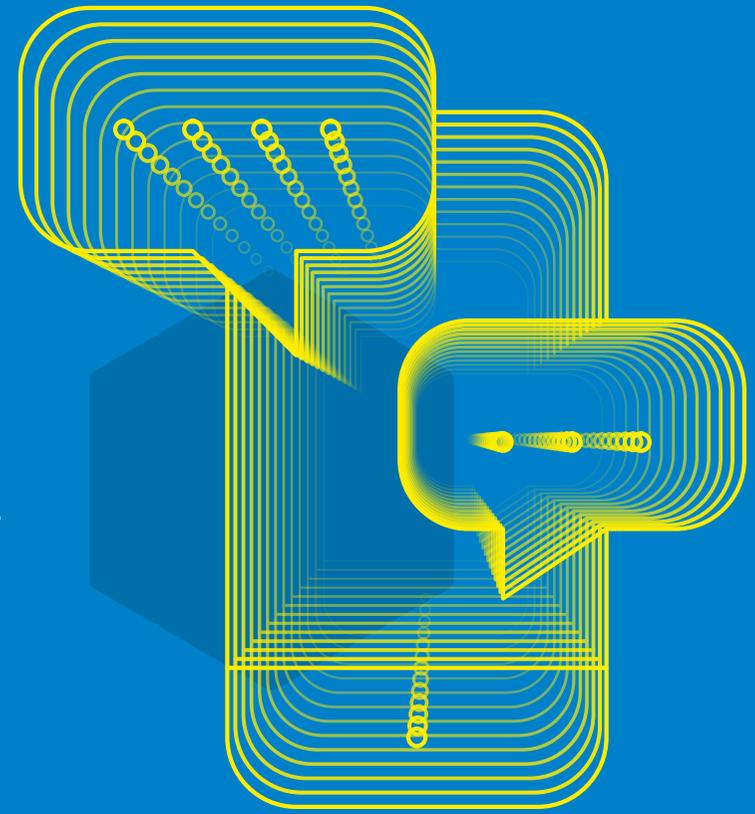


REPORT

Customer
service
chatbots

**Service
automatically
gets better**



Foreword

Chatbots – service automatically gets better

Dear readers,

Whether midnight or midday, a public holiday or a Friday, you want to offer your customers an excellent service. Even when your number of contacts is increasing and you're short of staff. Chatbots open up new opportunities for you. They help to automate parts of your communication without compromising on quality. They reduce waiting times without putting more strain on your employees. They improve the performance of your customer service without you needing to invest heavily in personnel, training or infrastructure. Chatbots change the options available to you as a decision-maker as part of your customer service. We present a whole range of these possibilities in this report. This includes the application that explains the new car you've purchased as well as the chatbot that relieves the burden on processing.

But first of all, I would like to dispel a prejudice: modern dialogue-based language or text systems are far removed from their annoying predecessors such as Microsoft's Clippit Office Assistant from the late 1990s. The mature applications allow dialogues that are limited to specifically defined use cases and come close to an exchange with human employees. Our survey of 1,000 end customers shows that such systems are accepted. Those who already have experience with chatbots rated the communication favourably – 59 per cent opted for 'good' or better. This acceptance is the foundation for your new processes. You can find out more about chatbot facts from our survey on the following pages.

For more
information,
visit
ki. adesso.de



Draw inspiration from the examples. We are happy to help you develop systems that fit your processes and requirements. For this purpose, we have developed a whole range of chatbot tools to make your life easier.

Let's talk about it, person to person and without a chatbot between us: inside@adesso.de

Best regards,

**Hans-Peter Kuessner | Head of Competence Center
Cognitive Computing | adesso SE**



In January and February 2020, we conducted a survey on the topic of Artificial Intelligence together with the market research institute Heute und Morgen GmbH. The main focus was on chatbots and cloud technologies. 318 company managers and 1,000 end customers completed the online questionnaires.

Nearly one in three companies relies on text chats.

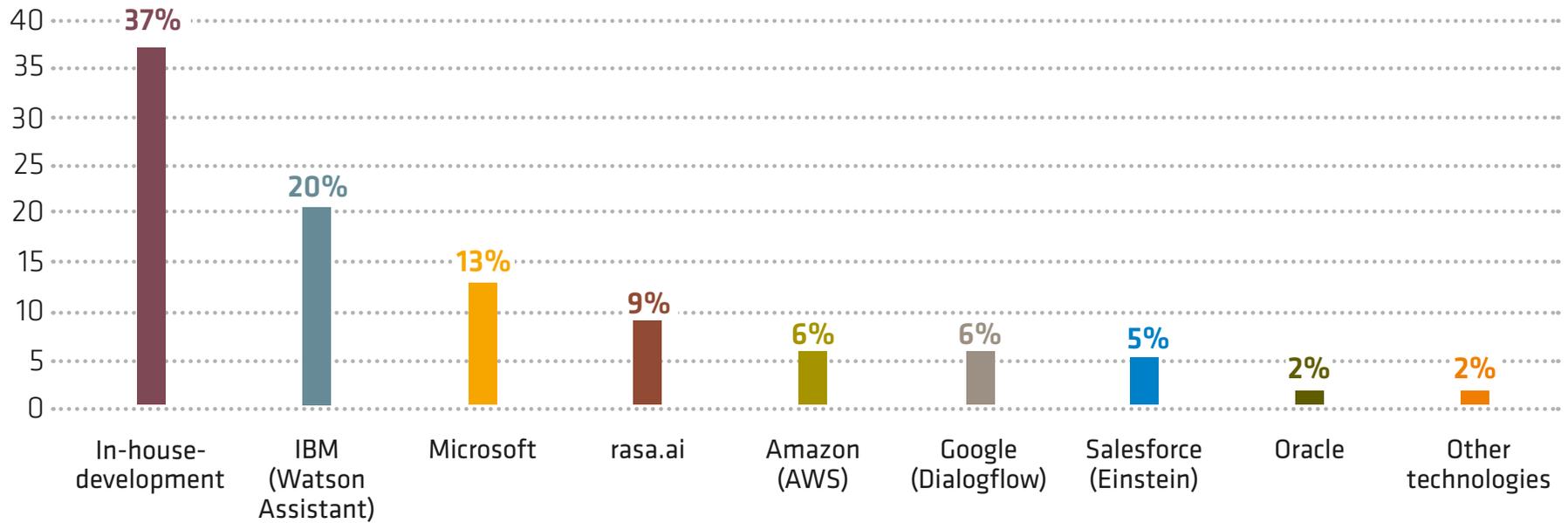
Special chatbots

They're there to chat

In many companies, chatbots are among the first AI application scenarios. The dialogue-based systems are often used in external service processes – and they perform well here. The vast majority of customers are fine with communicating with a chatbot. Somewhat surprisingly, those who already have experience with chatbots rated the communication very favourably – 59 per cent opted for ‘good’ or better. This means that the applications are not perceived as annoying, but rather as helpful. However, The application scenario is decisive. For example, only a minority of respondents can imagine opening an account through a chatbot. As an online shopping advisor, on the other hand, it is seen as viable by many people.

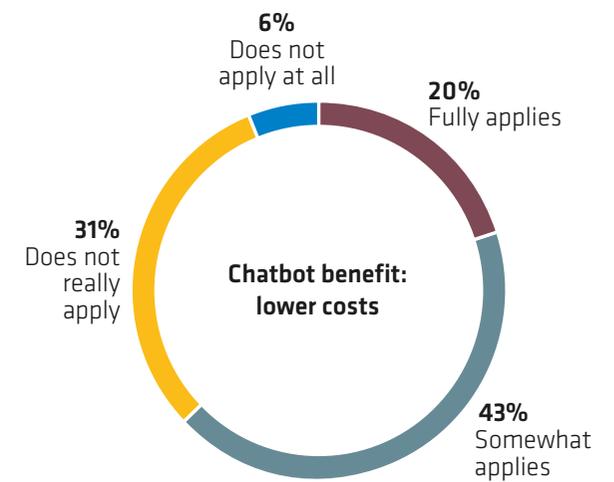
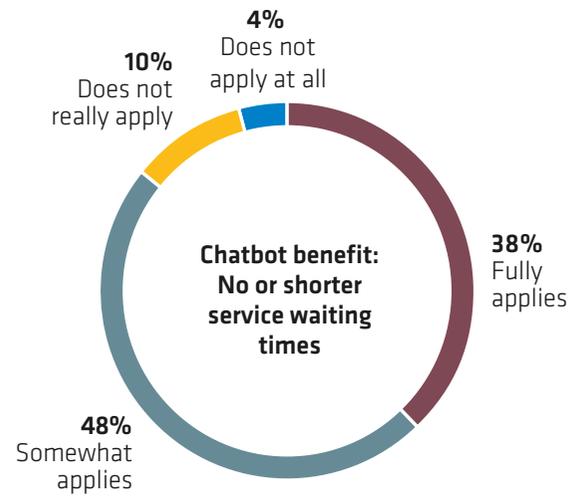
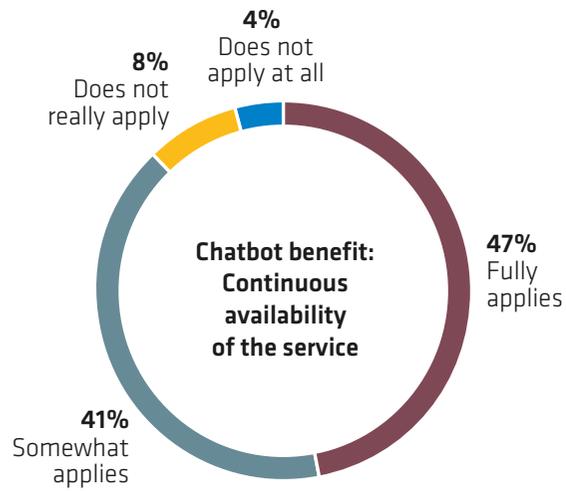
DECISION-MAKERS

Which technology platform do you use or plan to use for your chatbot projects?



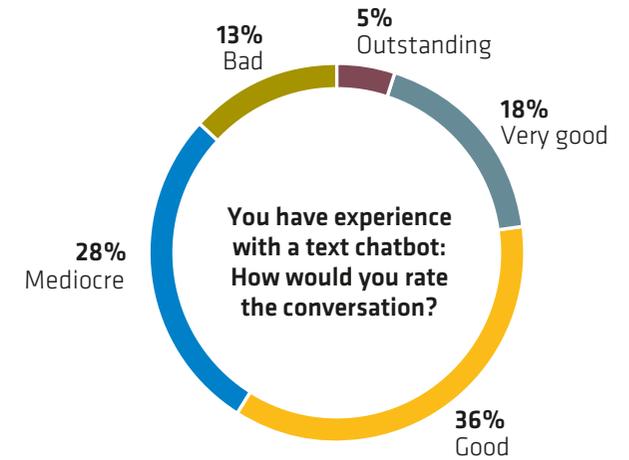
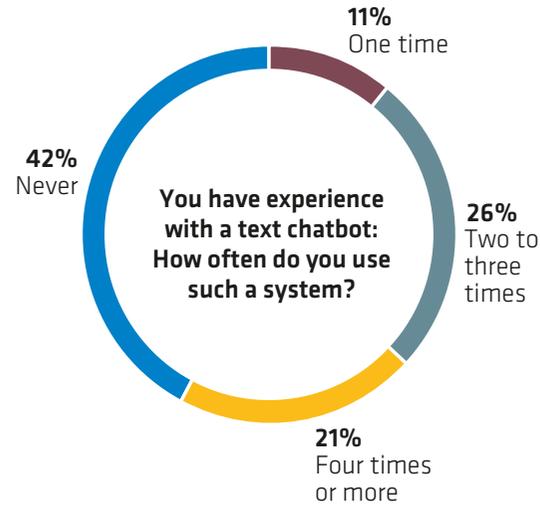
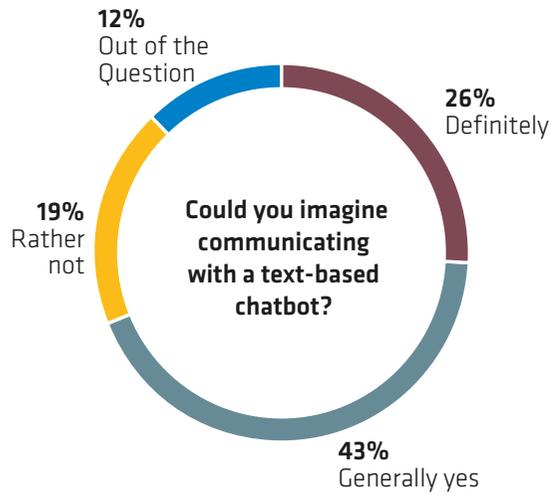
Source: adesso SE | ki.adesso.de

DECISION-MAKERS



Source: adesso SE | ki.adesso.de

CUSTOMERS



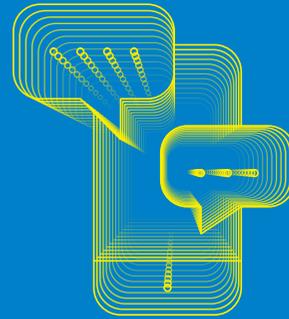
Source: adesso SE | ki.adesso.de

Six tips for building and maintaining smart chatbots

More requests, more topics, more complexity: if these keywords describe the situation in your customer service, chatbots are the right answer for you. The AI-based systems help your customers to clarify their concerns faster, at any hour of the day or night and without them having to wait. And they help you to automate your processes, relieve your employees and reduce your costs without you having to compromise on quality.

Make yourself independent of IT departments and AI professionals when building your chatbots. After all, when it comes to the expectations of your customers and the processes involved in your service, you know best.

These six tips help you to take matters into your own hands. Build solutions to help customers with enquiries and impress your management.



Are you thinking about whether you can also make your customers happier by using chatbots? Visit [ki.adesso.de/chatbot](https://ki. adesso.de/chatbot) to learn more about the tools you can use to build chatbots.

1

Define exact areas of application

Chatbots are not Swiss Army knives, but specialised tools. The more precisely the task area is defined, the more impressive the answers are. The result: more appropriate dialogues.

2

Translate customer requirements

What does the enquirer want to know? You have to work out the intentions behind questions and prepare them for the chatbot. Your experience and expertise will help you to do this. The result: more precise answers.

3

Train chatbots permanently

A strength of chatbots: when used correctly, they get better and better as they get used more and more. Analyse frequently asked questions and the resulting answers. The result: higher hit rate.

4

Work with familiar tools

You do not need to be an AI expert to build and maintain chatbots. Well-thought-out user interfaces and the use of Excel help with day-to-day work. The result: simpler editing processes.

5

Think beyond the individual dialogue

Chatbots will assist even when they cannot help: the systems recognise the content and intentions of enquiries, prequalify and forward information to the right contact persons. The result: faster service.

6

Use an integrated platform

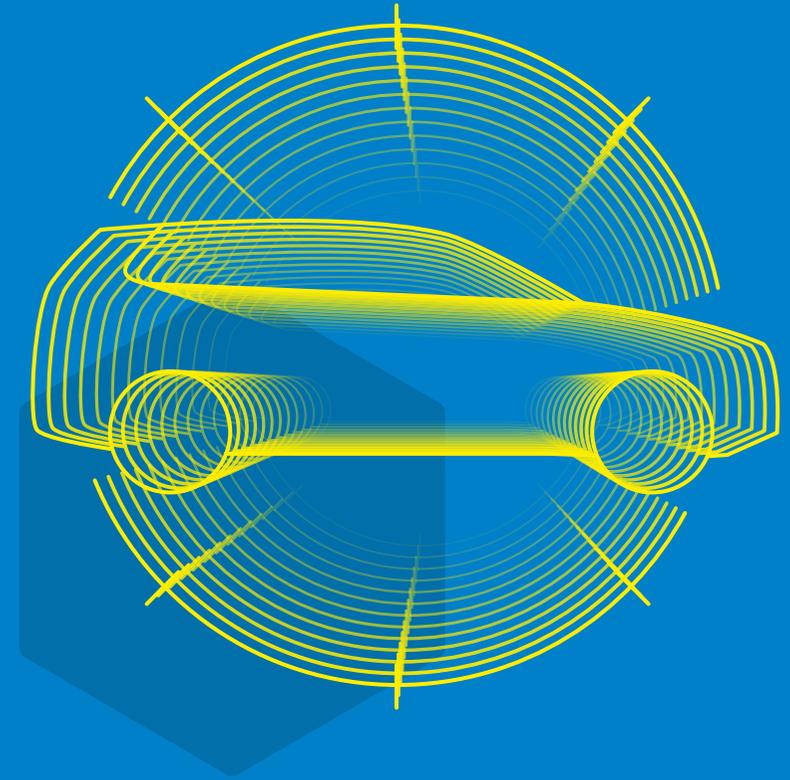
Whether WhatsApp is used or contract data from a CRM system: chatbots are strongest when they process many input channels and access a wide range of data. The result: more comprehensive advice.

How AI is revolutionising our relationship with the car

Artificial Intelligence meets real world

Ask Mercedes

Take a seat in the car and let your eye wander over the still-unfamiliar cockpit. Is there a control that is not immediately obvious as to what it does or a function you cannot find straight away? Just Ask Mercedes. Daimler is enhancing communication with additional digital channels, making leafing through operating instructions, handbooks or quick start guides a thing of the past. The 'Ask Mercedes' application ensures that every user gets their bearings in the vehicle quickly. The virtual assistant is activated by voice, using a smartphone keyboard or camera. A system comprising Artificial Intelligence (AI) and Augmented Reality (AR) running in the background then ensures that even a modern car with its numerous functions, possible configurations and assistance systems can be understood at the drop of a hat.



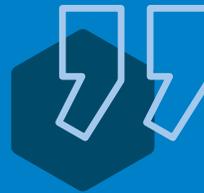
**The
concept****MORE FUNCTIONS, YET LESS COMPLEXITY**

The idea for this chatbot application was born during Digital Life Day 2016. The aim of Daimler's in-house format is to identify trends and digital topics. Employees are encouraged to present and submit their ideas in this mix of Ideas Exchange and workshop. The participants identified the chatbot concept as a modern way of making it easier for customers to interact with their vehicles. Vehicles offer more and more functions, which also makes them increasingly complex.

Everything then happened very quickly following the Digital Life Day: A so-called minimum viable product (MVP) was developed to test the feasibility and the acceptance of the chatbot. At the end of the MVP phase, the participants were certain that chatbots can make sure that Mercedes-Benz customers get to know and experience their vehicle in a completely new way. The experts then added another future trend to the concept – Augmented Reality. The functionalities of Ask Mercedes are built on these two pillars.

“We wanted to develop a system that doesn't just provide information but is also simply fun and encourages customers to engage in a dialogue.”

Stefan Hussmann | Head of Automotive & Transportation Line of Business | adesso SE

**The
benefit**

Daimler is positioning Ask Mercedes precisely on a customer pain point. The range of functions in vehicles and the supplementary service offer is continuously increasing. That's why it is becoming more and more important to engage in a close dialogue with customers. The company wants customers to be able to inform themselves and get answers to unresolved issues anytime and anywhere. The first step of this process should be as simple and interesting as possible for the user. This is why additional quick start guides and tutorial videos are available on the website alongside the detailed operating instructions. Ask Mercedes is not replacing the previous sources of information; it is simply providing the driver with another way of getting to know their vehicle. The application is a new, interactive addition to the options for communicating with customers.

This eliminates the need to search through pre-set structures such as alphabetised lists. Instead, Ask Mercedes always puts the needs of the customer and their situation first. It gives them the exact information they need at that specific moment whilst remaining both charming and informative.

**The
project**

In April 2017, Daimler and adesso set about developing this infrastructure. They released the first iOS version of an app just seven months later. In this short period of time, they together established the technical foundations, developed the application and coordinated the content creation process.

To kick off the Ask Mercedes project, the experts from Daimler and adesso chose IBM Watson as the AI basis and decided on components from Vuforia for the AR side. But this technology is just one aspect of Ask Mercedes. The team was faced with the challenge of giving an Artificial Intelligence a personality.

**The
chatbot****A CHATBOT WITH CHARM**

Ask Mercedes is not just a pure information system. Interacting with the app should feel natural, be it via speech or text. This means the user should forget that they are communicating with a chatbot rather than a person.

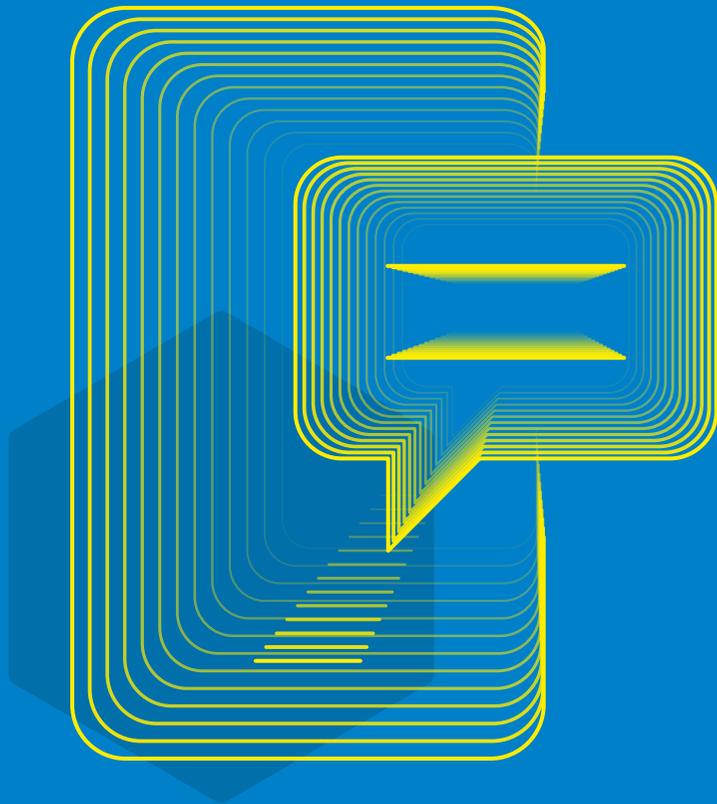
The idea is that the chatbot does not simply display sections from the manual that might fit the search. It should be a knowledgeable chatbot having a conversation with a driver about their car.

The fact that Ask Mercedes comes across this way is down to the attention to detail displayed by the team during the development of the 'Mercedes' chatbot personality.

**The
result**

The team first designed a complete personality profile. The chatbot was then fed with facts about the car and taught to find the correct answers to the most important questions. To do this, information from every department involved was gathered, which the team then made compatible with the app. At the same time, the participants initially collected around 6,000 customer responses and analysed queries sent to the Daimler Customer Contact Center over the course of just under a year. This gave the team a detailed insight into the information needs of the customers.

While this took place, the participants set about breathing life into the personality profile. After all, it is important that Ask Mercedes' unique personality also shines through in the way it answers, sometimes with a wink, sometimes with a bit of attitude. "A lot of users began to grill the app a little bit after they had asked the first few technical questions," says Stefan Hussmann. As part of the conversational user experience concept, adesso hired scriptwriters to come up with the most creative and surprising answers possible for Ask Mercedes to give in this situation. Just a hint: Ask about the lottery numbers.



An AI system that rises to the top during peak times

Even when things get tight: your chatbot will no longer break into a sweat

How things used to be

One thing is a certainty for insurance companies when the end of the year rolls around: Policy holders receive their annual premium invoice. Information on changing annual premiums, no-claims bonuses or tariff criteria always raise questions for customers: Why did my premium increase? How can I bring it back down? What tariff can I change to? These and similar questions mean that customer service departments are stretched to their limits – and sometimes beyond. In turn, this has a range of negative consequences for the company, with increasing workloads and decreasing service quality leading to a drop in customer satisfaction.

Then AI entered the picture

The use of AI-based systems reduces the strain on customer service staff. Insurance companies can implement specific solutions such as using chatbots to answer standard queries. The benefit for policy holders is that they can immediately get in touch with the company at any hour of the day or night, regardless of whether they prefer to do it over the phone, using their smart speaker, via e-mail or using social media channels. This means that customer service staff can focus on the more complex cases rather than deal with the tsunami of easy-to-solve standard queries. This allows insurance companies to offer a higher quality of customer service for the same amount of effort.

The AI application searches the IT systems for data on the policy holder for each query. This means it can provide the customer with real-time information on new tariffs, deadlines and contractual changes. Chatbots can be configured to carry out transactions such as changing a tariff. They can also recommend other offers (known as the next best offer).

The situation today

Policy holders have a range of options available to them to get in immediate contact with their insurance company and sort out their issues directly. They can switch between channels in any way they want within a dialogue and a member of staff can take over, if needed.

Further information



Which companies would benefit most from this approach?
Insurance companies and companies with complex customer service structures



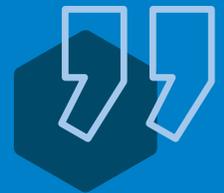
Which decision-makers would find this approach interesting?
All managers involved in customer service and sales



Background information for those interested in technology:
natural-language understanding, AI services from Google (Dialogflow), IBM (Watson)

“Using AI to automate customer contact is no longer confined to the realms of sci-fi in this day and age.”

Prof. Dr Jürgen Angele |
Head of Competence Center AI
adesso SE



An AI system that enables case-closing processes

Policy holders receive the best advice

How things used to be

Statutory health insurance companies are subject to different rules to those imposed on companies in the private sector: Legislation significantly restricts their scope in terms of the range of services they can offer (product portfolio). If insurance companies want to set themselves apart from their competitors, they need to focus on offering both an attractive price and a high quality of service. Online branches are a crucial tool for many insurance companies. They allow policy holders to access their information and claims easily at any hour of the day or night and from anywhere.

But if managers want to expand their online services by offering a live chat feature with administrators, they are quickly stretched to their limits. One reason is that providing this type of customer advice is resource intensive and prone to error due to the complexity of the subjects being discussed. Furthermore, working hour regulations, staff costs and staff availability mean that insurance companies cannot really offer a daily 24-hour chat service. Plus, few companies make use of the chance to combine case-closing advice together with the corresponding black-box processing. Online services are often limited to simple processes such as changing an address or bank details.



Then AI entered the picture

An AI application allows insurance companies to provide online customer services on a large scale, including case-closing advice. To do this, the system analyses the text in the chat and derives the issue from it. Targeted questions help the application to guide the policy holder through the entire conversation and to give case-closing advice (for example, fully processing a claim including the decision as to whether it is approved or denied) based on the information acquired during the dialogue. Customers can upload any documents they have scanned that are necessary for the process such as income statements or claim documentation via the chat window. The AI solution detects the content of these documents and can read the information contained in them before then using it directly in the process in question. The system can also access customer-specific information stored on the production systems, which it can use in the conversation with the customer.

If needed, the application will call in a customer advisor who will continue the consultation. The policy holder experiences a seamless and comprehensive consultation process.

The situation today

Thanks to AI, insurance companies can give their customers tailored advice, even when dealing with complex matters. This means companies can improve their service offer during peak times and outside of regular working hours in particular. It also offers another efficient approach to process automation and black-box processing.

Further information



Which companies would benefit most from this approach?

Insurance companies, authorities, companies with services that require a lot of consultation



Which decision-makers would find this approach interesting?

All managers involved in marketing, customer service and sales



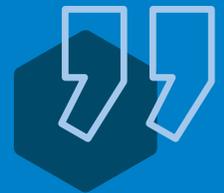
Background information for those interested in technology:

machine learning (supervised learning), robotics and natural language

“Supporting the consultation process using AI is an intelligent approach to process optimisation that contributes to improving customer satisfaction and leads to further automation.”

Michael Schmal |

Head of Business Consulting
adesso SE

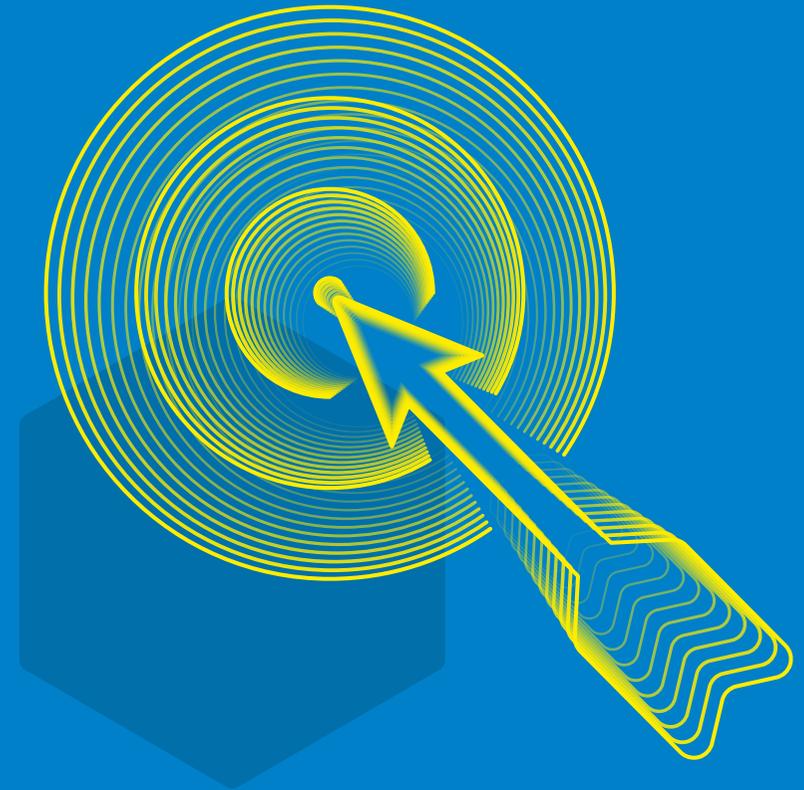


**An AI system that can keep track
of any number of customer requests**

Complexity decreases and satisfaction increases

How
things used
to be

Customers have an unprecedented range of communication channels available to them for getting into contact with companies. These include e-mails, web forms, instant messaging and social media platforms, new chatbots and more traditional channels such as fax or post. Maintaining a good overview in the customer service department is a complex task that ties up resources. Employees have to merge the same requests from different channels, share them with the right processors and monitor the processes. Having to process operations in different departments makes it difficult to maintain a good overview of the overall process. This results in a duplication of work, unnecessarily long processing times and miscalculations.



Then AI entered the picture

The AI-based ‘adesso cognitive communication center’ lies at the heart of customer communication. This system collects incoming messages and requests from all the individual input channels and firstly extracts metadata such as e-mail addresses, names and companies. It supplements this with existing information from ERP, CRM or project databases. Natural language understanding processes allow the system to understand the content of unstructured texts. The centre forwards the message to the correct processing system, follows the processing operation and allows the responses and answers to be matched to the open requests.

This results in automated and transparent communication processes that work efficiently, even on a large scale.

The situation today

As an information hub, the ‘adesso cognitive communication center’ ensures that communication processes in complex structures run smoothly. The decision-makers and all those involved in the process gain an insight into each individual process and enjoy an overview of the overall situation. This is the case throughout all departments and all communication structures.

Further information



Which companies would benefit most from this approach?
All companies



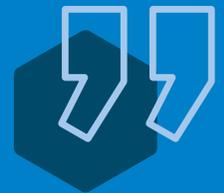
Which decision-makers would find this approach interesting?
All managers involved in customer service, sales and corporate communications



Background information for those interested in technology:
natural-language understanding, natural language classification, Tone Analyzer

“The coordination of customer requests is so complex and multifaceted that manual work dominated up to now. Nowadays, AI applications are able to understand who sent the request, what they want and who can help them. By doing so, automation is able to help both employees and customers.”

Hans-Peter Kuessner |
Head of Competence Center
Cognitive Computing
adesso SE

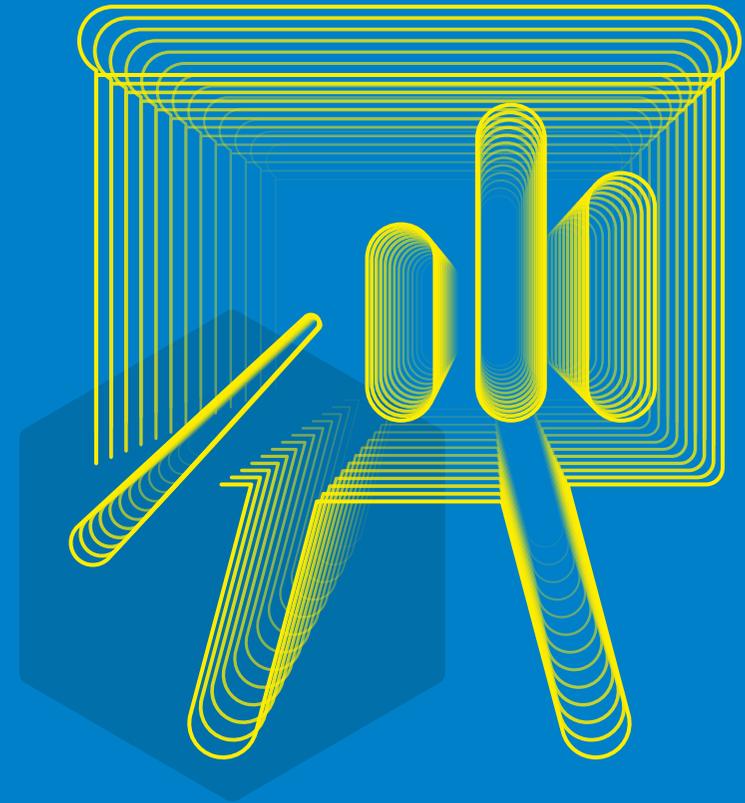


**A workshop that uncovers
the AI potential in processes**

**You should make
the best use of AI.
Don't just do the first thing
that comes to mind.**

How
things used
to be

Should we use a chatbot in our customer service? Or would it be better to develop a voice solution integrated into a Smart Speaker to aid the order process? Maybe we could impress our customers with thoroughly customised, automatically generated content instead? Companies can use AI technologies in a variety of different application scenarios. Selecting the right approach and the right use case is crucial to the success of AI projects. The teams still lack the experience to be able to accurately evaluate individual application scenarios and technological potential. The danger is that decision-makers aren't focussing on the right AI topics.



Then AI entered the picture

Workshops in what is known as the Interaction Room (IR) are the key to developing use cases for AI. The Interaction Room is a project method developed at the University of Duisburg-Essen. It helps project participants to visualise interrelations and to identify risks as well as cost and value drivers in projects.

We establish use cases tailored to your company and your goals together with our IR and AI experts. Thanks to our tried-and-tested workshop concept, it only takes us two days to guide you through the process, from initial brainstorming, to analysing existing data sources and designing and prioritising use cases. At the end of the two days, you'll know what your company should focus on as it pursues AI.

The situation today

Once the workshop is over, the participants will have an understanding of what can be achieved with AI – from understanding its potential to integrating AI applications into existing processes and IT structures.

Further information



Which companies would benefit most from this approach?

All companies that are searching for AI use cases

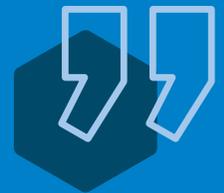


Which decision-makers would find this approach interesting?

Anyone involved in AI projects, especially sales, marketing, customer service and IT

“The Interaction Room helps our customers to identify their AI potential, stay on top of complex AI projects and focus on the important things. Rarely has it been so easy to commit specialist departments and IT to one goal.”

Jacqueline Maier |
Team Lead Data Science
adesso SE

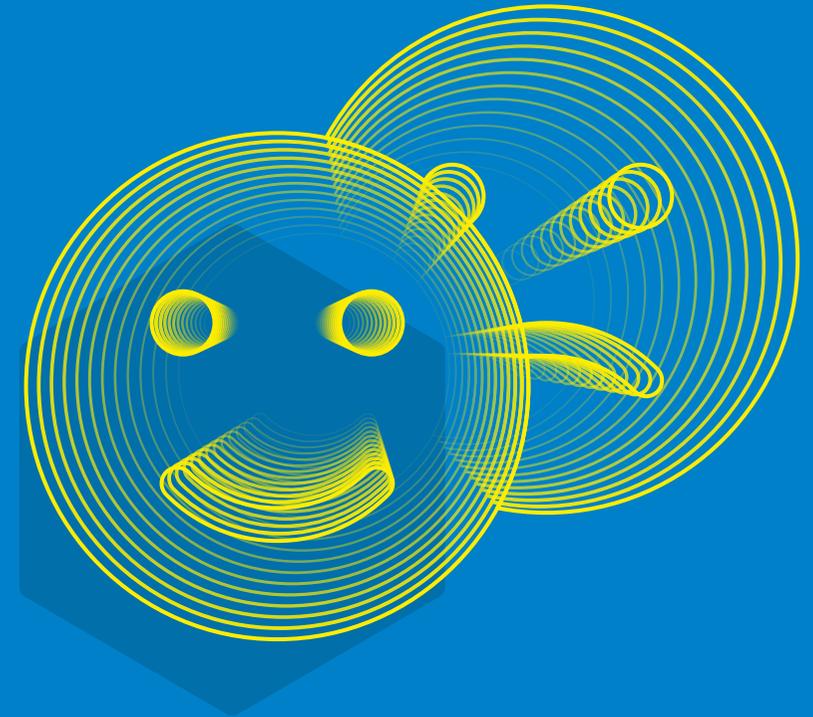


An AI that can read the room

You can now judge the mood of your chatbot better

How things used to be

Facial expressions, gestures and tone of voice all help to infer nonverbal information communicated along with what someone says out loud during a face-to-face conversation. This allows the people involved to judge the mood of the other person more accurately. They can then guide the conversation accordingly. This type of information is often lost in communication channels such as letters, telephone calls, e-mails, online forms, social networks or chatbots. Insurance companies that offer these services are faced with the challenge of assessing their customers' moods. In addition, they have to do this on a large scale, as countless customers use these communication services. The aim is to not just answer customers' queries reliably, but also to read between the lines. For example, to identify a dissatisfied policy holder or recognise when a customer is about to cancel their policy, even if they haven't explicitly said so.



Then AI entered the picture

An AI-based solution helps insurance companies to do this by using a tool to measure customer satisfaction. The application ‘provides assistance’ automatically in the background. The solution can judge the mood of a text based on the choice of words, expressions and use of punctuation or special characters. A similar solution uses tone of voice and how words are emphasised for phone calls. The system can then assign individual policy holders to groups with a similar degree of customer satisfaction based on these parameters.

Managers can then go beyond simply processing queries and define strategies and measures to improve satisfaction within individual groups. A system supported by AI can also help perform tasks, for example, by monitoring measures and measuring success.

The situation today

Thanks to this AI solution, the customer service team can focus its resources on the relevant customer groups and take precautions early. Managers invest in the places where they can influence customer satisfaction in the long term.

Further information



Which companies would benefit most from this approach?

All companies with their own service hotlines



Which decision-makers would find this approach interesting?

All managers involved in customer service and marketing

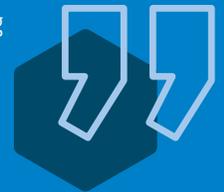


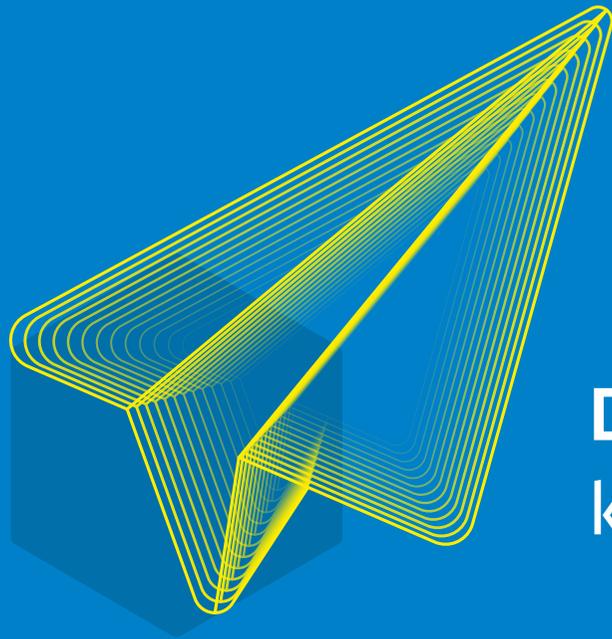
Background information for those interested in technology:

Regression problem with a weak temporal dependency

“At first glance, IT and emotions aren’t directly compatible. But this AI application is anything but emotionless. It helps insurance companies focus more on the customers who really need it.”

Michael Schmal | Head of Business Consulting
adesso SE





Do you have any suggestions?
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