with the logistics provider over traditional, analog communications equipment. At the same time, other companies expect their logistics provider to be able to keep pace with every evolutionary jump in digitalization. Accordingly, logistics companies must offer analog and also digital communications solutions and link these together. The task of the logistics provider is to service all interfaces required by the customers, then link them into their own system and network them intelligently.

THE CUSTOMER EXPECTS OMNICHANNEL COMMUNICATION WITH THE LOGISTICS PROVIDER

Put bluntly: Customers will want to be able to select the desired channel at any time, yet still enjoy a seamless communications experience. Companies across industries are working to meet this demand. Anyone who complains about a problem by telephone will expect that the next contact person who corresponds by e-mail is informed about the situation. Customers do not want to have to repeat an explanation of the matter. They expect that the contact person on any given channel knows about the current state of communication and information and that the same information is available everywhere and with the same quality.

"The customer is omnichannel. Active on every channel and cannot be restricted to any: You have to look at your app or at your internet page now; you have to wait for the call. And all this has to be handled in parallel!"

Dr. Lupo Pape, Co-Founder and CEO, SemanticEdge

An intelligent organization across several channels is one of the most compelling challenges for all companies in regard to customer dialogue – even in other industries. This is the fundamental element of an integrated omnichannel management system.

PERSONAL CONTACT REMAINS IMPORTANT

"Customer communication will be increasingly automated in everyday business. Customer contact in the future will revolve less around operational and technical factors than around contact management, the intensification of business, and process optimizing."

Alexander Friesz, Member of the Board, Lagermax Lagerhaus und Speditions AG

To avoid any misunderstanding: In the long term this does not mean the end of personal contact in the business cycle. Whether at the level of decision makers, in negotiations, or in the creative realm:

New digital opportunities and personal contact are not mutually exclusive. Even given essentially automated communication, contracts and contingencies will still have to be negotiated personally. In other respects the situation is even reversed: Even automated negotiations will not make everyday personal contact obsolete, not even for generations X and Y with their great demand for digital communication. It is not a matter of replacing the forms of communication. Rather, communication will become more versatile. However, the period of unambiguous communication assignations is past: Individual hierarchy levels will not prefer particular communication channels any more than different generations will. Personal contact will no longer be automatically better; it will not necessarily result in greater trust and loyalty. There will be a smooth flow of transition between voice and written communication, always adapted to the particular customer's situation. The picture will be more complex. Since the customer cannot be tied down in the use of channels, companies will have to operate the channels in parallel in accordance with customer needs. The customer's requirements are the central focus of customer dialogue. Omnichannel management must ensure this.

"Everyone wants to be viewed and recognized as an individual. Everyone wants personalized communication, whether in a personal conversation or over one of the remote channels, like telephone, e-mail, fax, or chat. The emotional level plays an important role in business relationships."

Gerald Schreiber, Managing Director, davero dialog

AN INTELLIGENT INFORMATION FLOW IMPROVES CUSTOMER SATISFACTION

The customer will not only select the channel to use for communication with the logistics provider, but will also select the level of information desired and how frequently contact with the provider is necessary. Individual customers will differ significantly concerning exactly when and how information about the delivery process is required. The flow of information in the logistics industry must therefore be highly individualized. Customers will want to decide if they wish to be informed about new offers via computer or by a human operator, or whether they want to receive e-mails or push messages whenever there are disruptions to the logistics process.

For this reason, logistics providers will offer customers the opportunity to save precisely these requirements in the system in a transparent manner. Thus in this way not only can a broad range of communication channels be individualized, but in addition the customers will have all information readily accessible for themselves. Customers can and want to decide whether – and what particular – data is to be provided to merchants and to any third parties. For the logistics provider's IT department, this means not only offering a new external interface to the customer, but also a change in employee profiles and internal structures, because management of information and of the customer profile will no longer remain solely the responsibility of the sales employee, but of the customer as well.

At the same time, the possibilities open to the merchant for refining user profiles are increasing due to big-data analysis. The more channels, the more digital the communication, the greater the volume of data generated, and thus the greater the potential to understand the customer and her needs and behaviors more clearly. This is the basis for individually tailored sales offers, but does not eliminate the requirement to allow customers to view the data thereby collected. The first complicated requirement for future-capable omnichannel management is to find a balance between openness and data transparency toward the customers and the exclusive analysis of their needs and requirements.

"Those who are actively involved in the various social media and communication channels and who disclose a lot of personal information will receive much better service and better sales offers – even today, but more so in the future."

Jörg Liebe, CIO, New Business and Innovationmanagment, Lufthansa Systems

THE NEED FOR HIGHER QUALITY- AND MORE TRANSPARENT INFORMATION

From the customer's point of view, this relationship has long been commonplace. If they receive better, more personalized offers and products based on their data, then they will release even more data. Data management is an outgrowth of data protection. This is a development that is increasingly giving better insight in the future: In 2025 logistics providers will be able to use data analysis to recognize and address the need of the customer even before here needs have been articulated. Products can thus be more quickly adapted to customer requirements – this will form the basis for the customer satisfaction of tomorrow.

Even since 2015, customers have expected high quality and up-to-date information, for example about the status of a delivery, arrival time, or about any disruptions – and the customers determine the communication route. The pressure to offer tracking, tracing, and detailed status messages about shipments is increasing with the increasing number of offers on the market. For the logistics provider this is more than just a question of customer communication; rather, these offers are based upon knowing the relevant data in real time and being able to access them from within the company's own data management systems. The volume of data available today and the possibilities for deriving forecasts from this basis are just marking the beginning of this development. Driven by the market segment of courier, express, and parcel services, and by the customary offerings in B2C-business, customers are increasingly expecting this service from logistics providers. By no later than 2025, logistics systems will ensure an intelligent flow of information to the customer as standard practice.

"Yes, every customer is different. But when it is a matter of receiving the products ordered on time, a maximum of information is needed. Obviously if I have a choice between logistics providers, I will choose the one who gives me the greatest flexibility and transparency in the delivery."

Dr. Lupo Pape, Co-Founder and CEO, SemanticEdge

In addition, customers will want to have a maximum level of transparency in the delivery process which is also outwardly secure: maximum openness in the internal relationship, with clear separation from third parties – competitors should not be able to draw any conclusions from supplier relationships, supply chains, or order contingents. This is an aspect that substantially opposes new developments. For example, there is no evident market participant in the broader logistics industry who could induce individual retail chains in the grocery industry to operate and manage warehouses jointly, even though the cost- and processing advantages of doing so are self-evident.

For logistics providers, this presents an additional difficult requirement for omnichannel management: to provide and to accept information on all channels in a networked manner in increasingly more complex supply chains, to integrate specific partners into the communication, and to maintain the information across the entire supply chain. This is driven by the customers, whose needs for networked processes are increasing, as is also the significance of seamless and comprehensive information for the purchase

decision. A precise statement of what route a beef filet has taken from a particular producer to the butcher, and what medicines the particular animal was given during its lifetime, can be viewed as relatively simple here. Customers will increasingly make such communications services the foundation of their purchase decisions. At the present time there is no standardized equipment that allows this kind of intelligent and reliable flow of information along the supply chain and which at the same time allows the local administration of data, control over the data by the players involved, and ad-hoc data networking. Logistics providers can respond to this by offering their customers appropriate IT solutions which simultaneously ensure both transparency and data security. An intelligently controlled flow of information will be of fundamental significance for the logistics process and for customer dialogue in the future.

SIMPLICITY –
A FUNDAMENTAL
CUSTOMER REQUIREMENT

"Every time there is an approach from a logistics provider which has slightly more complicated processes, it fails. Miserably. I think that simplicity is a key point. It has to be simple."

Mateusz Juraszek, Head of Software Development, Tiramizoo

The reduction of complexity is one of the central customer requirements for the digital markets of the future. The potentials for transparency which will emerge due to tracking systems and networking will increase the amount of information and thus also the complexity of the logistics process. This is the challenge for the logistics provider: to reduce complexity for the customer and at the same time to realize an increased complexity in the processes involved. Using the example of the grocery supply chain: A value-added chain of this kind consists of a number of players – from the grower to the butcher, then the packer, and on to the transporter. The volume of data collected along this process will increase enormously again by 2020. But nonetheless, the customer will expect simple information. This represents an opportunity for logistics companies to reduce the complexity for the customer and to provide the data in as simple and transparent a manner as possible. This begins with a search for the appropriate transport route and then goes far beyond the delivery of the product, and includes returns, product service, and after-sales. Simplicity will be a central requirement for the logistics customers of the year 2020.

THE NECESSITY FOR PERSONALIZED PRODUCTS

Customers will expect not only personalized communication and a personalized flow of information. The necessity for personalization is increasing across industries even at the product level – for B2B as well as B2C. In the logistics business, this goes far beyond today's customary requirements for the industry: for example, of the pharmaceutical industry with its need for the constant temperature monitoring of shipments.

In this respect, customized customer requirements give the logistics provider the opportunity to expand their portfolio. This can also mean that logistics companies can provide their customers with customized product offers from a set of standardized modules.

At this point it is clear: Automated personalization does not relieve the logistics provider from the requirement to acquire and exploit specialized knowledge about their customer segment. An understanding of the individual circumstances of the customer and a confident appreciation for appropriate and helpful communication and services – this is and remains an expression of esteem. However, whether this occurs by means of human consultants or through data-based IT-systems will quickly become less important than has been previously thought possible.

CUSTOMERS WANT TO HAVE A SAY. THEY EXPECT A FAST AND FLEXIBLE DELIVERY PROCESS

In the future, customers will expect ever-shorter delivery cycles in logistics. The one-day delivery will be followed by the one-hour delivery, and in the automobile sector a just-in-sequence-delivery system is already in place. Customers will expect an ever-faster delivery of their shipments – because it is possible, because there are already merchants who will provide this service, and because, from the customer's point of view, it frees-up employees' time and personnel costs can thus be reduced. Standards on the market are shifting.

And not just that – customers will also expect a more flexible delivery process and possibilities for proactive intervention. In 2025 the customer will want to be networked with the logistics provider to the extent that she can not only review the logistics process, but

also make changes to them. The need for flexibility will be driven firstly by fluctuating sales volumes that will need to be handled by logistics providers, and secondly by shorter product life cycles. Whereas, in the past, material flows, shipping routes, and distribution processes were planned for a given product for years in advance, this frame of reference will become ever shorter. Meanwhile, manufacturers are now bringing new mobile phones to the market every year. This also has an effect on planning. In a digitalized world, planning has to be more effectively linked with the operational world. It is no longer enough to design a product stream once and then to adjust something every few years. In a more flexible world, practical matters always have an effect on planning. The customer will project this need for flexibility right onto the logistics provider.

An additional dimension of this need for flexibility arises from rigid demands, such as when production has to be interrupted in the automobile sector when a delivery is delayed. Customers will expect an ad-hoc adjustment of other ongoing delivery processes in order to ensure their supplies. Another example from the B2C-business is the increasing demand by customers to be able to make their own ad-hoc changes with regard to delivery time and location.

Giving the customers this kind of authority will provide them with confidence, enhance customer loyalty, and increase the frequency of communication between customer and logistics provider for each shipment. Thus both sides win – and the requirements placed on omnichannel management increase anew. This customer requirement can be handled in a highly efficient manner, especially through digital networking between customer, logistics provider, and autonomous systems, and also by real-time tracking.

Increasingly more customers and consumers will expect a consistent and sustainable production and logistics process, based on technological innovation and optimization, without impacting their demand for efficient processes, prices, and quality. Environmental topics and sustainability are being driven chiefly by consumers and not by the industry itself: This subject is rather one of marketing, albeit an important one.

Ultimately, digitalization and digital transformations are not driven forward due to technological advances, but rather are based on the associated possibilities for process optimization, such as improved flexibility, simplicity, transparency, and the associated opportunities for proactive involvement.

THE SUBSTANTIAL DIFFERENTIATION OF CUSTOMER GROUPS

For decades, logistics companies have differentiated their customer groups according to industry-specific logistics requirements, company size, and sales volume. The same requirements for service, support, and communications were attributed to all companies in a given industry. Then logistics merchants developed their product- and communications strategies according to this grouping.

This segmentation is inadequate even today – and all the more so with a view toward 2025. The differentiation of customer needs driven by technological developments alone opens up new opportunities for logistics companies to view their customers in a more differentiated manner. Customers are increasingly expecting a personalized touch with respect to communications, the flow of information, and products and services. These demands are also directed toward the logistics provider.

More than ever the customer is being placed in the center of the product chain. Thus sweeping categorization is not expedient. Instead, a differentiated view of the individual customers will make possible a precise differentiation of their communication and information needs. The choice of the best customer interface for the situation, and its use for specific purposes to this extent, is predicated upon a greater differentiation of customers as analyzed by the company. This is because properly understanding the needs of customers and responding accordingly will be decisive for customer loyalty. This study shows that there are primarily three factors that will enable logistics companies to classify and to address their customers in a differentiated manner: the personal level, the degree of product personalization, and the positioning of the customer along the supply chain.

DIFFERENTIATION BASED ON THE PERSONALITIES OF DECISION MAKERS

One level of customer differentiation is provided by the already commonplace analysis of the personalities of decision-making players. For it is not the companies that have to be addressed in communication, but rather individuals who are responsible for company decisions. A company that belongs to a rather conservative industry, but that has a daredevil personality at the helm, will expect a different mode of address than a company in the same industry lead by someone with an emphasis on conservative values. Thus the advantage goes to those merchants who can more accurately grasp and describe who they are talking to. This point seems like something self-evident – a lesson from elementary school – but today is undergoing an unexpected dynamic due to advances in technology. Several merchants, among them Psyware in Aachen, are bringing technologies onto the market that use speech analysis to determine personality features. In real time, logistics providers can actually assign individual employees in customer companies to the particular customer service representative on the telephone who most likely will establish a winning line and who can directly alleviate any potential conflicts – the next level of the familiar requirement of placing the customer in the center of company activity. However, this factor is being impeded by the increasing fluctuation of personnel on the customer side, a development that is only going to accelerate in coming years.

DIFFERENTIATION OF CUSTOMERS BASED ON THEIR PRODUCTS

The product developments of customers offer logistics providers a second level of differentiation. The classical mass market will be supplemented by personalized sales offers. By 2025 the number of personalized products will increase to the point that products can be adapted to the customer's circumstances even after contract closure – products will become adaptive. At the same time, the different product levels demanded by the customer will be associated with differing requirements for flexibility, communication, and delivery processes from the logistics provider. There will be new opportunities to set up and offer personalized services to customers. For simplicity, we have divided this into three steps.

STEP 1: STANDARDIZED PRODUCTS FOR STANDARDIZED CUSTOMERS

For decades, products were developed primarily for the broader market. The strategy here consisted of ensuring the greatest possible efficiency: Products were kept standardized, in particular to save costs in the production process. The customer could choose between various standardized products at standardized prices. Customers could make the selection, but had little opportunity to be involved in product design.

For the logistics industry this meant realizing the transport of mass products. Shipping proceeded from the sender to the receiver, and transport from the receiver to the sender was only needed in the event of complaints or returns. The standardization of products made possible a standardization of container sizes, loading equipment, and so on for the logistics providers. The complexity of the logistics process with these classical products was low, as also was the latitude in design. Logistics companies were primarily service providers, even though the precursors in the industry had endeavored for years to connect as closely as possible with their customers, to take over entire logistics complexes as services, and to integrate deeply into the processes of their client companies. Nonetheless, the complexity was characterized as rather small, even in regard to communication between logistics providers and their customers at contract closure, initiation and completion of shipping, and for any potential complaint/return.

"The emphasis in automotive and MI at present is on the classical logistics services. With increasing changes to the end product (supplemental services in after-sales, new mobility concepts, the use of 3D printing, etc.) the demand for highly flexible new services will increase dramatically."

Hans Georg Lander, Head of Automotive & Manufacturing Solution Consulting – SCM, T-Systems International

STEP 2: THE GROWING SEGMENT OF PERSONALIZED SERVICES

The mass market has not diminished per se. The number of standardized products will continue to be produced, but with more and more latitude for personalized designs. For example, customers will be given the option of selecting standardized modules from a pool and structuring their own personalized product in this way. When buying smartphones, insurance, and cars, customers can choose from various supplemental options per model. The art of mass-market personalization lies in the modular combination of standardized elements. Here, too, the logistics provider is performing a bridging function: to combine the mutually opposing requirements of providing customers with personalized products while keeping the logistics process efficient through standardization.

For the logistics provider, personalized products mean diminishing possibilities for standardization. Alternatives to the standardized containers for standardized products must be found and communicated to the customer. The portfolio of logistics providers will be expanded as soon as they can offer product-specific, individualized supplemental services. Thus both the need for communication between the logistics provider and customers, and also the requirement for flexibility, will increase steadily.

STEP 3: ADAPTIVE PRODUCTS – THE NEXT STEP IN CUSTOMER-SPECIFIC ADAPTATION

This step toward increasing personalization denotes only the beginning of a trend. Across industries we are seeing a new product logic emerge: Products in the future will be customized to the customer's particular circumstances and requirements for a particular product, even in cases when subsequent customer requirements cannot be foreseen or stated at contract closure. Products will be adapted to the permanently changing life circumstances of their customers.

Intelligent digital assistants will automatically customize insurance coverage to a person's life circumstances and affinity for taking risks. Telephone contracts will be adapted to actual usage – to the user's advantage. Building facades illuminated from within will make it possible to view city planning as a continual process over the entire life of the building, and by the push of a button to adapt the visual appearance of the facade to a changing environment, even years after construction, through interaction with different groups of users: owners, renters, professionals, residents, passers-by. 3D printing and other innovative technologies in medicine will shift the focus in the healthcare industry from restorative healing to the ongoing optimization of one's own body. The list is easy to extend. The core of this logic is always the same: Products remain flexible over the long run and are capable of adapting to the needs of the user. Products are becoming adaptive – and the customers of the future will expect this as being commonplace and self-evident. The experts interviewed for this study anticipate the emergence of this development in the year 2025.

Even today, Google's project Ara is making the following promise in B2C-business: If customers no longer like their smartphones, then they can replace them with new models. 3D printing makes it possible to print adaptive replacement parts in the B2B business. This development will be driven forward through increasing networking, digitalization, and data evaluation. Data analyses are fostering a customized and situational – that is, adaptive – structure of products. Technological possibilities and customer expectations are having opposing effects here, too. The customers' need for simplicity in a world of growing complexity is reinforcing this trend.

Again, this trend presents logistics providers with considerable challenges. The product will no longer be transported only from shipper to receiver, but will circulate between the consumer and within the supply chain and/or will be adapted by the shipper directly on site, as soon as the consumer's living environment changes. This can be done even in a monthly cycle, or even at hourly intervals. The delivery activities and complexity of the logistics process thus increases exponentially, as do the demands for flexibility in delivery cycles. The logistics provider must ensure a maximum of transparency. Moreover, adaptive services require a high degree of networking of the autonomous systems with the communications systems. An ad-hoc response by the customer must be possible.

But in addition to the challenges, the structural opportunities for logistics providers are also increasing. For example, adaptive products for the customer provide an opportunity for the logistics company to gain a new importance in their role as a linking element for players within the supply chain and to develop new business models. As adaptive products more frequently display a certain complexity and are made available by more than one manufacturer, logistics companies can leverage their customer contacts to the various players involved. Because the requirements of adaptivity are not even remotely solved by the related question of transport. What suppliers are involved with the product elements whose specific functionality is to be changed? Who has to make improvements here? In turn, who is to handle questions of permits and liability? Adaptive product offers are predicated upon a complex interplay of numerous players, and retail and sales – the classical areas of customer contact – need not necessarily be part of the chain. Anyone who wants to adapt the characteristics of a motor vehicle subsequently to new requirements will need the control equipment of the electronics supplier and the measuring equipment of the sensor provider, but will hardly need the sales competency of the local car dealer. Undertaking this linkage of the particular players needed at the moment, and thus enabling the adaptive modification of products, is a highly promising field. In this regard logistics providers are in an outstanding starting position to offer this service successfully, since they are already familiar with the requirements of this kind of networking and can be seamlessly linked in themselves. The logistics provider can assume this position. In return, that provider will obtain the customer contact and its associated data – one of the most valuable commodities in the digital world.

If the logistics provider assumes the role of coordinator and organizer, a steady flow of information between all parties, including the consumer, is inevitable. This communication will be intensified enormously. Only in this way is a situational adaptation of products possible. Then, in a second step, an independent decision can be made about whether the product adaptation itself will be handled by the logistics provider or by the customer, or by another service provider.

By year 2025 many companies will have expanded their product portfolio to include highly personalized and adaptive products. This trend from mass-market products out to adaptive services will provide logistics companies the opportunity to accompany their customers along this path right from the beginning, and to assert themselves into the newly created market. Using the example of the automobile industry: Their concentration on long-term core business, the sale of ever-better vehicle models, will move into the background with respect to the brokering of mobility services. Over the long term, the personalized automobile cannot keep pace with the services promised by integrated mobility service providers. Therefore, European and international corporations are moving massively into the design of alternative systems and endeavor to place them on the market. This gives logistics providers a chance to accompany precisely those companies along their product development route. They can bring up suggestions at an early date and then ultimately place their own product with the customers – before customers have even noticed the need for the product.

and products along the supply chain offers the logistics providers new opportunities. Suppliers or producers are located at the beginning of the supply chain, and as customers, they have different needs and requirements of the logistics provider than do customers positioned primarily in the B2C-area who are positioned nearer the consumer. Not only are the needs different, but also different structural potentials and scope of action are opened up for the logistics provider.

If the logistics provider is cooperating with the manufacturer of a product, it might be an interesting option in the future to use mobile 3D printing to take over the production of replacement parts directly on site with the customer. Logistics providers can provide intelligent packaging for customers like grocery suppliers and pharmaceutical companies. The specific positioning of the customer within the supply chain allows the logistics provider to structure and offer additional personalized services beyond the actual transport service.

DIFFERENTIATION ALONG THE SUPPLY CHAIN

A third level of differentiation allows the positioning of customers and their products within the supply chain.

"More and more of our customers in the B2B area have opened up to B2C business. Accordingly, we have also expanded our portfolio in Germany to offer the appropriate solutions for shippers and receivers in the B2C area,"

Holger Ostwald, Manager External ommunications, UPS Deutschland

Many companies that are classically involved in the B2B business are increasingly also operating a B2C-business. Internet commerce offers the consumer nearly unlimited opportunities to have all imaginable products delivered at home directly from the manufacturer. This is a trend that works against the intermediate dealers. This provides an opportunity for logistics providers to open up and even to expand their own range of products for B2C-business. Several B2B logistics companies have already expanded their portfolio with respect to private package shipping. In the future they will offer additional services going beyond mere transport. The positioning of customers

The challenges of supplying larger supermarket chains were for a long time equivalent to the standard the-mes in logistics: bringing larger quantities of perisha-ble products, under reliable temperature-control, from regional warehouses to the loading docks of the local supermarket in a short time, and including the shipping ticket. Communication, adaptation, scope of services, frequency: highly standardized and easy to plan.
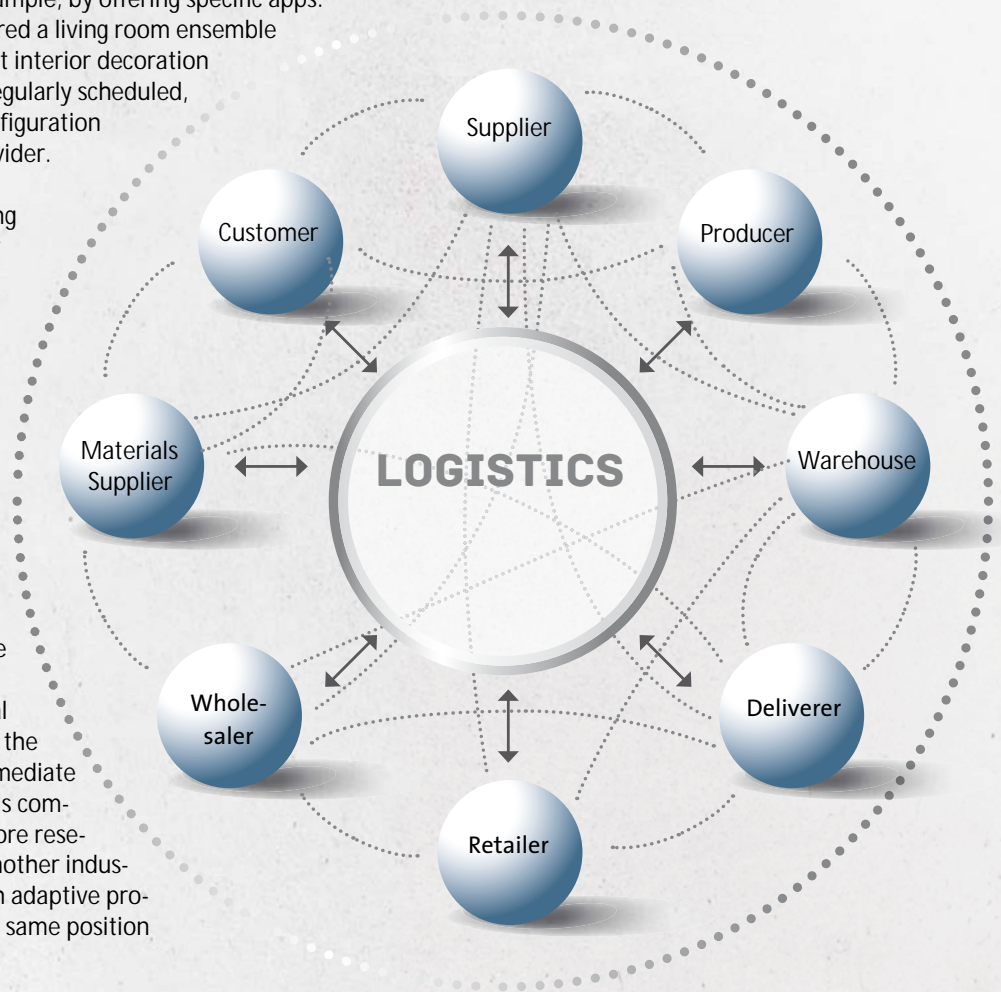
For a long time now, several German supermarket chains have been working on digital products that will fundamentally change logistics in the grocery retail business. The packaging sizes will be much smaller if customers are no longer buying groceries by unit or by the pound in the supermarket, but rather based on a recipe in an app: One ounce of ginger, please! And that, delivered to the customer's home for free. Or to the office. Or to the trunk of a car, opened by remote control, whose location is determined based on additional digital interfaces. Of course, the logistics provider will not be able to command a higher price for these additional services. At the same time, this trend offers the logistics provider enormous opportunities for internal structuring, ranging from IT work out to the appropriate supplemental services.

However, a closer proximity to the consumer offers the logistics provider extensive structural possibilities for communication between the logistics customer and consumer, for example, by offering specific apps. A customer who ordered a living room ensemble will also receive with it interior decoration and the service of a regularly scheduled, seasonal design reconfiguration from the logistics provider.

The criteria for defining the size of a customer will thus be shifted fundamentally. Even in the segment of adaptive services, a small customer – according to the classical definition – can present a logistics provider with greater opportunities for services and business models than an allegedly large customer who simply wants to have classical products moved from the producer to the intermediate dealer. This customer's communications needs more resemble a customer in another industry, but which through adaptive products is located at the same position in the supply chain.

THE SUPPLY NET OF THE FUTURE

Dealing with adaptive products is chiefly a function that opens up new options for the logistics provider of the future: The greater the adaptive characteristics of products and services, the less is it possible to define the value-added chain in linear terms. The value-added chain of the future is circular, multidimensional, and complex – more of a supply net than a supply chain. One of the greatest opportunities omnichannel management will offer the logistics providers of the future is the ability to link these different elements together – and with it the role of communicator and coordinator of the complex supply net. Whoever fills the role of network node is in the best position for the business models of the future of logistics. The alternative is less attractive: Merely performing left-over tasks – delivering packages for third parties, warehousing products, maintaining vehicle pools – is hardly any way to build a rosy future in the industry.

The more substantial differentiation of customers based on their needs, their respective decision makers, their products, and their position within the supply chain makes it possible for the logistics provider to understand the individual needs of customers with respect to service and communication, and to adapt the scope of services accordingly. In this manner long-term customer satisfaction and loyalty can be guaranteed.

OMNICHANNEL MANAGE-MENT OF THE FUTURE

The customer of tomorrow will expect to be able to dialogue over all channels and also to select and to change the preferred communication channels seamlessly. She will always presume that the same level of information – the same data in the same quality – will be accessible on every channel. Customers will require an intelligent flow of information over all channels along the entire customer journey. In addition, the greater differentiation among B2B customers according to their products and position along the supply chain will mean that the complexity of, and communications needs for, classic products will shift toward adaptive products and toward the complex requirements of the supply net for this type of products.

Omnichannel management is the answer to this growing complexity, to the increasing demands for flexibility, and for seamless communication. Companies in primary industries, for example in the finance and insurance sectors, are bringing solutions onto the market which will additionally increase these needs from the customer side.

The objective of omnichannel management is to link the contact points with each other so that all communication and interaction contributes continuously to a consistent customer experience. The nucleus of an omnichannel strategy is that the company sets the customer's needs more clearly in the center of the business model and no longer places the focus solely on the individual sale, but rather on creating a long-term omnichannel experience. The long-term customer relationship thus moves more powerfully into the foreground.

From the perspective of the development of the individual company, the introduction of omnichannel management involves specific challenges.

TECHNOLOGICAL PREREQUISITES FOR SUCCESSFUL OMNICHANNEL MANAGEMENT IN LOGISTICS

The technology for the omnichannel management of the future will be based on four pillars: a functioning network, a well-functioning big data infrastructure, modern cloud technologies, and efficient M2M communication.

A functioning network and the linkage of all channels in re-al time are the prerequisites for the customer always having a consistent and intelligent experience of the company brand on every channel. To administer and analyze the volume of data generated by these channels and to create a personal experience for the customer, a big data-capable infrastructure is also needed. Big data analysis allows a huge improvement in efficiency, a per-sonalization of products and communication, and associ-ated with this, an increase in customer satisfaction. The technological requirements for the capability of the big data infrastructure are as follows: The analysis of customer data is only as good as its ability to forecast the individual and situational needs of the customer and to deliver the forecast in the form of rapid decision-making aids on the various channels. CRM systems that satisfy these require-ments will no longer be passive in the future, but rather active. Based on the available data, they will stream tar-geted, intelligent proposals directly into the various cus-tomer dialogue processes.

"The IT structure must be configured in an agile manner specific to the channel and industry, and must also allow centralized data administration and evaluation. A modular structure is needed which allows a smooth tie-in of external services and additionally also a fast and reliable transfer to the internal back end."

Thomas Preller, Scrum Master, Intershop Communications AG

Today's channels are just the beginning here. New, networked communications routes will follow. For example, logistics in the year 2025 will be characterized by autonomously acting systems. Machines will be networked and interact with each other. To this extent the integration of M2M communication into the customer dialogue process is one of the central challenges of the logistics industry. In a modular network of the year 2025, different cyber-physical and autonomous systems will be interconnected and will allow communication between the various players in the logistics process. This offers logistics providers the opportunity to have a permanent overview of all shipments, transport equipment, and loading stations and to intervene if necessary. People – whether logistics providers or their customers – will link into this network via mobile devices and can view and change the ongoing logistics process. The decisive factor here is making the experience of the increasingly complex logistics process as simple as possible. The idea here is to interlink the communications networks of M2M communication and customer communication which have previously been viewed as separate.

The core of successful omnichannel management in the logistics world of 2025 is the intelligent networking of M2M communication and customer communication. This modular network ensures centralized data administration and evaluation, and makes it possible to unify communication with all players in the logistics process.

The second half of this requirement consists in the specific control of network communication. Within this kind of network, which unifies M2M communication with customer communication, rules must be created for access rights and communicated in a transparent manner. Data security is the fundamental prerequisite for networking and must be convincingly implemented to ensure the customer's confidence in the logistics provider. Because, ultimately, this is a matter of a mutually open system: The logistics provider must balance the level of access to be provided to customers into the logistics process with the risk of then not being able to make strategic decisions independently of the customer in the event of accidents, delays, etc. In turn, customers must decide for themselves to what extent

they will allow the logistics provider to operate within their own systems, because customer data in the digital world belongs to ... the customer. That data is in the customer's systems, under customer authority. Accordingly, the smarter individual is the one who not only understands how to manage their own customer data and thus to build, justify, and enhance the confidence of customers, but rather those who gain access to their customer's data and systems. This is the actual challenge for building customer trust: The customers must trust the logistics provider enough that these are allowed to operate in the customer's own systems.

An omnichannel network of this kind can be based on a modular IT structure which must allow a smooth tie-in of external networks and services, such as the customer's digital assistance systems or other, new channels.

THE DIGITAL ASSISTANCE SYSTEM AS INTERFACE TO THE CUSTOMER

In the future, digital assistants will play an important role in all areas of the customer's life, especially in B2C. In 2025, consumers in particular will save their preferences for price, service, and quality into a digital assistance system so that merely receiving recommendations from the system will suffice from that point on. Then, ultimately the customer only has to approve of the suggestions received with a simple click. New channels will appear to the extent that providers occupy the content of the electronic assistants. Assistance systems of this kind are already available now (2015) in numerous fields, from travel insurance to health and finance.

"The digital assistant will be the interface for communicating with the customer. I think that the digital assistant is the key approach to unifying the communication channels. That is happening now, and these assistants will be much smarter in the future."

Mateusz Juraszek, Head of Software Development, Tiramizoo

In B2B as well, digital assistance systems will increasingly be used. These systems can be provided by the logistics company or also by external suppliers. With regard to customer dialogue, they can form the interface between the logistics network and the customer. In this way the digital assistant decides which method is to be used for transmitting information based on the customer's current situation.

Electronic assistance systems offer customers and service providers the possibility of a win-win situation. The customers feel that their daily routines are well supported by assistance systems, while the service provider can then cluster and evaluate the data thereby generated. The opportunity to tie into the IT and omnichannel structures of the logistics company will be fundamental for customer dialogue in 2025

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ORGANIZATIONAL PREREQUISITES FOR SUCCESSFUL OMNICHANNEL MANAGEMENT

The introduction of an omnichannel strategy also presents the logistics companies with some fundamental organizational challenges. This is because the company that intends to implement an omnichannel strategy, and to offer the customer the same result in real time on every channel, will need more than just a CRM system. The company needs an entirely new organizational approach to customer interaction.

Traditional organizational structures will have to be abandoned, since these structures cannot meet the demands of a seamless customer dialogue. Conventional linear structures represent an obstacle to the implementation of a fluid and adaptable omnichannel management. New forms of cooperation and a customer-centered company structure are required.

Omnichannel management has an innovative and coordinating function in companies. To achieve a genuine alignment toward the customer, every channel has to be networked, coordinated, and synchronized in real time. The unique tasks for omnichannel management are derived from this requirement for a consistent customer experience over all channels: Omnichannel management is essentially an interface to other departments and requires the existing organization be dissolved. The tasks of omnichannel management are, firstly, to coordinate marketing activities with those of sales and to develop new sales channels. In addition, the omnichannel management system of the future has to manage a number of different tasks with respect to the departments it coordinates: With respect to customer knowledge, omnichannel management structures the customer data for sales campaigns and channels in consultation with all departments and in cooperation with the CRM team. In this way, customer knowledge is used in a valuable manner for interaction with the customer. The task of omnichannel management in sales / distribution is to coordinate different channels, depending on the sales model, similar to the model of customer service, which is a matter of the coordination

of inbound and outbound activities. With respect to marketing, omnichannel management also has a coordinating effect. The innovation function of omnichannel management runs in parallel with this. Because omnichannel connects and sets up a new interaction between the most disparate kinds of company functions, it is also open at its core and is aligned toward the integration of new requirements and technologies, and acts as an innovating body within the company structure.

In summary, the following tasks of omnichannel management may be derived:

- Omnichannel management is the interface to central departments: customer knowledge, distribution, customer service, and marketing.

- The omnichannel manager is responsible for the coordination of marketing and sales activities across all channels using a consistent strategy, and also for the coordination of new projects and the development of omnichannel-related products.

- Accordingly, the omnichannel management function must be arranged in a centralized manner, with decision-making authority, preferably just directly below the CEO level. An omnichannel strategy is needed at the level of top management.

- Establishment of decision-making processes and structures for omnichannel activities.

- Innovating function due to networking and integration.

THE TRANSFORMATION OF JOB PROFILES DUE TO OMNICHANNEL MANAGEMENT

At present, the division of labor within logistics companies corresponds to the three phases of the customer journey: The marketing department handles the information phase, sales and customer service are responsible for pre- and after-sales, and operations handles the implementation. An omnichannel strategy requires a consistently communicated, underlying idea for all three phases of interaction. Omnichannel management is based on the approach that the customer's experiences with the logistics provider are structured across all communication channels. Customers and their needs are the central focus for the organization of customer dialogue. This alignment toward the customer requires a cross-departmental omnichannel management strategy. To implement such a strategy, an intensive cooperation among departments, and thus a move away from existing "silo" structures is required. Omnichannel management requires the creation of self-organized teams. For example, marketing, sales, and customer service will make decisions about communication with the individual customers in joint teams. They will have to develop a common strategy.

MARKETING AND POSITIONING OF THE COMPANY BRAND

Defining and positioning your company brand must be viewed as part of an omnichannel strategy – and specifically both with respect to the customer and to your own employees. Ideally, the logistics company's brand will be reflected on all channels of an omnichannel strategy. The strategy should be felt directly and must always demonstrate anew your service pledge at every point of contact.

A consistent positioning the company brand requires cross-channel planning by project management and a channel-based implementation by the operations team. Project management must be integrated to operate across all channels and to keep track of all activities involving a given topic. The marketing department will have to be structured so that it can serve all communication channels equally and independently.

SALES AND CUSTOMER SERVICE

To create an omnichannel experience for the customer, it is essential to share knowledge internally among departments. For example, sales staff must be informed not only about any complaints or service problems with the customer, but must also know what the customer has most recently inquired about, what the customer is interested in. Technologically speaking, CRM- and workforce management software is needed here which will assure the flow of information in real time between all departments and permit a consistent view of the customer by all departments. Moreover, a culture of information sharing must be established between departments. But this move may definitely cause conflicts. For example, today's sales professionals must be prepared to share their knowledge about "their" existing customers.

In the future, CRM systems will be converted into systems of engagement which will simplify interaction with the customer for the logistics employee because they will provide information relevant to the particular situation. The customer's present concerns, and also any other relevant information from a knowledge database, will be automatically displayed to the employee in the sales or customer service department who is in contact with the customer.

Sales will also shift increasingly from offline to online activities. Sales employees in the future will be supported much more heavily by intelligent systems. This trend is driven by vendors of customer intelligence software.

NEW ACTIVITY PROFILES

The digital transformation will mean that today's employee activity profiles will change and new profiles will even appear. For example, the classical role of expeditor differs from that of process coordination and control, and from crisis management and customer administration. Automation and digitalization will change the role of the expeditor, who will have increasingly less to do with the actual process of logistics.

In the medium-term there will be new CRM teams. An entirely new activity profile will be created, which will combine communication- and technical competency with the object of structuring and leading the work of this team. In addition, new specialist tasks will appear in the field of data analysis. At the same time it will become increasingly more important to develop interface competency. Employees must understand technology and the realm of professional know-how equally. In the future no company can afford to reserve knowledge for specialists only.

ATTACKERS WITH NEW IDEAS ARE MOVING INTO THE LOGISTICS INDUSTRY

"Everything that can be digitalized, will be. Everything that can be automated, will be. For the logistics provider, the challenge will be to respond to this, to keep pace with this trend and to develop appropriate business models. And above all, the logistics provider must pay attention that no other competitors from other industries – who have no idea about logistics, but who know how to operate with computer algorithms and robots – do not conquer the logistics business. If the logistics company succeeds in mastering the areas of digitalization and automation, then the company's expertise can ultimately also be translated into a better product."

Dr. Ralf Berger, Directorof Devision Strategy DB Schenker (GSL1) / Vice President Division Strategy DB Schenker, DB Mobility Logistics AG

The delivery of products these days is faster, more efficient, and more reliable than ever. Nonetheless, mere transport from A to B is by no means enough anymore. Digitalization is penetrating all areas of logistics, and customers' expectations for the delivery process are increasing rapidly – it must be more transparent, more flexible, and omnichannel. Established logistics providers should quickly realize this fact, since in comparison to new players they sometimes have considerable catching up to do. Established logistics companies have the reputation of developing few innovations and neglecting customer service. For several years, startups have been penetrating precisely into these niche markets: They are attacking established business models with a high level of technological competency, agility and flexibility, and also with significant knowledge about customer needs.

What is happening in the area of same-day delivery is happening also in other areas. The developments in the B2C business are being quickly adapted to B2B as well. Unconventional attackers are active especially in the areas of data acquisition and usage, technological innovation, new transport services, and infrastructure.

Freight exchanges that offer a transparent comparison of freight and transport service providers have now become a common internet factor. Clickapoint,

Transporteca, iContainers, or Freight Filter are only a few names of young companies that broker the right vendor for small and large shipments by air, water, and land. On online platforms, forwarders, shipping agents, courier services, package services or deliverers – regardless whether private of commercial – can very easily offer or search for transporters, freight, or open seats world-wide. The platform can be used by anyone, entirely free of cost. Thus a new player can be inserted between the shipper and receiver, and thus between the classical logistics company and its customers. Even ParcelMonkey.uk belongs among these new players which have recently set up a customer interface. On this British comparison platform, customers can compare courier services worldwide and thus find and book the best service for their needs. The logistics provider is thus losing direct customer contact. And thus the size relationship between classic, large companies in the logistics industry and the often small-scale attackers is becoming less relevant. Whereas size in the analog world will still be evidence of capability, stability, and trustworthiness, in the digital world it can be transformed into the opposite: in the best case, irrelevant – on the Smartphone's display all vendors are the same size – in the worst case, it can appear as a drag and innovation inhibitor.

"Products today must be adapted to customer needs in a much faster and flexible manner. Think about Henry Ford, who said: If I had asked the customers, they would have wanted faster horses. I gave them a car. Then they never wanted anything else. The circumstances are similar today regarding customer needs and technological developments in logistics. Startups or large companies like Google and Amazon are driving this. They are setting the new standards for customers, so that these old methods are no longer being accepted."

Thomas Preller, Scrum Master, Intershop Communications AG

The startup Global Supply Chain Solutions (G-SCS) made it their objective to create transparency regarding processes and costs in transport supply chains which is not found in conventional relationships. This makes it possible for customers to better manage their resources and to improve cost efficiency and service. Thus the company is satisfying precisely those needs that customers are increasingly directing at logistics companies, but which are evidently not otherwise being met to the necessary extent.

In the field of technological innovation, primarily 3D print mobiles should be mentioned; they produce their products while driving, whether they be replacement parts or larger goods. UPS is the first logistics company who dared to offer this innovation and has been offering 3D printing since 2013 in about 100 offices in the USA. This level of personalized service is becoming increasingly expected by many customers.

Many startups are active in this regard, especially in the area of transport services. Companies like tiramizoo, shyp, bringbee or nimber are currently filling open niche markets in the area of B2C delivery – either conventionally or on the basis of peer-to-peer logic. Tiramizoo has a same-day delivery service in metro areas, either as an immediate service or within a specified time window. Domestic offices thus can deliver products to local customers flexibly from the local office or from warehouses in nearby cities. Tiramizoo is thus serving traditional, stationary retail, as well as the booming e-commerce sector. It uses software that calculates the most efficient route via GPS locating so that the greatest number of packages can be transported simultaneously and along the shortest route. In the future, the company plans to employ private individuals as short-term couriers. By using an app and the GPS-data, it would be possible to calculate which package shipments could be best moved along a particular route. In this way the company enhances the flexibility of logistics processes and detaches the logistics business from the infrastructure. Transport is becoming independent of the large transport fleets of classical logistics providers.

The infrastructure of established companies is also being attacked on another level. For example, new means of transport are conquering the business: The company eVolo has already developed a drone that than trans-port up to an 80 kilogram payload. Right now it is the world's largest operating civil-aviation drone.

Matternet is also using this development and even today is shipping goods by drones. Previously, loads of about 2 kg and distances of about 10 km were possible; however, prototypes of drones able to move loads up to 100 kg are already in existence. Regardless of the road conditions, even remote locations can be supplied and gaps in infrastructure can be closed. And not only that, but the company is attempting – by means of a network of solar charging stations – to have their drones move autonomously. This would mean that anyone who wants to have something transported can call a drone, charge it up, and send it off to its destination. No pilot or ground personnel needed; once activated, the system acts autonomously. Matternet is thus offering its customers a very high flexibility that classical logistics companies cannot presently match.

Based on sharing-economy services familiar from the private-customer sphere, other logistics startups are using internet platforms to offer their customers short-term or long-term storage space. Cloud Fulfillment and Shipwire, for example, are offering decentralized warehouses, and even performing commissioning and product transaction, for companies. Thus they take on part of the value-added chain from their customers and thus enhance ties to these clients.

Logistics companies that are not in a position to implement these innovations by their own means have been garnered inspiration from startups and have even bought out innovative vendors – for example, as Hermes did by buying Same-Day-Delivery, or Amazon, who bought Kiva Systems, an innovative manufacturer of intralogistics solutions, in 2012. By this purchase and the automated intralogistics acquired, Amazon gained a technological lead of about three years over competitors.

The logistics industry is in motion. Customers are moving increasingly into the midpoint of the logistics process and are placing new demands on their logistics providers. For established companies it is important to respond to this trend – but how?

"Until recently I thought the use of autonomous transport drones to be absurd – especially in our cities. But now even we are developing technologies that make that will probably make that possible. People are fascinated by drones; we have rarely seen so many requests concerning such an innovative topic."

Prof. Michael ten Hompel, Managing Institute Director, Fraunhofer Institute for Material flow and Logistics (IML)

HOW TO MAKE YOUR COMPANY FUTURE-PROOF

Omnichannel management is the company's response to the changes in customer expectations, technological developments, and the transition of our living and working environments. Your customers will obviously expect this flexibility and agility in a few years and if they do not get it, they will quite possibly seek – and find – it with your competitors. In this respect it can be stated briefly: Reconfigure your customer communication – and even more, your company. Say goodbye to today's divisional structure and imagine your logistics company from the viewpoint of customers and their communications needs. Begin reallocating responsibilities at the level of top management and implement this transition at all levels of your organization. But even if you do not decide in favor of a great leap, but just for a step-by-step transition, this process will lead you to become a new company. The introduction of genuine omnichannel management goes much further than the procurement of new marketing gadgets, of optimizing the sales process, or of technological innovation. We recommend these steps to you as the result of the present study:

1. NETWORK THE COMMUNICATION CHANNELS!

- Create the technology prerequisites and network the communications routes so that customers can begin a dialogue with you at any time and at any contact point of their choice.

- Keep the proportion of communication channels within the internal structure flexible. An unexpected channel can quickly gain in importance and another one can become unimportant. Set up your IT architecture in a flexible manner so that you can integrate new communications routes at any time. If in doubt, do not hesitate: Add another of these new routes.

- Invest in a big-data infrastructure so as to create a personalized experience for the customer. Intensify your cooperation with data analysts. The decisive factor here is whether you are in a position to identify the needs of individual customers precisely and in real time, and to respond with suitable offers tailored to the individual customer.

- In a first step, define who your customers are. In a second step, consider how to approach them. You must know your customers, their communications needs, interests, their corporate culture. Only then can you select the optimum channels.

- The next development stage: Learn to read your customer's needs before they state them. Invest in smart forecasting technologies and install learning systems. Take the initiative in customer dialogue and make the approach without prompting.

- Be focused, but frugal: Only turn to your customers precisely when you have recognized a definite need on the part of the individual customer that you can satisfy with a properly customized offer.

2. TAKE THE DRIVER'S SEAT IN THE DATA TRUCK: CUSTOMER DATA IS STRATEGICALLY THE MOST IMPORTANT TRANSPORT GOOD OF THE FUTURE

- The loads are shifting: Whereas the bill of lading and freight documents had long been merely an appendage to the transported commodity, they have long ago become the actual commodity. The physically transported commodity follows in the tracks of the data.

- Relieve your customers of the need to operate all data formats and interfaces themselves. Ensure a transformation of the data across all channels. Your customers choose the data format. The pledge of the omnichannel-capable logistics provider of the future is that of a transfer of customer data across borders, languages, formats, and media. Set up an IT structure with the goal of handling it better than your customers can; become the better communications interface.

- The customer's confidence in your data management is your new and most important currency: Only this currency allows you access to the data. The deeper you can network with your customer's data systems, the more stable are your prospects.

- Ensure not only data security, but also show the customer what data you have saved about her. All of it, at all times. At the press of a button. Give customers control over their data: Let them change and delete it themselves.

- Let go of sole access to key data. Only customers who control their own security requirements will trust your advice, your recommendations, your product offers, and will decide to enter into a long-term relationship with you:

3. OCCUPY THE NEXUS OF THE VALUE-ADDED CHAIN

- Obviously: The logistics provider links the value-added chain and enables customers to make procurements, shipments, production, sales; in short: business. This function takes on a new dimension through digitalization and opens up additional opportunities for the logistics company. At the latest with the penetration of adaptive products into the market, the value-added chains will become circular, multidimensional, and complex.

- Become the most important interface in the supply chain. Make yourself its nexus. The one who enables communication and data flow is in the best position for the business models of the future of logistics.

- Remember the alternative: The logistics provider who is not positioned as nexus in the supply chain will be reduced to handling left-over jobs that others hand off – an insufficient added value for operating a large logistics company profitably over the long term.

4. ESTABLISH YOURSELF AS ADAPTIVITY MANAGER

- Companies across industries are working on adaptive products, services, and solutions: Products that are not only highly personalized to the needs of the individual customer, but that also are able to respond to and to satisfy changes in customer requirements. The complexity of this performance pledge is huge – and it grows exponentially as more companies become part of the value-added chain.

- Adaptive products require constant communications. You must enable a steady flow of data between the players in the supply chain and become the adaptivity manager for your customers.

- Organize the adaptive transformation of the commodity: Product return, accessorizing, expanding, optimizing, simplifying – as nexus point of the value-added chain, you are in the best position to incorporate the necessary links of the chain into specific adaptation measures. Thus you will simplify processes in the maintenance of adaptive products, reduce costs, increase the response time, and thus contribute importantly to your customers' success with adaptive products on the market.

- Integrate financial services: The customers decide how they want to pay. Offer to bundle the payment streams of the other companies in the supply chain and – from the customer's point of view – to manage them from a central point.

5. BECOME A DIGITALIZER FOR YOUR CUSTOMERS

- Conceive of yourself as your customer's digitalizer: Set up your omnichannel management so that you can also integrate analog interfaces. Offer your analog customers the option to use you as a digital interface to other companies, partners, and customers. In the digital world you are the bridge between analog, semi-digital, and fully digitalized processes and companies.

- Cooperate with strategic partners to create mobile added value for your customers.

- Offer these services for intralogistics as well.

6. ORGANIZE LAYERS, NOT CHANNELS

- A consistently implemented omnichannel management will cause you to dissolve your former workflows. Divide your teams by tasks according to organization, IT, and content, and not as before according to the communication channels. Build networked layers instead of fixed responsibilities for individual channels.

- Stop assigning individual representatives to your customers. Build opportunities for the coordination and harmonization of the individual channels. Use the role model function of company leadership: Joint responsibility begins at board level.

- Ensure the internal linkage of the overall IT system, the connectivity of new channels, and the transformation of data. Invest in an IT architecture that bundles the CRM system, data retention and analysis, and also workforce management software. Your objective must be: Everyone in your company is working on the same dataset, on every piece of equipment, in every process, at every location, throughout the entire customer relationship.

7. ENHANCE YOUR INNOVATION POWER

- Construct a hard-hitting digital team. Bring omnichannel competency from other industries into your company and give them responsibility for structuring the system. Actively increase your attractiveness as an employer so as to keep technology- and communications specialists in your company.

- You need an innovation budget that is not used for the ongoing optimization of your processes and equipment. As a rough idea: Innovative companies invest 2% - 15% of their annual sales in innovation projects.

SCIENTISTS, TREND RESEARCHERS, AND STRATEGY CONSULTANTS

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Michael Carl is Director of Analysis & Studies at the 2b AHEAD ThinkTank. He is responsible for the methods and content of the institute's future studies, manages their implementation, and guides the development of individual, customer-specific strategic recommendations. He is a sought-after keynote speaker on trend and future-related topics.

After his studies in theology in Germany and Great Britain, Michael was active in journalism, working as an editor and moderator for various public and private radio broadcasters. After several years as personal advisor to an ARD radio director, he switched over to the corporate development sphere. Initially he set up and managed the strategy office of the Berlin-Brandenburg radio network and was responsible for large structural, strategic, and HR projects. In addition, Michael has served as an independent consultant for strategic and organizational development with an emphasis on media, the financial sector, commerce, and the IT industry. His passions are music and his literature blog.

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adaptive products
Product feature which describes products or services that are both individualized and situational, and adapt to the respective needs of the user even after being purchased.

assistance systems, digital / electronic
Software (e.g. smartphone apps) for customer advice and support which give recommendations based on data analysis. Financial services providers and third parties can – among other things – offer customers individual risk analysis and products using these systems. The precursors of this system are the current comparison portals.

big data
Denotes enormous heaps of data which are too large to be evaluated by human effort alone. This data results mainly from an evaluation of Internet usage, but also from other devices such as cameras, microphones, etc. In order to process this data mass, new technologies and analysis systems are necessary.

body enhancement
Refers to any kind of improvement, both physical and mental, of the capabilities of the human body and its external appearance.

brainfood
Foods to improve mental performance or for stress reduction.

brainwave recognition
Brainwave recognition, for example to control computers or prostheses solely by means of thought activity.

cloud (computing systems)
An IT model in which data is not saved on dedicated hardware, but rather is saved on the internet so that it is available at any time from any location having an internet connection.

cognitive computing systems
By means of learning algorithms and artificial intelligence, cognitive computer systems develop the ability to understand humans, to learn from them, and to make independent decisions.

customer journey
This term refers to the totality of all points of contact between a customer with a brand, in direct communication with the company or in indirect communication about the company or product, either before, during, or after the sale.

Internet of Things
The Internet of Things refers to the increasing networking of all objects in everyday life and in business.

contact point / customer interface
Potential situations or locations where the customer can be approached directly and personally (consulting conversation, store, website call-up), and also the contact persons through whom the company and the customer come into mutual contact.

M2M
Machine-to-machine interaction refers to the flow of information and to automated communication between terminals; in logistics it refers, to containers, shelves, products, vehicles, etc., which allow an increasing level of autonomous processes in production and logi-stics.

man / machine interface
Point of contact and interaction between humans and devices, often with the use of technological support from smartphones, sensors, etc.

mobile device / terminal
Any device that allows the use of the mobile internet. Today this means chiefly smartphones and tablets.

mobile payment
Wireless payment over a mobile telephone.

Moore's law
A law which states that the computing power and complexity of a circuit will double approximately every 18 months.

omnichannel management
A continuation of the multichannel approach. The coordination and control of activities of all company divisions according to a strategy of creating, across all communication and touch points – and without media interruption – a unified one-to-one experience for the customer.

point of sale (POS)
Sales location from the perspective of the consumer, for instance a (branch) store.

predictive analytics/ smart forecasting
Predictive analysis refers to an approach which combines different statistical methods – such as data mining and fact finding – in order to generate forecasts. This technology enables, for example, an early recognition of customer requirements and thus the ability to offer a product that has already been individualized to fit the customer's needs— if she so requires.

roadmap
Project plan (literally "road map") for a crude preparation to deal with future, long-term developments and for a better overview of necessary measures.

sharing economy
The systematic lending of objects and items and the mutual provision of areas and surfaces, especially through private individuals and interest groups, i.e., the sharing of human and physical resources. The term was coined by the Harvard economist Martin Weitzman.

tracking
The "tracking" of customer actions to obtain personal data from customers, to be used to individualize company offers and the sales approach.

real-time tracking
Tracking systems in logistics allow a permanent tracking of products due to applications that process and display the progress of the products in real time and offer customers a maximum amount of transparency and flexible decision making.

trend cycle
A compilation of all those businesses – both within and beyond a given industry – which possess sufficient resources that the strategic decisions they make today have a significant influence on the future of the industry.

trust center
A trustworthy external entity – also referred to as a "trusted third party" – that certifies the identity and trustworthiness of a given communication partner.

usability
The usability of a product or service for a given customer. This includes the context of use, as well as the desired effects and aims, in order to optimize customer satisfaction.

The 2b AHEAD ThinkTank is one of Europe's most modern institutes for trend analysis and future studies, and employs both scientists and policy advisers. For its customers, the 2b AHEAD ThinkTank analyzes – using scientific trend studies – both the opportunities and risks associated with trend developments in their businesses. The 2b AHEAD ThinkTank not only analyzes within the target industry, but across industry boundaries, incorporating all stakeholders that shape the future of the respective business model. With its analysis, the 2b AHEAD ThinkTank helps its customers to understand who or what drives their relevant trend environment and for what reasons.

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Whether it's offloading containers in New York harbor at night, shipping Silver Arrows across Europe for Formula One racing, or urgent air freight transported from the Far East to Hamburg, the professionals at DB Schenker are hard at work for their customers around the clock. DB Schenker is the logistics subsidiary of Deutsche Bahn (German Rail) and one of the world's leaders in the areas of ground transport, air and sea freight, and contract logistics.

DB Schenker's global network is active in 140 countries and our nearly 65,000 employees annually move 99 million shipments across Europe using ground transportation, 2 million standard ocean-going containers and 1.1 million tons of air freight. Shipments in 12 DB Schenker Smartbox-variants are constantly monitored with intelligent shipment controls, using the most modern Eco warehouses all around the globe having over 7 million cubic meters of storage space, and all this while reducing CO_2 emissions by 35%.

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