Moral machines
and subjective humans

Short-term figures inhibit entrepreneurship
Customer experience deluxe at SIX and Sprüngli
Software for customer dialogue and privacy
“We are not interested in short-term figures.”

We are not particularly interested in quarterly results. No one at BSI is evaluated according to turnover, profit or whether budgets are reached. It is banal to make a lot of profit in a short time and it is banal to measure performance with key figures. It would be an insult to the intelligence of our employees if they would not outwit them. Nevertheless, we do have an evaluation system, simply not one that is mindless or superficial. We honor long-term goals. The evaluation of performance in our company is made based on gut feeling, which subsumes countless factors and is based on many years of experience of weighing and ranking these factors.

Having this intuition, this gut feeling, is today a task of our employees – knowing they are people with their advantages and disadvantages: moods, biases, mistakes. Would the evaluation be fairer if we could delegate it to a machine in the future?

Researchers preoccupied with self-learning systems seem to be on the path to finding something akin to mechanical “intuition.” With each action and each decision, the system changes and optimizes each subsequent action or decision – with the corresponding data volume it quickly makes up for years of lacking experience. We are approaching exciting times. If large companies, with mountains of data and intelligent systems, can react faster than start-ups, then the structure of our corporate landscape is bound to drastically change.

This issue is dedicated to machine learning (ML) and its impact on our business, the way we interact with customers and the speed with which we could adapt to changing customer needs. Read more about this in the keynote on page 4 and the employee interview on page 10. In which areas would you like to see ML? We would be pleased to receive feedback from you.

Have fun exploring.

Catherine B. Crowden, Editor-in-Chief

Will human artists still be needed in the future? DeepArt is a self-learning algorithm that creates art. At deepart.io, you can upload photos and choose a style. DeepArt analyses the image and applies the style characteristics to the photo to create a unique work of art.
Which characteristics must humans bring into the age of machine learning, in which situations are humans unbeatable and in which are machines top, and how long will a human workforce still be needed? Six astute people present their diverse perspectives on artificial intelligence and machine learning.

Increasing numbers of software programs surprise us with intelligent tips every day: Google Maps calculates the fastest route to work, Amazon suggests appropriate books, while Facebook warns of rain showers. However, not only in mundane matters, also in medicine, the legal world and in the office, machines are taking on more and more duties. They relieve us of routine tasks, process large data volumes and recognize patterns. How practical the solutions are depends today on how intelligently the rules for these decisions have been programmed. Deterministic algorithms are automatically executed by computers. The same false decisions are repeated numerous times. However, researchers have long since been experimenting with self-learning systems - which means that they do not stipulate how a problem should be solved, but instead program learning methods. The initial results of the paradigm shift from artificial intelligence to machine learning is now beginning to impact our lives and will significantly change how we work, communicate and manage relationships.

The chemistry professor on the invincibility of humans
What can humans, those error-prone, forgetful beings, of fer to counter a 24x7 learning machine? "Critical thinking!" answered Gerd Folkers spontaneously. The ETH professor for pharmaceutical chemistry and president of the Swiss Science and Innovation Council, is convinced that humans are unbeatable in their ability to do the "unexpected." When it comes to remembering, not forgetting and blending out, machines beat humans. We will therefore situationally outsource decisions to machines in the future: "A brain operation without a robot, imaging procedures and simulation technology are already nearly unimaginable today without machines. The advice of a doctor is not always free of side effects - there is no such thing as absolute objectivity. That is why a machine could know more about me as a patient than the doctor does," according to Folkers. For example, a patient neglects to tell the doctor that he frequently forgets to take his pills or simply refuses to do so. A machine, such as an Apple Watch, would be able to analyze the behavior and then inform the doctor. "This offers a positive aspect for my health and a negative one for my self-determination. What is better? I don't know!"

So who should one trust in case of doubt? Do machines make better decisions than humans? "If the opposing attorneys could broadcast advertising spots to influence juries and judges, then I would rather be judged by a machine. If the artificial intelligence of the future watches advertising spots on television, then it would no longer make a difference," asserted Folkers, taking the idea further.

The innovation expert on the added value of humans
Which tasks will humans carry out if machines can take on routine tasks and everyday processes? "The range of tasks to be completed by humans will increasingly lie where systems or software do not provide added value," opined Stephan Sigrist. The head of the renowned Swiss think tank W.I.R.E. is convinced that humans are unbeatable when it comes to recognizing complex associations, finding solutions or the development of surprising ideas in areas in which no experience yet exists. The scientist also attributes empathic abilities and trustworthiness to humans: "Counter to expectations, automation will not only impact people with low levels of education, but all professional groups. Even for CEOs, up to 30% of activities could be eliminated." Conversely, particularly "simple" work - such as garden work in difficult terrains or caring for people - will continue to be performed by humans in the future. The complexity of the required skills does not correspond to the strengths of the machine. Stephan Sigrist assumes that in the future both the preparation of decisions and simple decisions will be outsourced to machines: "We will thereby gain more time or the freedom to dedicate ourselves to other things. By the same token, we will rely more on data when we make decisions," according to the innovation expert. Whom would he tend to trust: the machine or the doctor? "For
The doctor as “human interface”

Eberhard Scheuer knows that machines can already deliver better diagnoses than humans. The qualified psychologist and e-health expert even assumes that the tipping point has already been reached in medicine. “When it is a matter of clearly defined questions with a good data situation, then the machine beats the human every time: it is faster, less prone to errors and always reaches the same conclusion,” according to the founder of the forum “Digitale Gesundheit” (digital health). Nevertheless, he does not believe that it will be possible to replace the medical profession with machines. “Pure rationality is just part of what it takes to be a doctor. Humans in combination with machine learning will be the model of the future. The doctor can be the interface for the conveying of therapy recommendations made by the machine.” In order for machine diagnoses to really be “useful,” they must be transparent and forgery-proof. The expert recommends using two separate independent systems, and to consider the result only when they match; which is where the doctor in his role as empathic intermediary truly comes into play. And what does the lawyer think of this?

The lawyer: “Human judgment is better”

The lawyer Christian Laux, who is specialized in the fields of IT and digitalization, says that when it comes to legal rulings, the judge’s decision must “only” (but nevertheless) be convincing. They may not violate the principles of law and an established methodology. “But it can be said that a result is never correct if the superior judge is not convinced. This shows two things: Law is a dialogue and decisions must be convincing.” The lawyer does not assume that judges will be replaced by machines in the future. “However, it is possible that the ‘scope’ of the judges will grow smaller.” With this statement, Laux hits at smart contracts: digital contracts which automatically check and carry out the contract conditions. For legal questions that are more significant, automation may be conceivable, but more for simplifying findings and legal applications, not to replace them. “The decision must ultimately be made by a judge. That is because humans have better judgment than machines. Especially when a machine is used to make decision-related knowledge more quickly and reliably available.”

The politician on bots as opinion mercenaries

Machines are being increasingly used in politics – in part with unforeseeable consequences, confirmed National Council member Regula Rytz: “Machines select, filter, like and ‘speak’ online – all with the goal of spreading pre-programmed opinions and to oil the advertising machine.” The president of the Green Party considers this development to be dangerous: “Bots are digital opinion mercenaries and therefore represent a threat to democracy. This means that it is more important than ever to encourage critical thinking and independent media with journalistic quality!” Nevertheless, in view of the latest developments, we may now and then get the feeling that better decisions can be made with the help of machine learning than may be the case in a democracy – ultimately, a system could combine all the experiences related to the respective situation to achieve an optimal solution. Regula Rytz was only willing to go along with this idea so far: “Machines can support people in forming opinions. Democratic decisions, however, are always multidimensional and cannot be reduced to the binary world of machines. Human politics requires a head, a heart and a backbone!”
The ethics professor on the unique characteristic of morality

The ethics professor Peter G. Kirchschläger from the University of Lucerne doubts that machines can develop moral judgment, a conscience or an understanding of the spirit. “In my opinion, what especially differentiates humans from machines is their morality.” In this, the ethicist counts an attitude based on respect for human dignity, autonomy and reasonableness - and emphasizes the ethical rationality that is based on the human understanding of spirit, in contrast to the technical rationality, which derives from data and focuses on purpose. At the same time, the ethicist suggests that machines are already superior to humans in various fields of intelligence. It is to be assumed that further intelligence fields will be added to these. “Therefore, humans should already deal with the possibility of ‘super intelligence’ in order to establish a standard framework that guarantees a dignified life for all humans in the future.” Peter G. Kirchschläger sees the potential of machines primarily in the decision-making process: “Current pilot projects involving ‘machine judges’ are failing, in part, from a lack of the legal tradition of mercy. Therefore, a partnership between humans and machines with clearly defined task fields would be practical, in which the interpersonal must always be central and the responsibility must always remain with humans due to their unique human morality.”

Moral machines?
Can machines also learn morality? MIT has launched a learning platform towards this end, to teach morality mechanically: moral dilemmas are shown in which a driverless car must decide for the “lesser of two evils,” such as having to choose between killing two passengers or five pedestrians. The platform users evaluate which outcome is more acceptable in their opinion. At the end, the answers are compared with those provided by other participants. In this way, the machine should learn how to decide like a human. Claudia Gabler

Recommended content
“Moral machine” for capturing moral decisions
moralmachine.mit.edu

TED Talk “Machine intelligence makes human morals more important” by Zeynep Tufekci
youtube.be/HD3mnr6d0hM

W.I.R.E. study “Zukunft digitale Schweiz” www.thewire.ch

Algorithm that converts a photo (e.g. as the portraits in this keynote) into a work of art
deepart.io

What differentiates machine learning from algorithms? Machine learning (ML) is a learning tool. Usually a neural network that changes and optimizes itself: an ML “sales person” sets the product price for a customer according to its learned experience from previous offers. An ML “marketer” composes an e-mail with individual contents and tonality based on the customer’s reaction. An ML “doctor” is not an expert system based on learned success probabilities. An ML “politician” learns from thousands of cases how he can reduce the number of traffic accidents through setting fines at the right height. That may sound like science fiction, but it is entirely an imaginable future.

Are flesh and blood sales persons, marketers, doctors and politicians still needed? I certainly think so in the medium term, and as a monitoring point in the long term.

When are humans unbeatable? And when is the machine top?
Human: will.
Machine: flexibility.

What characteristics must people bring into the ML age?
Humility.

Will we outsource decisions to machines or just the preparation? We will outsource decisions. Our new product, BSI Studio, will make decisions regarding contents, channel selection and salutation, for example – for each individual customer. Each customer story consists of intelligent steps that, based on the data situation, decide whether to proceed left (send an e-mail) or right (send an SMS).

Does a decision have to always be 100% correct? Or does 70% suffice? That must be decided upon for each individual use case, according to the quality and costs of the (human) alternatives and the consequences of false positives and false negatives. When it comes to sending out a newsletter, for example, an incorrect decision is not life-threatening. Furthermore, ML only makes sense if the system receives enough data to learn or receives feedback to its decision through a control loop. Self-learning systems – even those that define their inner structure themselves through evolutionary methods – will surprise us.
Innovation is never mediocrity

#About BSI

Matthias Zimmermann was born in Zug, the cradle of Crypto Valley. When looking at his latest projects – blockchain, AI and the BSI Lab – you might consider his birthplace to be an omen. For although the Crypto Valley became world famous in recent years, it was the cradle of Blockchain Valley in Zug that was given too much attention.

Matthias Zimmermann, born and raised in Zug – today’s "cradle of Switzerland’s Blockchain Valley"

Matthias, your hobbyhorse, machine learning, is totally in at the moment. You have been preoccupied with it for nine years, dedicated your Master’s thesis, doctorate and post-doctorate to this field. Why is it now suddenly so red hot? Ten years ago, machine learning was a specialized topic that didn’t particularly interest most people. While academic progress was made, the machines often weren’t advanced enough to deal with the complexity of ‘real’ tasks. The breakthrough came in 2012: recognition rates were massively increased with the help of deep learning in the ImageNet competition. This new technology triggered a quantum leap in the field of artificial intelligence. Today, neural networks are experiencing a renaissance with deep learning – not only in the laboratory, but also in the real world – which is also attributable to the growing amount of data and improved computing performance.

That really frightens a lot of people. That is understandable. There is an increasing number of areas in which machines are outperforming people – from medicine to the granting of credit. Keyword: narrow AI – for sufficiently limited tasks with enough relevant data, machines can perform as well as or even better than humans. Nevertheless, we are still far from a general form of intelligence. There is not even a consensus about the definition of general intelligence. As soon as AI needs to think around two corners, it is still in its infancy.

So are humans still ahead of machines? Machines are lost when the environment strongly deviates from the trained examples. Even today, machines are hardly able to explain their decisions upon inquiry. A judge, however, is usually able to explain his decision even to lay people. Machines are still unable to do well in such situations.

Then what advantages to they offer? That is rather obvious: no unions, no minimum wage, no naps. A machine only needs electricity and sufficient computing power.

What impact does this have on our society? Robotics in combination with machine learning has a massive, widespread effect on society. It is currently assumed that in 20 years, half the jobs that are common today will no longer exist. The challenge lies in mastering this transformation. It will attain the quality of the industrial revolution and ultimately be even more comprehensive.

How do you see the collaboration between humans and machines in the future? Machines will increasingly relieve us from our daily routine work and assist us with making better decisions. They are new tools that make humans even more successful.

Curiosity and innovation also mean: no focus on short-term figures. Is that difficult in Switzerland? Trying new things in Switzerland can be hard. When you fail, people are usually looking down on you. In the USA, you are congratulated for trying and wished better luck next time. Sometimes I get the impression that mediocrity is given too much attention. Average performance is viewed as solid and sometimes even appreciated. But innovation is never mediocrity! You have to move outside the box, at all times! Initiatives such as Crypto Valley from Zug to Zurich encourage and prove that it is possible to play on the world stage of good ideas from within Switzerland.

Where do you meet like-minded individuals who share your passions? In meet-up groups and in the BSI Lab.

Now that you mention it: we have opened the BSI Lab in the Zurich office. What are your objectives? It is both a place and program for free testing of new ideas around software and hardware. The point is to encourage motivation among people who want to accomplish something. My job is to channel these ideas, avoid duplication and allow participants to make mistakes too. The Lab should lead to even more ideas being tested and to create novel findings that may prove to be useful both internally and externally.

Favorite educational institution
The University of Berkeley – that was exceptional!

Favorite travel destination
A mixture of South America and Southeast Asia
In a proof of concept study, we chose a very common use case: handwritten payment slips that must be digitized and transferred into a core banking system.

We used our open source framework Eclipse Scout to build the payment slip reader’s user interface. To build, train and use the neural network that recognizes handwritten digits, we used Deeplearning4j, the most comprehensive and mature deep learning Java library currently available. Because it is a Java library, the integration of Deeplearning4j with the Eclipse Scout framework proved to be as smooth as we expected.

Recognizing handwritten text has been among the earliest use cases for deep learning. State-of-the-art technology can solve this task as well as humans – or even better. However, to take full advantage of these new, time-saving possibilities, they need to be seamlessly integrated with today’s core business technologies. Read on to find out how we effortlessly integrated a neural network into an Eclipse Scout business application.

Machine learning for business applications

#Technology

The user interface created with Eclipse Scout shows the original payment slip (above) and the depicted amount recognized by the neural network with its probability (below).

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Training our neural network

After implementing the Scout application’s user interface, we were able to integrate a suitable neural network model in the code. Now we needed to train the network; to do so, we asked people to write numbers in their everyday handwriting style and used this data to train our neural network model.

Integration proved to be straightforward

We demonstrated how simple it is to integrate a neural network into a business application with our proof of concept. As the described integration is domain-independent, it can be applied to all types of business applications, such as BSI CRM or any client project.

Payment slips might soon be a thing of the past, but the role of machine learning is expected to grow rapidly across all major industries. There are already many use cases for machine learning today: text analysis (e.g. sentiment analysis or automatic assignment of communications to processes or agents) and image processing (e.g. recognition of handwritten or machine documents, photography manipulation) are only some examples that will keep us occupied in the future.

“The neural network can be easily integrated into Eclipse Scout.”

Christoph Bräunlich, software engineer at BSI

To train the network, we collected writing samples in the regular handwriting of various people.

Want to learn more or try it yourself? Check out our Scout Blog for a more detailed technical description of our use case. There, we also share the full source code of the demo application, “Anagnostes,” on GitHub.

bsi-software.com/ML-Scout

Christoph Bräunlich

To train the network, we collected writing samples in the regular handwriting of various people.
Which offer is the right one for my customer Lena Meier? When should I do so? And where? With the right data, we attain relevance and high closing probabilities: the indicators of good decisions.

Relevance through good data

Which offer is the right one for my customer Lena Meier? Good “next best actions” are those that are highly relevant. For high relevance I need data – and the right data! I get data from my systems: my webshop (Lena’s shopping behavior and times, open shopping carts, Lena’s shoe size); the order system (leads, offers, contracts, orders, claims); the ERP (stocks of the boot in size 39); the app or the self-service portal (geo-data, inquiries, uploaded documents); the partner system (partner data, address, date of birth), Facebook (contents that Lena liked or shared), my website (clicks, bike configuration, pages viewed) and, naturally, from my CRM (communications, business cases, hobby and interests, relationships).

It is important to avoid data silos. Ideally, the relevant data for marketing campaigns and reports is already consolidated in a data warehouse (DWH) or is integrated through interfaces. Cross-system, coordinated master data management is essential for attaining high quality and consistency. This clarifies where the data is “at home” as well as how and how often they are synchronized.

Various technologies are available for the technical interface connection: CSV imports (manual or automatic), SOAP, REST Web services, or database replicas offer various advantages and integration depths, depending on the system.

If I have the relevant data on hand, I know which product Lena Meier will likely open her purse for: one of the last models of the boots that Lena likes so much, in the right size and color. Through a personalized newsletter I draw her attention to the boot, which she then can have delivered home or to work, or can pick up at the local sales outlet.

Monika Freiburghaus

BSI CTMS turns 10

Ten years ago, we developed a CTMS solution together with our pilot customer Actelion, which is precisely tailored to the needs of pharmaceutical companies. Meanwhile, not only numerous pharmaceutical sponsors, but also CROs rely on BSI CTMS for conducting their clinical trials. A new release is now providing fresh wind – and practical modules.

In retrospect

The success story of BSI CTMS began in 2007 with the cooperation agreement between Actelion and BSI. Actelion contributed the specialized know-how regarding conducting trials, while BSI provided the technical expertise. BSI CTMS arose from the productive exchange, a standard product for conducting clinical trials; the software for personnel management and business development; the holistic tool for trial planning and supervision, including monitoring, patient tracking and document management (eTMF). A lot has happened since then. New customers, including ALK-Abellô, Allergopharma, Dokumeds and a well-known Fortune 500 company have joined the ranks of our pilot customer and founded a CTMS community which meets regularly and determines the roadmap for product development.

Stefan Vogt

Outlook

This winter, the community will meet for the 7th BSI CTMS User Group Meeting. We look forward to presenting the latest cloud-based release, named Denim. Through the visionary Web interface, implemented in HTML5, the revolutionary CTMS generation also fits perfectly all mobile end-devices like your favorite pair of jeans. In addition to the refreshing and modern user experience, BSI CTMS Denim awaits with new and practical functions. These include modules for diagnostic trials, new reporting features, upgrades to existing modules, risk assessment for trials and trial centers, and much more. BSI CRM Denim has many new functions and is nevertheless more clearly laid out and easy to understand than ever. Stefan Vogt

BSI CTMS Denim will be ready to go at the end of 2017 and will be rolled out at Actelion and a Fortune 500 customer in spring 2018.

This example illustrates various integration options for peripheral systems. Within the scope of master data management, the project team clarifies where the data is “at home” as well as how and how often they are synchronized.
Go, go, go!

Long-standing, loyal customers, 13 new customers in 2017, strong software products, a well-filled order list, a values-oriented corporate culture: that’s BSI. It is apparently a good concept, because things are going well for us. Will we rest on our laurels? No, quite the opposite! We seek to learn from one another, to become even better. A total of 230 BSI team members (86% of all our colleagues) met towards this end amidst idyllic Swiss mountain scenery to introduce projects, share experiences, convey technical knowledge, present new features of our software products and to network with familiar and new faces; all so we can function even more smoothly and run faster. According to the motto: "Go, go, go!" Melina Merkle
The expanding payments company SIX is reorienting its customer service under the motto: "Enhance your customer service." It is no easy task in a business field characterized by different products, numerous countries and their respective regulations. Sandro Canneori, Senior Project Manager, and Willibald Klein, Head Customer Services at SIX Payment Services, describe how the employee and customer experience can be proactively designed.

SIX is considered the backbone of the Swiss financial center. Its roots stretch back to 1930. That is when the Zurich Stock Exchange was founded, Switzerland’s largest trading venue. SIX has remained true to the topic of securities trading to this day. One major business field is payment traffic, with cash dispensers, payment terminals and the processing of credit, debit and value card payments in shops and in e-commerce; and more recently, also mobile payments, of course. All these cashless payment options are combined in the SIX Payment Services business division, one of Europe’s largest transaction processors, which is experiencing sustained growth.

Expansion in SIX customer service

Reorientation of the payment customer services
As the mouthpiece to customers, the nearly 200 customer service employees share responsibility for the customer experience and thus the satisfaction of SIX Payment Services’ corporate customers.

"One of our leading concerns is to provide an optimized customer experience through the highest possible first-call resolution rate. This key figure represents a clear driver for customer satisfaction. At the same time, a high first call resolution rate helps improve the costs per contact as a result of shorter throughput times and faster processing."

Sandro Canneori, Senior Project Manager at SIX Payment Services, explains the motivation behind the reorientation:

"Our goal is to make customer service fit for the future so that we can retain our competitiveness. Only with the best and most efficient service will we be able to achieve our growth goals."

Among the cornerstones of the program, the CRM expert counts strengthening the customer focus, the digitalization and harmonization of customer service along with the central 360° customer view. Measures to attain the goals for the SIX customer service for the future were defined within the scope of the initiative. Along with change management, these also include technical support for the call center staff to boost their competency and their freedom of action.

System integration as a success factor
The reorientation cannot be achieved without system support, Willibald Klein knows: "A high degree of integration is of central importance. Only when we manage to bring the various customer bases together will the agent be able to optimally service customers."

Using BSI Contact Center, SIX is merging the data from its various core systems into a single view. According to the expert, in addition to the 360° customer view, this integration also delivers further advantages: "For one thing, it enables a higher degree of automation, while also reducing the duration of training of new employees from currently several months to several weeks. In the future, our employees can process customer concerns in just a single user interface. The processes are also triggered automatically – regardless of location and channel."

"Guided processes create legal certainty. Our new contact center solution supports the user by taking the characteristics of the respective countries into account and intelligently steering the process," explained Sandro Canneori.

BSI Contact Center was rolled out in stages in the autumn of 2017 in the Zurich contact center. Now the company is preparing to roll it out in Luxembourg, Warsaw and Vienna. Sandro Canneori notes: "With our new contact center solution, we can improve the capacity of the various locations through an intelligent interplay and thereby boost our efficiency.

"We deliver top quality in all countries – not only in our core business, but also when it comes to service. We are investing in customer service because we believe added value can be attained through interdepartmental teamwork. A good customer service center is a competitive advantage."

Claudia Gabler

Interplay creates a competitive advantage
The aspect of process-guided working and the thus associated opportunity to automate individual process steps is growing in importance, particularly against the background of the rapid expansion of SIX Payment Services in various countries with different regulations and data protection requirements.

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Claudia Gabler
Confiserie Sprüngli is placing the spotlight on its customers with the “Petits Plaisirs” loyalty program. The renowned family-owned business is using BSI CRM to make this happen. “Our goal is to more precisely get to know our customer’s needs and their personal shopping behavior across all on- and offline channels, to be able to serve them better, more quickly and more individually such as with gifts, special invitations and other benefits,” explained Maurice Ruckstuhl, Director Customer Relations at Confiserie Sprüngli.

BSI CRM as the basis for the “one world” experience

With the introduction of BSI CRM, Confiserie Sprüngli no longer only uses its CRM for advising customers when calling the order service, but also in the online shop and in their stores. “This autumn, we also connected the cafés,” revealed Maurice Ruckstuhl. “CRM facilitates our ’one world’ vision: we have the same information at all touchpoints, apply the same rules and demonstrate the same professionalism,” offers Maurice Ruckstuhl when describing Confiserie Sprüngli’s ’one world’ thinking.

In the wallet instead of the purse

In place of a customary loyalty card, with “Petits Plaisirs” Confiserie Sprüngli is using a digital loyalty program. In just one step, customers can set up their virtual loyalty card in the electronic wallet of their smartphone. The simple registration process is being well received by customers. Many people with a sweet tooth signed up for the loyalty program very quickly.

Pamper program

Customers will receive targeted offers and information of Confiserie Sprüngli based on customer data in the future. A prepaid option or purchase per invoice will be also be offered for “Petits Plaisirs” customers. Digital order confirmations and invoices in the sales outlets shall make life easier for customers.

“The tradition of the family-owned company of pleasure, creativity and individual customer service looks back on a more than 180-year history. Increasing digitalization shall not change that. With ’one world’ we are transporting our service promise into the digital world,” stated Maurice Ruckstuhl, who went on to conclude: “Handcrafted confectionary art combined with the 360° customer view facilitates a future orientation in all business areas.”

Claudia Gabler

World famous for its exquisite delicacies made from Swiss chocolate, Confiserie Sprüngli is now also making a name for itself as an omnichannel pioneer – with BSI CRM including a digital loyalty program for an enjoyable customer experience from the online shop to the café & restaurant.

Confiserie Sprüngli’s customers can store their loyalty card in the electronic wallet on their smartphone.

BSI CRM as the basis for the "one world" experience

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“Handcrafted confectionary art combined with the 360° customer view facilitates a future orientation in all business areas.”

Claudia Gabler

© Confiserie Sprüngli

World famous for its exquisite delicacies made from Swiss chocolate, Confiserie Sprüngli is now also making a name for itself as an omnichannel pioneer – with BSI CRM including a digital loyalty program for an enjoyable customer experience from the online shop to the café & restaurant.

Confiserie Sprüngli’s customers can store their loyalty card in the electronic wallet on their smartphone.

BSI CRM as the basis for the "one world" experience

With the introduction of BSI CRM, Confiserie Sprüngli no longer only uses its CRM for advising customers when calling the order service, but also in the online shop and in their stores. "This autumn, we also connected the cafés," revealed Maurice Ruckstuhl. "CRM facilitates our 'one world' vision: we have the same information at all touchpoints, apply the same rules and demonstrate the same professionalism," offers Maurice Ruckstuhl when describing Confiserie Sprüngli's 'one world' thinking.

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The right to be forgotten

Mike purchased a Volta Superbike five years ago with a two-year guarantee. What data may Volta Superbikes capture, and what may they use it for? How long may the data be stored? When can Mike request the deletion of his data? The right to be forgotten sets guidelines and BSI CRM supplies an intelligent deletion concept to implement them.

Privacy by design
With BSI CRM, Volta has an application that ensures Mike’s data protection. BSI CRM follows the “privacy by design” principle (data protection through technology). In other words: the functionality for data protection is anchored in the software so that the end customer’s data protection is ensured by the technology. Data protection is not implemented reactively as a remedy, but proactively as a precaution.

Intelligent deletion rules
Deletion of the data takes place automatically according to individually set deletion rules. The deletion rules preconfigured in BSI CRM can be adjusted by Volta according to their needs and to the precise local legal situation. Volta can set the deletion rules in BSI CRM according to their needs and to the precise local legal situation. Mike can explicitly request that his data be deleted. Volta can set the deletion rules in BSI CRM according to their needs and to the precise local legal situation.

Mike purchased a Volta Superbike five years ago with a two-year guarantee. Since the purchase was made in the EU, the European General Data Protection Regulation (GDPR) applies. With the “right to be forgotten,” it stipulates among other things when and how long Volta may store Mike’s data.

Data storage only with legitimacy
Volta may only store Mike’s data as long as legitimacy exists, e.g. if the data is needed to fulfill a contract or legal obligations or if Mike has given his permission to do so. For Volta this means: they may save Mike's data during the sales phase and guarantee phase. After the guarantee phase, Volta must archive the data for ten years due to the legal retention obligations. Afterwards, Mike’s data must be deleted, unless Mike gives permission for his data to be further processed for advertising or information purposes.

Delete or lock?
Volta can both set up retention obligations and configure deletion rules in BSI CRM. With the retention obligations, data that must be archived for legal reasons can be locked; e.g. Volta must archive order data for ten years after the guarantee expires. Locked data records can only be found and used by CRM users with specific permissions. “Delete” means that the personal and company data, as well as all links, such as to communications or orders, are removed. Deletion of the data is irreversible.

Deletion upon customer request
Mike can explicitly request that his data be deleted. Volta can delete his data record through the menu bar or through a process. Prior to deletion, a review of the defined retention obligations takes place. The authorization to delete people and companies can be limited by Volta through the user permissions.

Legally secure analysis data and satisfied customers
While links and information are deleted through the deletion of data, the data can be further used in an anonymous form for reports and analyses; e.g. Volta will continue to be able to see how many people were written to in a marketing promotion and what the reaction was, but not the specific people. This follows the CRM philosophy of Volta Superbikes: “zombie users” are removed, and what remains is up-to-date data with the customers’ consent as well as anonymous, legally secure data for analysis purposes.

What is the GDPR?
The General Data Protection Regulation (GDPR) standardizes the rules for the processing of personal data by private companies and public authorities throughout the EU. It is intended to ensure the protection of personal data within the EU as well as free data traffic within the European domestic market. Under Article 17, the ordinance clarifies the “right to erasure” and the “right to be forgotten.” The ordinance came into force on May 24, 2016, and must be applied by all companies as of May 25, 2018.

Source: www.dsgvo-gesetz.de
Machine learning in practice

**Insurance & health**

Machine learning is already used in the (health) insurance industry for many use cases – at varying stages of maturity. At an early stage for instance, is a self-learning algorithm that makes decisions about liability questions based on claims data records and submitted photos and detects cases of fraud. Self-learning chatbots are also increasingly used for generating offers, even if they are currently still rather form-based. Their use in complex consultations tends to be moderate so far as the data to properly train the bots is lacking. However, improvement is in sight. Sentiment analysis already works rather well in English and holds great potential for quickly classifying matters.

Oliver Hechler and Adrian Bucher

**Banking**

Among banks, the onboarding process can be simplified through machine learning. It is primarily used in risk recognition and scoring. The validation of scans and photos is also helpful, which is automatically and accurately accomplished by machines.

Zeno Hug

**Retail**

In the retail industry, machine learning is first and foremost used for automatic classification. Particularly frequently asked questions or social media posts can be quickly allocated to the right topics and agents. It also serves as an early warning system – keywords: food scandals or consumer protection campaigns. I also see major potential when it comes to "next best action" or "next best offer". Philip Heck

**Pharmaceuticals**

In the pharmaceutical industry, and especially when it comes to clinical trials, machine learning is already partially being used to predict trial outcomes based on existing clinical data. In the future, it could potentially support and optimize the risk-based monitoring of trial centers.

Jan Nielsen

DCX study

**The Digital Customer Experience (DCX)** is considered an important milestone within the scope of the digital transformation of companies. According to this study, the majority of companies surveyed recognize the potential of comprehensive customer relations. However, numerous challenges often confront companies when it comes to implementation. Among them are the linking of the various dialogue channels, the “cracking” of data silos and evoking enthusiasm for a 360° view of the customer. BSI and Computerwoche compiled the key findings about the status quo of the digital customer experience for you: www.bsi-software.com/dcx

Catherine Crowden

Who is in charge of the topic of DCX management in your company?

**Answer in percentages:** Basis n = 158

*Top management* 61.5

- CEO 19.0
- CIO/CTO 28.5
- Chief digital officer 10.8
- Chief data officer 1.9
- Chief marketing officer 1.3
- Head of IT 24.1
- Head of customer service/contact center 3.2
- Head of sales 2.5
- Head of marketing 2.5
- Other department head 4.4
- Other person 19

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What makes Hermes’ customer service stand out? We love customer centricity. For me, this means to consider everything from the customer’s perspective and to generate appropriate solutions. Every product, every service and every process must be tailored to meet customer requirements.

What is the task or added value of customer service today? Customer dialogue is an integral component at Hermes Germany. In concrete terms, this means that we work side-by-side with our colleagues in logistics to ensure that all agreements are met. This includes the service that has been agreed to with the shipment client, as well as with their customers – the recipient of a shipment. With our centrally acting customer service, we ensure these service levels uniformly throughout the country.

How are you making your customer service a service champion? My vision is to offer our clients and package recipients the same service experience at every touchpoint. This ideal goes far beyond the question of different customer channels such as phone, e-mail or chat. One only becomes a service champion when the latest technologies and data architectures can be applied so that the customer is free to choose and change the touchpoint at any time. Only those who manage to design products and services so that all customers understand and use them will be successful in the future.

Melina Merkle

Chatbots with artificial intelligence (AI)

Problem: Customers constantly have the same questions. Chatbots should supply inexpensive answers: automated dialog systems based on natural language processing.

Test report: Poncho can reliably forecast the weather in Strengelbach. Google can do so as well. But when Neustadt is queried, you are left out in the rain: which Neustadt is Poncho referring to, and does he mean the same one that I do? Chad from Opel can set up test drive appointments with my dream model. However, he does not understand key entries, only clicks on pictures. At Klickmail.at, I can obtain a personal insurance offer for my car, but the process has room for improvement. Mildred can search for flights – but the results tend to simply route her to the Lufthansa reservations page.

Summary: I miss the AI in the AI systems. Chatbots sound quite promising – however, the bots used today tend to be rather frustrating. I believe the days of company-specific chatbots are numbered anyway: companies should use the assistance services of Alexa, Cortana, Google Assistant or Siri – they know me already.

Uwe Funk

Detailed test report: bsi-software.com/chatbots

Chat from Opel does not understand test input, but only clicks on pictures
A software blockbuster!

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DIVE IN

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