

ROTATE VIEW UNDERSTAND

KALEIDOSCOPE

THE WÜRTH GROUP MAGAZINE

two
2018

THE TEXTILES OF THE FUTURE ARE SMART

Jackets that glow in the dark,
gloves that feel heat,
belts that navigate: Würth has
developed important components
for the clothing of tomorrow.

www.kaleidoscope-wuerth.com

A high-angle, side-view photograph of a white Ford Mustang race car with the number 14. The driver, Bradley Aaron Keselowski, is standing on the roof of the car, holding a champagne bottle aloft in his right hand. He is wearing a white racing suit with 'WURTH' and 'MONSTER' logos. The car's side features 'KESELOWSKI' and 'WURTH' branding. A woman in a black and green outfit is also on the roof, and several other people are visible on the ground spraying champagne. The scene is filled with a spray of white liquid, likely champagne.

SIDE VIEW

#WURTHACTION

Energy drinks flow like water there: US race car driver Bradley "Brad" Aaron Keselowski, who is driving in the Monster Energy NASCAR Cup Series for Team Penske, kicked off the season in February with a victory at the famous Daytona International Speedway in Florida. At the moment, the 34 year old is ranked fourth in the NASCAR series. Brad, who is sponsored by Würth, comes from a family with racing in its blood: His father, uncle and older brother are also race car drivers. In September, Brad paid a visit to Germany with his wife Paige. What did he like most about his first trip outside of North America? "I was really excited to drive on the autobahn!"

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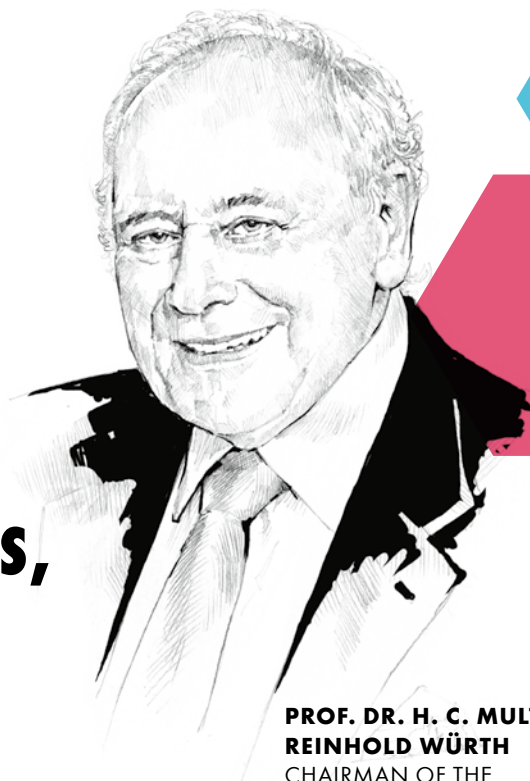
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KALEIDOSCOPE

More than 125,000 products developed, manufactured and sold by over 400 companies in around 80 countries: These figures represent the Würth Group's sustained and profitable growth. Würth is the global market leader in its core business, the trade in assembly and fastening material. Thanks to the Allied Companies, Würth continues to discover new business segments – true to its passion for innovation, which has characterized the company for 73 years. Accordingly, inventive spirit also plays a key role in this issue of Kaleidoscope: From using humans as storage devices and late-night shopping to immense construction sites. Dive into our corporate universe on the following pages and discover its many different facets. Just like the kaleidoscope, which is emblematic of the Würth Group and its magazine: ROTATE VIEW UNDERSTAND.



DEAR READERS, ESTEEMED CUSTOMERS, DEAR COLLEAGUES,



**PROF. DR. H. C. MULT.
REINHOLD WÜTH**
CHAIRMAN OF THE
SUPERVISORY BOARD OF
THE WÜTH GROUP'S
FAMILY TRUSTS



The time for Kaleidoscope has come again. I am dictating this section at the end of a spectacularly warm mid-summer 2018, which raised grave concerns for farmers due to the drought and crop failures while being enjoyed wholeheartedly by the majority of the population. Summer, vacation, freedom to travel from the Balkans to New Zealand: a real dream come true.

As an 83 year old, I bore witness to the Second World War. The soldiers were often separated from their families for many years as prisoners of war, if they survived at all. Today we are truly blessed to live during the most peaceful 70 years in the history of Europe. We are filled with gratitude to be able to live freely and in peace here in the European Union, and yet there are dark clouds rising on the horizon. Right-wing separatists are wreaking havoc in Germany as well, with violence erupting recently in Hamburg and Chemnitz.

I believe that it is worth talking about this issue sensibly during times in which hooligans and right-wing extremists are able to rally hundreds or even thousands of citizens onto the streets within just a few hours to participate in demonstrations, often unexpectedly. The government is still lagging far behind and is largely powerless against the rapidness of this terror and violence.

Dear readers, one dare not even think where this trend could lead – namely, to a partial dictatorship elected democratically and without objection. Even Adolf Hitler's rise to power was completely democratically legitimate, leading Germany to ruin.

The right-wing extremists in the European Union are primarily consumed by xenophobia and are therefore able to drum up sympathy among many otherwise unpolitical citizens: But what kind of interpretation of human rights is that? It is interesting that many citizens who behave xenophobically have never set eyes on a refugee themselves. How would we feel if we were to be persecuted as vacationers or business travelers in Johannesburg, Shanghai or Windhoek because of our blond hair??

Both before and after the migration period (from 375 to 568 AD) there were unexplained migrations of entire tribes on every continents, even in North and South America long before the European colonization, away from home and into the unknown. In 1790, we still had 1,600 different government, customs, measurement and legal systems in today's Germany; we were basically foreigners just over the next bridge. To this day, there are also vestigial remains of such aversions and small city rivalries from the age of the religious wars within Germany. As the city of Villingen in Baden

**"IF I AM ABLE TO INSPIRE YOU TO
REFLECT ON AND PONDER THESE ISSUES,
THEN I WOULD BE DELIGHTED
AND GRATEFUL."**

was merged with the city of Schwenningen in Wuerttemberg to form the city of Villingen-Schwenningen during the Baden-Wuerttemberg territorial reform, there were reportedly bumper stickers that read: "Stop animal testing, use Schwenningers." There is a fine line between slapstick comedy and xenophobia, antisemitism and Muslim bashing, simply because of a vague subconscious feeling that something could be taken away from us, that we could lose something. All of these dark and hazy fears from the early days of humankind are now well protected by fundamental law and the independent judiciary, especially in Germany, to such an extent that we can readily welcome our refugees, particularly as we can integrate them extremely well into our workforce.

It is imperative that we substantially strengthen the European Union and extend its political scope in the months to come. Otherwise, if we were to make room for the extreme-right groups and destroy the European Union, what would remain? Europe would be divided up into spheres of interest between the major superpowers in the USA, Russia and China and we would become subordinate vassals, with President Putin wooing the Visegrad Group, and with China constantly expanding its influence into Europe from the Port of Piraeus, building new streets and highways and even reviving the Silk Road. President Trump wishes to finance Italy's increasing debt in order to facilitate a tasteful "Italexii" for the country in an extreme scenario.

Let me ask you something: Is it not time to exercise reason and realize that we Europeans together could be the world's fourth superpower? That is why I always come back to the same conclusion: We are in desperate need of a

United States of Europe with a European budget, a European Ministry of Finance, and a European Ministry of Foreign Affairs. What good does it do for Belgium, Lithuania, Germany or Finland, along with all other EU countries, to maintain their own embassies in Washington and umpteen other world capitals? We could save billions in euro on diplomatic resources if there were just one European embassy in Washington, Tokyo and Peking, basta.

Esteemed readers, if I am able to inspire you to reflect on and ponder these issues, then I would be delighted and grateful. I almost forgot all about our business.

I would like to thank all of you who are our customers wholeheartedly for each and every order. Regardless of how this trade war develops, we hope to continue offering our customers around the world in over 80 countries excellent product quality and the best-possible service in the field of assembly and fastening technology. With our modest resources, we aim to carry on with and expand on the outstanding successes and advances that were achieved throughout the world over the last 50 years through fair trade.

I wish you all success for the months to come with the highest sales of the year and sincerely hope that you are able find appropriate workers.

Thank you very much and kind regards,

Yours truly,



Reinhold Würth



SMART ELECTRONICS AS A SECOND SKIN

In the future, a jacket may be able to carry out the functions of a smartphone: Small computers worn on the body are revolutionizing the way we use technology. Würth Elektronik has developed a flexible circuit board called TWINflex-Stretch, opening up completely new possibilities for the field of wearables and other body-hugging applications. This could also be pivotal for medical applications.

PHOTOS RAFAEL KROETZ
ILLUSTRATION JULIA WORBS
STYLING SANNE RÖSCH
HAIR & MAKE-UP MARINA BURMISTROW
MODELS CASSANDRA RICHLIK,
HANNES MICHAEL EISENMANN



HEROICALLY TAKE TO THE STREETS

Thanks to its integrated LED lights, the high-tech bike jacket "Sporty Superhero" improves the visibility of bicyclists in the dark. A microelectronic system is integrated into the jacket, containing LEDs, sensors, control elements, an ON/OFF switch, and a rechargeable battery. Despite all of this technology, the jacket is still extremely comfortable thanks to TWINflex-Stretch. It reacts to the bicyclist's movements, synchronizing them with the LED light pattern on the front and back. The faster the bicyclist rides, the faster the LEDs flash, thus making him easier to see on the dark streets. And the jacket is quite stylish at that: It already received the Red Dot Design Award, one of the most renowned design awards in the world, in the "Design Concept" category.

HIGH-TECH BIKE JACKET "SPORTY SUPERHERO"



The jacket warns its wearer: "Time to take a break!" Using a vibrating alarm, it cautions the jogger that her pulse is too high and that she urgently needs to shift down a gear. So stop, catch your breath, check your vitals – the woman knows how valuable her clothing's assistance is and uses it accordingly. The jacket not only keeps her warm, it is also a wearable measuring device. It measures bodily functions, records data during the run and even serves as a navigation system. Thanks to artificial intelligence, it is constantly learning more.

Smart electronics as a second skin. Technology that knows people better than they know themselves, or assists them directly. Futuristic

dreams? Not necessarily. These so-called wearables are part of our digital lives even today, in the form of fitness wristbands, smartwatches or smart glasses. They may not merge with their owner (yet), but they can make his or her everyday life significantly easier and are deeply embedded in the daily routine of many people as trendy accessories. The possibilities of wearables are fascinating.

AN INTERFACE BETWEEN HUMANS AND MACHINES

Where and how did this fascination begin? Humans have always entertained the desire to wear technology on their bodies. The abacus ring from China, invented during the 17th century, is considered the first wearable of all time. ➤

NAVIGATION FOR A NEW GENERATION OF "PATHFINDERS"

The Hohenlohe-based company is also enjoying its partnership with the start-up Sensovo from Heilbronn. In this case, the laboratory is cooking up a "guidance system for adventurers". Once again, the new technology TWINflex-Stretch sparks scores of ideas, whose deliberation would not have been possible without the technology's outstanding ability to adapt to the wearer's body: When hiking, climbing, biking, golfing, diving, "and, and, and," a belt points the way. TWINflex-Stretch is integrated into it and paired with a smart-phone. Athletes are guided by means of vibrations without having to look at the display, concentrating completely on their surroundings and the physical challenge ahead of them. Their field of vision, hands and ears are not needed to navigate. The belt is adjusted precisely to the respective waistline, just like a conventional belt. If you decide to wear a shirt or a jacket over it, others cannot even tell that you are wearing an intelligent guidance system.



It served as a technical aid for solving mathematical problems. Other early examples of wearables include, of course, the first wristwatch (early 20th century), the handheld calculator (1967), and the Sony Walkman (1979).

But today's gadgets can do a whole lot more than these classics. The difference: Modern technologies are integrated into objects such as clothing or accessories. They act as an intuitive human-machine interface while networking with other end devices, such as our smartphone. Furthermore, wearables are becoming increasingly smaller, more powerful, more flexible, and longer lasting – not to mention smarter. Artificial intelligence already allows many systems to learn from their user's habits.

TECHNOLOGY THAT FEELS GOOD

There is no lack of creative ideas. Flexible electronic circuits have been part of numerous products for several decades now and are now considered a matter of course. The ongoing trend toward miniaturization with increased functionality in electronics has led to smaller and smaller housings maximizing space in all three dimensions by means of bending, rolling or folding. What are referred to in the technical jargon as "flexible and stretchable circuit carriers" offer many additional geometric design options and features.

"Not every idea can be realized. Reliability and performance have always taken center stage in our developments. Sometimes the technology to be integrated is simply too bulky and therefore not suited for certain areas of application, and miniaturization or supplying power presents further challenges," says Dr. Alina Schreivogel from the Research and Development department (R&D) at Würth Elektronik. This department, under the leadership of Dr. Jan Kostelnik, together with researchers from the Fraunhofer Institute for Reliability and Microintegration (IZM) quite literally developed a flexible solution to precisely this problem: TWINflex-Stretch. The solution involves a stretchable and flexible circuit board. "It not only serves as a soft basic structure for electronic components but also provides the functions or even an entire application," explains the R&D team. The R&D manager at ➤

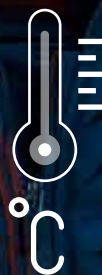


ROBERT FRIEDMANN
CHAIRMAN OF THE CENTRAL
MANAGING BOARD OF THE
WÜRTH GROUP

Be it wearables, cars or buildings: more and more "things" are becoming smart. Most of them, like the products on these pages, can assist us in our day-to-day life or help us to live healthier. Such innovations may be daunting to many at first. After all, they collect data, are becoming more intelligent, and get to know us better and better. However, it is up to us humans to use new types of technology for the right purposes and in an ethical manner. That is why we always orient ourselves on our guiding principles throughout the entire Würth Group: We combine visionary thinking and creativity with responsibility and mutual respect. I am convinced that this will be an essential component for long-term success.

NETWORKED FIREFIGHTING GLOVE

Together with several project partners and the Reutlingen Fire Department, Würth Elektronik has developed a prototype for a networked sensor firefighting glove as part of the joint "GloveNet" project. The prototype works with a temperature sensor integrated into the outer fabric on the palm of the hand. The vibration sensors warn firefighters of a potential flashover – the rapid spread of a flame through the air in a fully developed fire – behind closed doors. Another clue: When visibility and radio communication are impaired, the gesture communication system integrated into the glove can be used via wireless transmission. Predefined hand movements are detected by acceleration sensors. These movements could communicate, for example, "I'm OK" or "Help me". These signals are evaluated in the integrated microelectronics by means of special algorithms. The associated radio signals and tactile responses are then transmitted to the other firefighters by the vibration motors. It works similarly to Morse code: The firefighters feel a particular "vibration pattern" through the glove and can decipher the different messages.



"THE 'CYBORGS' OF THE FUTURE WILL HAVE MEDICAL IMPLANTS"

TWINflex-Stretch opens up new avenues for microelectronics on, or even inside, the body. Malte von Krshiwoblozki, Team Leader, and Manuel Seckel, Research Associate, from Fraunhofer IZM (Institute for Reliability and Microintegration) on the development, applications and future of wearables.

What challenges did you face while developing TWINflex-Stretch?

We wanted to develop a stretchable circuit board. A circuit board that manufacturers could produce using their existing infrastructure – in other words, without any additional machines or investments. To do this, we had to find materials that could be adapted to different processes. It is not just a matter of manufacturing the circuit board itself but also equipping it with electronic components. During the development phase, we performed countless tests and examinations. We are quite proud of the result.

How are the electronics actually integrated into the textiles?

If you take a look at TWINflex-Stretch, you can think of it like ironing a patch onto a holey pair of jeans. Except that in this case we are not talking about ironing but rather laminating. Bonding processes have proven successful in other smart textiles. Or it can be soldered and encapsulated if the material permits.

The circuit boards are now washable, stretchable and flexible. What might the next advancement look like?

Currently, we are testing whether such thermoplastic circuit boards can be used to generate three-dimensional electronic products economically: such as novel lighting solutions and 3D antenna structures or arrays, in 5G applications for example. 5G is the designation for the fifth generation of mobile broadband technology, which is set to be released on the market by 2020. Its transmission speed is supposed to be about ten-times faster than the current LTE speed. For such electronic products, the circuit boards are manufactured as per usual and then molded into the desired 3D shape by means of a thermoforming process. At the same time, we are working on new circuit boards with textile-based circuits in "Project TexPCB", which promise considerably enhanced robustness with regard to mechanical stresses. An enormous step forward in the field of e-textiles, paving the way for entirely new products.

Will we all turn into cyborgs some day and wear electronics inside or bodies, or is that just science fiction?

As a matter of fact, we are well on our way. The field of medical technology in particular continues to make rapid advancements. This also holds true for the research in the field of brain-computer interfaces. The 'cyborgs' of the future will have tiny, invisible medical implants. Such implants already exist to some extent if you think about pacemakers or cochlear implants, i.e. hearing aids. However, they cannot be compared to the cyborgs from the science fiction scenarios portrayed in the 1980s and 90s.

What ethical challenges do wearables pose?

The most ethically relevant aspect when it comes to wearables is essentially the act of obtaining personal data. This could include data on vital signs, activity profiles and movement analyses. If this data is analyzed by an artificial intelligence, then important information can be derived regarding the state of health and behavioral patterns of the respective people. Ideally, illnesses can be detected early on, for example. Furthermore, patients can prove to their health insurance provider that they have a healthy lifestyle – thus entitling them to discounts. But: This information can also be abused. Therefore, we need new mechanisms for handling data that can cope with the new circumstances.





EASY ON THE FEET

Additional applications for the stretchable and washable TWINflex-Stretch circuit board include orthopedics, rehabilitation or sports: For example, Würth Elektronik has installed pressure sensors in the sole of a shoe. TWINflex-Stretch adapts to the foot and therefore does not impair the user's natural gait or running style. An example of a specific application: Shortly after an injury or an operation on the foot, it can have a positive effect on the healing process if the foot is not supposed to bear too much weight. The pressure sensors detect when the foot is overloaded and uses a "vibration alarm" to remind the patient to step more lightly.

INSOLE WITH PRESSURE SENSORS

Würth Elektronik in Rot am See takes visitors on a journey into the future, describing the basic principles and presenting several exhibits. Whether or not the term "board" should even be used for this is another issue altogether. The mix of epoxy resin and fiber optics typically used as the standard base material is replaced by polyurethane plastic, which is otherwise used for entirely different applications, such as imitation leather or fixture coatings. "We couple this base with yet another stretchable, meander-shaped or

wavelike copper structure," reveals Dr. Jan Kostelnik. This gives rise to an alternative, leaving the rigid, green carriers behind and taking on a novel shape, namely an elastic, soft, skin-friendly carrier that can even be wrinkled and washed. "30 degrees in the washing machine's gentle cycle – no problem!" explains Dr. Jan Kostelnik.

TWINflex-Stretch more closely resembles a piece of film with an elastic effect, but not a rigid form. As a result, complex electronic systems and sensors can be adapted at will to fit the


geometry of the human body, or to suit textiles or other soft and flexible surfaces.

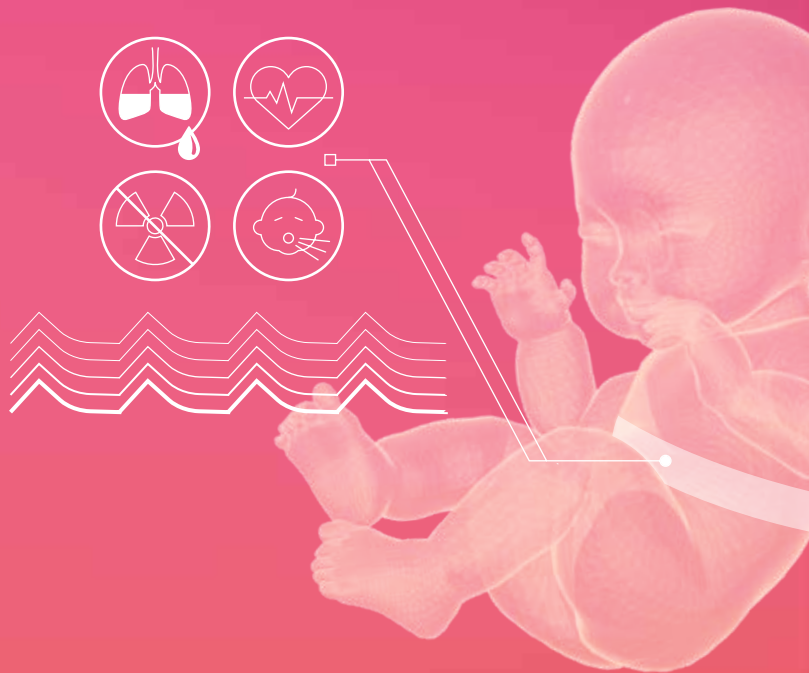
AWARD-WORTHY COLLABORATION

TWINflex-Stretch is already set for serial production and was awarded the 2018 Golden Research Transfer Prize by the Chamber of Industry and Commerce. This prize honors especially successful cooperation projects between the business and scientific communities.

Two products in which TWINflex-Stretch is installed have already made it onto the market: A measuring belt for newborns and a high-tech bike jacket: Information on both of these products, as well as others, can be found next to the photos on these pages.

"VISIONS ARE WELCOME!"

Dr. Alina Schreivogel sums up by saying, "We are proud of what we have achieved." She feels that the medical industry in particular stands to benefit greatly from the flexible circuit boards. After all, medical applications close to the body require a flexible design that can be shaped to fit the human body. Electronics and sensors in combination with an ultra-flexible TWINflex-Stretch could be attached to orthotics, collars, beds or directly onto the body, in line with the geometry of the respective object. Due to the circuit board system's stretchability, the system could be put on and taken off several thousand times without damaging the electronic components and features. Furthermore, this innovation is hygienic since it can be washed and sterilized. The tech world has welcomed the TWINflex-Stretch eagerly, submitting corresponding ideas and requests to Würth Elektronik. The researchers and developers have no objections to this. On the contrary, Dr. Jan Kostelnik closes his speech saying: "Although we are often astonished by the creative ideas proposed by our colleagues, when it comes to futuristic technologies, our motto is: Visions are welcome!" 



MEASURING BELT FOR NEWBORNS AND PRETERM INFANTS

GENTLE DIAGNOSIS FOR NEWBORNS

The Swiss company Swisstom AG has integrated TWINflex-Stretch into a measuring belt for newborns and preterm infants. Due to the hypoallergenic and soft material, the measuring belt can be placed precisely onto the smooth baby skin. It gently measures the baby's heart and breathing functions, thus making implants and x-ray imaging redundant. The belt took a total of three years to develop: one year of research, one year of prototype development as part of the EU CRADL project (Continuous Regional Analysis Device for Neonate Lung), and one year of product development leading up to serial production.



USING HUMANS AS STORAGE DEVICES

Wearables, computer devices worn on the body, that are used for measuring and processing data. The most well-known examples are mostly likely fitness wristbands or smartwatches. They are becoming increasingly popular: By 2022, there will be an estimated **190.4 MILLION** of them; in 2017 it was **115 MILLION**. (Source: Statista)

ILLUSTRATION MARIO WAGNER / 2AGENTEN



With a **SALES VOLUME** of

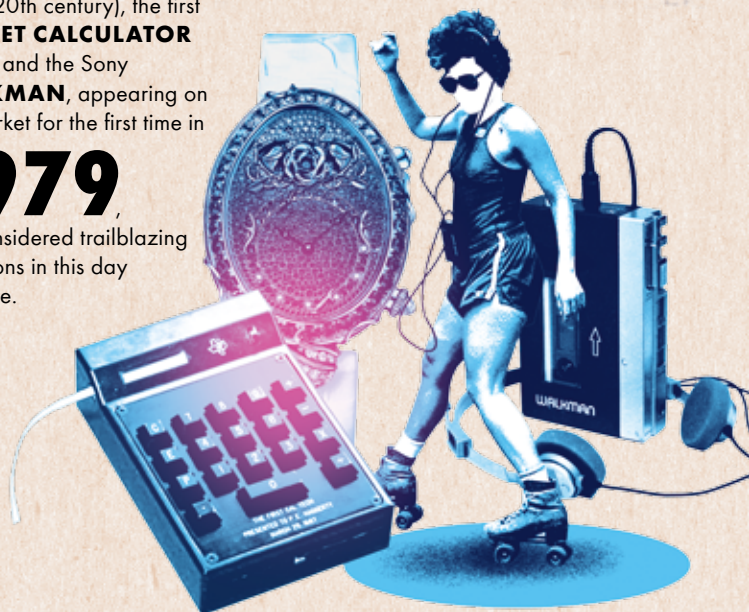
3,941

MILLION euro in the year 2018, China was the largest sales market for wearables.

The first **WATCH** (early 20th century), the first **POCKET CALCULATOR** (1967) and the Sony **WALKMAN**, appearing on the market for the first time in

1979

are considered trailblazing inventions in this day and age.



Würth Elektronik developed **TWINFLEX-STRETCH** together with the Fraunhofer Institute for Reliability and Microintegration IZM (see pp.11). This is a flexible and stretchable circuit board suited for any type of technology worn on the body due to its soft structure. In addition, it is tear-resistant, robust and can even be thrown in the washing machine – in the delicate cycle at

30
DEGREES.



According to one estimate, around

3.65

BILLION people were using the Internet worldwide in the **YEAR 2017**. That is roughly

48%

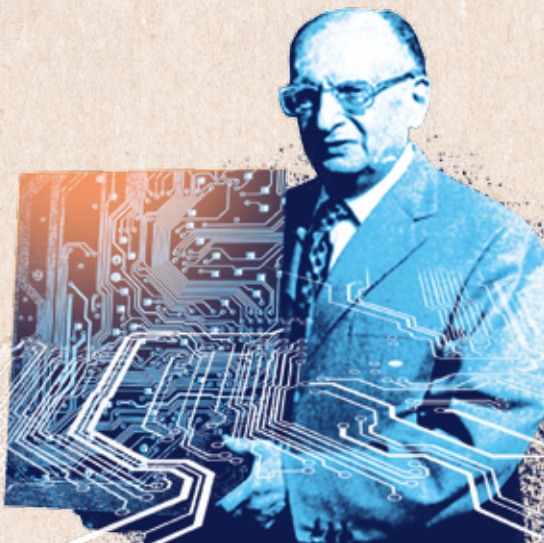
of the **GLOBAL POPULATION** (7.5 billion).



The abacus ring from China, invented during the

17TH

CENTURY, is considered the first wearable of all time. It was used by merchants as a sort of mini calculator.



Austrian **PAUL EISLER** invented the first **CIRCUIT BOARD** in

1936

LATE-NIGHT-SHOPPING

Opening hours no longer matter here: The Bavarian city of Vöhringen is home to Würth's first branch office where more than 4,500 products can be bought around the clock. After the store closes, an app grants access to the Würth24 branch office through its "Galaxy Gate". The concept will now be rolled out.

PHOTOS FREDERIK DULAY

Shopping around the clock has become part of everyday life for many people. Shoes and cutlets, books and flowers, furniture and marzipan – there is (almost) nothing that cannot be purchased late into the night, or at least ordered online. But what does a tradesman do when he needs a certain material or tool straightaway late in the evening or in the wee hours of the morning?

Würth has created a solution for such situations with its first 24-hour shop in the Bavarian city of Vöhringen. The branch office is located in a small industrial park near the A7 highway, with only the shop sign on the outside revealing the revolutionary sales concept. Normal sales operations with Würth employees take place during regular opening hours from Monday to Friday.

However, starting at 5 pm, the shop turns into an “open sesame” for all customers who have a smartphone and the Würth app. Customers can request a QR code via the app, which admits them to the shop containing 4,500 products at any time by means of an automatic access system, called the “Galaxy

Gate”. There are no longer personnel on site. The system recognizes the customer number and the customer is greeted by name on the display at the entrance. This works from Monday to Saturday. The Würth24 branch office only remains closed on Sundays.

The customers can then stroll through the roughly 500-square-meter shop under camera surveillance on their own outside of opening hours and select the appropriate products off the shelves. Finally, customers simply have to place the selected items on the conveyor belt at

AFTER CLOSING TIME, CUSTOMERS CAN SHOP ON THEIR OWN AT WÜRTH24

the cash register. The high-tech tunnel scanner identifies each product using the corresponding label and the prices are added up. At the very end, a delivery slip with the individual items is printed out. Once the payment has ➤

A QR code generated by the Würth app, which can be used to grant customers access to the 24-hour shop.



CAMERA 1 | 20:43:25 23/10/2018

THE "GALAXY GATE" GIVES THE GREEN LIGHT

The new gate referred to as the "Galaxy Gate" grants registered Würth customers access to the 24-hour shop in Vöhringen outside of normal opening hours. A QR code can be requested in the Würth app on any smartphone, which is then recognized by the reader at the entrance. Customers are greeted by name on the display to the right behind the Plexiglas door and can then enter the branch office and shop by themselves – even if there are currently no personnel on site.



CAMERA 2 20:44:36 23/10/2018

Customers place their products on the register conveyor belt one after the other; the items are listed on the screen.



CAMERA 4 21:12:14 23/10/2018

A QR code is used to start the payment process. The total amount is then deducted from the customer account.



CAMERA 5 21:14:08 23/10/2018

The register's tunnel scanner records and unlocks the items on the belt.



CAMERA 4 21:16:39 23/10/2018

In Vöhringen, customers can choose from over 4,500 products: even espresso beans, for example.

been completed, the "Galaxy Gate" displays a green light and automatically lets the customer back outside. The amount is then invoiced to the customer.

In order to make the shopping experience as comfortable as possible, music plays through the speakers on the ceiling. And the shop is lit up just as brightly as during the day. Moreover, a voice output is being planned with instructions on the screen describing how to operate the system. In a further stage, customers should also be able to select the language in which the system guides them.

OTHER INDUSTRIES ARE ALSO INTERESTED IN USING THIS SALES CONCEPT

What has Würth learned so far regarding the new 24-hour service? "At the moment, primarily standard products such as silicone, anchors

and screws are purchased outside of the normal business hours," says Matthias Glaser, head of branch office expansion at Würth. Usually, customers do their shopping up until around 8 pm or on Saturday afternoon after closing time – until now, hardly anyone has considered the option of stopping by Vöhringen in the middle of the night.

But this could change quickly. Many people are interested in applying this unique sales concept to completely different industries, such as food retailing. "Our pilot concept already proved effective and profitable within the first four weeks of opening," says Matthias Glaser, his voice resonating with a note of pride. In 2019, another 50 Würth24 branch offices are to be opened across the nation, some in new buildings and others in existing branch offices.

Thus, it will soon be possible to buy screws late into the night at many different locations – the golden hours for night owls. ▣

🔗 Find out here how to shop in the 24-hour shop: www.kaleidoscope-wuerth.com/wuerth24

From outside, the revolutionary concept used at the branch office in Vöhringen can only be recognized by the Würth24 logo.





BETTINA WÜRTH
CHAIRWOMAN OF THE
ADVISORY BOARD OF
THE WÜRTH GROUP

My commute to Würth early in the morning runs through a forest. A forest that is truly still a piece of pristine nature and not just a collection of trees used for the purpose of forestry or hunting, as is often the case. In his treatise on forest management more than three centuries ago, Hans Carl von Carlowitz first described the principle of sustainability by demanding that no more wood should be logged than can regrow. Today we understand this forestry principle in a more comprehensive manner: We now talk about economic, ecological and social sustainability. The challenge is to not consider each of these areas separately but to see them as being equally important and valuable. We cannot operate in an economically sustainable manner and completely ignore the social aspects. No economic success should come to the detriment of employees and the environment – no prosperity is possible without environmental management. Society is responsible for striking a balance between these three aspects. We as a company consider it our responsibility to do everything within our power to manage Würth in an economically, environmentally and socially sound manner. Thus, the principles of sustainability determine our market participation and are firmly rooted in our corporate culture. But even in this regard, we have to admit: We could do more. In my opinion, if we do everything within the limits of our resources, we are on the right track. We wish to embolden others to stand up for our values. Let us embark on this journey together!



THE CHALLENGE OF THE PHILIPPINES

The traffic in Manila is unusual for Europeans; “tricycles” are popular modes of transport. Traffic is chaotic, the streets are congested. For Simon Dietz this means: arrange for ample time!
Simon Dietz, international internship at Würth Philippines

TAKE ME WITH YOU!

Journey of discovery on the commute to work: Würth employees broke free of their morning routine and documented the small moments of joy on their way. They show the results here.

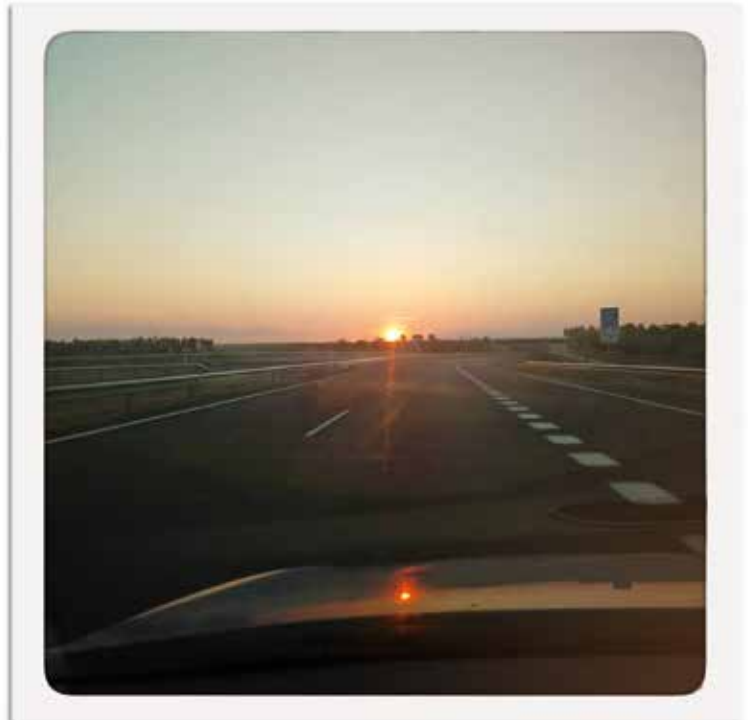


STRICT MORNING ROUTINE

Vianney Sabourin does the same as many Canadians: In the morning, he grabs a cup of coffee from the fast food chain Tim Hortons. He couldn't imagine drinking any other brew.
Vianney Sabourin, Marketing & E-Commerce, Würth Canada

SUNRISE OVER CASTILE

Early in the morning, the highway near Toledo is still quite empty, with an almost meditative mood in the air: For Francisco Javier Banos Sanchez, the trip to work is a good opportunity to think about his customers, and also his family.
Francisco Javier Banos Sanchez, Sales Representative at RECA Spain



Jump out of bed in the morning, take a fast shower, get dressed, rush to the car or the train, gulp down breakfast quickly along the way: During a normal work week, the morning commute to work is a race against time for many people. Apparently, the saying "the journey is the destination" only applies on vacation. That is a shame, since the world is full of inspiration in everyday life. Maybe we need to break out of our routine and take the time for our favorite cereal at the breakfast table. Or ride a bike instead of always taking the bus. Not stare at our phone in the train but instead observe our surroundings and fellow human beings. Listen to a new podcast in the car. This gives rise to new ways of thinking. And makes you hungry for more. In order to be more satisfied day in and day out, we should avoid unnecessary stresses and focus on gathering new experiences. Give it a try on your way to work! The experiences from Würth ►



IN WÜRTH'S SHUTTLE SERVICE

Würth shuttle buses carry more than 300 employees to their workplaces in Shenyang on working days. Such a service is not typical in China. During the one-hour trip, Katharina Wu and her fellow passengers have time to eat breakfast, chat, or continue sleeping.
Katharina Wu, Würth China in Shenyang, Administration



LIGHT-HEARTED AND IN GREAT SHAPE

Marc Goett lives in Strasbourg and combines public transport with an ecological and athletic mode of transport on his way to work. He rides his bike to the train station, where he boards the train to Erstein. From there, he continues on his bike to Würth. As a result, he always arrives in tip-top shape! Marc Goett, Marketing & Advertising, Würth France



EXERCISE ADDS A SPECIAL KICK

"People who exceed their limits inspire me," says George Marin. During the summer, a half marathon took place where his car is normally parked: "The sight of the runners was pure motivation!"

George Marin, Sales Representative at HAHN+KOLB Romania



THE WINE REGION IN SOUTH TYROL

"I commute every day from Bozen to Neumarkt," explains Sara Stievano, "going through Drusus Street in Bozen on my way. Neumarkt is located on the South Tyrolean Wine Road, a very beautiful region."

Sarah Stievano, Head of Marketing & E-Commerce, Würth MODYF Italy

employees around the world prove that this is well worth the effort: They were more conscious during their commute and tried to look at things with fresh eyes. They have shared what they discovered on the following pages. Simon Dietz

SHARPEN THE SENSES FOR SUNRISES OR FRUIT FROM THE MARKET

had already grown accustomed to his exotic surroundings in the Philippines while others yearned for such a change of pace. And who has the opportunity to buy fresh fruit from the market each morning, like Asen Ivanov? ▣

📌 Now it is your turn, dear readers:

Send us photos from your commute to work to communications@wuerth.com – we will be publishing a selection of the submissions under: www.kaleidoscope-wuerth.com/work



MELONS ON THE SIDE OF THE STREET

Asen Ivanov often takes Ring Road in Sofia on his way to work. It is an exterior circular street that runs around the city of Sofia. Many different stands are set up on the side of the street, selling melons for example.

Asen Ivanov, Advertising & Marketing, Würth Bulgaria

THE EXCAVATOR BEETLE

We determine the meaning of the world. We see in it what we wish to see. This is how the trip to daycare can turn into an expedition through an insect universe. With ants, caterpillars and other wildlife.

ILLUSTRATION DOROTHEA PLUTA



In the morning, I take Luis to daycare and then continue on my way to the office. But sometimes, Luis doesn't want to go and I'm not in the mood either: it's always the same commute ...

Then I say to Luis: "But don't you want to look at the huge excavator at the construction site?" Presto, now all he wants to do is see the excavator. And I say to myself: "What about the huge excavator?" That does the trick, I get excited about the same old commute.

And we set off.

There is no lack of excavators here. Our neighborhood is a hub for the German construction industry. Whenever it is bored elsewhere, when it has nothing left to excavate and dig, to crane and bury, to mortar and wall up, to drill and pump, it thinks: "Oh, let's drive to little Luis' street and tear down a house or build a few condominiums." That's how the construction industry is, it simply loves us.

So Luis and I make our way to the nearest construction site in the morning and watch the excavator, how it dashes through the excavation pit, shoveling dirt here and there, knocking over a little wall, or moving a mountain of sand. Luis watches and watches.

What goes through his mind? If only my father were an excavator driver, I could be the son of an excavator driver, the scion of a powerful line of excavator drivers who will someday command an excavator himself, operating the little levers, wheels and buttons ...

And me? What do I think? I think that the excavator looks a bit like a beetle, a bug ner-

vously crawling about with long arms groping around in search of food. The longer I stand there with Luis the more I feel like a coleopterist on his wily hunts, and the more the construction workers look like subordinate beetles subjugated to the master beetle, forced to serve him in carrying out his beetle work.

The truck used to cart away the dirt – doesn't it look like a caterpillar working laboriously from the excavation pit? And the strange yellow track vehicle slowly drilling long rods into the yellow-brown foundation at the construction site – that could be a female beetle laying her amber-colored eggs, right? The humming Atlas aggregate used to power pneumatic hammers – clearly a pulsating May bug.


At some point, we have to be on our way, otherwise we'll arrive too late. But the impression remains. All of a sudden, everything around me seems like an insect world: the small orange-colored street sweeper from the municipal services looks like a buzzing hornet rustling in the leaves; the drain pump with its black hose like a bee sinking its proboscis into a flower; the cars streaming down the street into the city to offices and shopping centers like unconscious ants wandering to work.

And Luis? And me? We wish the German construction industry the very best and plenty of contracts in our neighborhood. ■



AXEL HACKE

Born in 1956 in Braunschweig, living in Munich as an author and journalist. Many of his books are bestsellers, recently "Über den Anstand in schwierigen Zeiten und die Frage, wie wir miteinander umgehen" in 2017 (English: "Good Manners in Troubling Times and How to Treat One Another"). He publishes a weekly column for the magazine "Süddeutsche Zeitung Magazin" titled "Das Beste aus aller Welt" (English: "The Best from around the World").

The background image shows the interior of a large tunnel under construction. A massive, yellow and white corrugated pipe dominates the center, curving from the upper right towards the left. To the left, a large white truck is partially visible. In the distance, a small white car is parked on the tunnel floor. The walls of the tunnel are rough and grey, with various cables and pipes running along them. The lighting is dramatic, with bright spotlights illuminating the scene.

THE MOUNTAIN- TAIN CALLS

The Brenner Base Tunnel is being built between the Austrian city of Innsbruck and Franzensfeste, Italy. It is set to be finished by 2027. Then, the world's longest underground railway line will bore its way over 64 kilometers through the alps. With a new sales concept and a great deal of dedication, Würth is part of this gigantic construction project supplying both products and services.

Work has
advanced greatly
near Mauts, Italy.



Deep below the earth inside the mountain near Franzensfeste, they progress meter by meter. Time permitting, Giovanni Brentari, Division Manager at Würth Italy, ventures into the surreal hole in the cliff and delves deep into the stone in order to take stock of the current situation. He is confronted with illuminated roads, cars and trucks driving to and fro, people concentrating on their work, 3,000 of them on the Italian side alone. It smells a bit musty, with a whiff of ammonia wafting through the enormous hose from time to time. The aftermath of the last explosion. On the plus side, it is always a pleasant 21 degrees Celsius inside, no matter the whims of the weather outside. "It is the entrance into another world," says Brentari.

That other world is the construction site for the Brenner Base Tunnel (BBT), one of the most important infrastructure projects in Europe. At 1,371 meters, the Brenner Tunnel is arguably the lowest but most-traveled alpine pass. It is one of the most important segments on the European trade route from Scandinavia to the Mediterranean, connecting the Austrian state of Tyrol to the Italian province of South Tyrol. Forty percent of the goods transported across the Alps is carried along this route. The trip over the tracks of the 150-year-old Brenner Railway is cumbersome. Up to three locomotives are required to push and pull the wagons safely over inclines and slopes.

The new flat railway tunnel, which will be the longest underground railway in the world at 64 kilometers, should shift the freight transport onto the rails and help alleviate traffic on the Brenner motorway. Currently, the tunneling experts are drilling into the alpine ridge from four different locations, two in Austria and two in Italy. With colossal drills and explosive charges, they fight their way through quartz phyllite, slate, gneiss, and granite. Once the new connection is officially opened at the end of 2027, freight trains (with just one locomotive) will roll through the tunnel at 120 km/h, with passenger trains reaching a top speed of 250 km/h. ➤



Coming from Innsbruck (at 575 meters), passengers can see the light of day again after 25 minutes of travel time at 750 meters in elevation. Here in Franzensfeste – or Fortezza as the Italians say.

Of the roughly ten billion euro in construction costs, Austria and Italy will each cover 30 percent, while the EU contributes 40 percent. The European mindset has long since become embedded in the construction sector. Konrad Bergmeister, appointed project manager on the Austrian side by the company BBT SE, listened very carefully: Eleven languages are spoken on the construction site.

ELEVEN LANGUAGES ARE SPOKEN ON THE CONSTRUCTION SITE


That is not the only thing that makes this gigantic construction project so diverse. Brentari and his colleagues attend to eighty Würth customers in Franzensfeste. Major enterprises along with small and large subcontractors. "That is why," says Project Manager Stefano Oss Pegorar from Würth Italy, "we always have to stay close to our customers."

Although its headquarters are located just one hour away from Baulos in Franzensfeste, Würth Italy opened its own BAULOC® Shop directly on the construction site in June 2017. A BAULOC® Shop is always geared towards the requirements of the current construction phase. Around 1,500 different products are available there for the customers. From fasteners to anchor technology, from automotive parts to measuring tools, from construction materials to personal protective equipment, the selection bears witness to Würth's experience in tunnel construction. Three employees are now looking after this project full time. The sales representative remains in constant contact with the customers and even makes the deliveries himself; one is responsible for logistics, another plays libero in the back office. After all, according to Oss Pegorar, "Time is of utmost importance, the orders are always for yesterday." Here it is all about even better discounts, addi-

tional products and services. "Every day," says Brentari, "is a new challenge."

Those on the other side of the mountain follow such news with great interest. Würth Austria is preparing itself to supply the BBT construction site with work material on its side. This fall, work commenced on the new main construction segment Pfonz-Brenner, where one billion euro is to be invested. At the start of October, a new Würth BAULOC® Shop was opened directly on the access road to the construction site, with more than enough parking spaces. "Whoever drives to work has to pass by us," says Benjamin Stadler, Project Manager at Würth Austria. More than 3,000 Würth products, showcased on a 350-square-meter sales floor, will be installed in the rock or used to upkeep the machinery in the future. Products are not only sold here but also delivered directly. "One of the distinctive attributes about such a large construction site is the wide range of contact points," says Stadler, "you really have to get to know them first." Furthermore, Würth Austria hopes to be ahead of the competition during the second phase. In 2022, construction will commence on the interior of the underground railway. This will require completely different specialists, and thus different Würth products as well. The first call for tenders is already out. It is therefore the right time to cultivate contacts and show our worth. This is one of the reasons for which Würth is presenting itself at the "Geomechanics Colloquium" in Salzburg this year for the third time. At the 67th edition of the event, Würth will focus once more on demonstrating its capabilities to the mining and tunneling industry. "Before sales start to come in," says Stadler as he explains the new sales concept, "we have to invest a great deal of time, money and manpower." That is why he considers the Brenner Base Tunnel project to be both "an opportunity and an adventure."

And it is always characterized by an exchange with the colleagues in Italy. They are planning to open a 24-hour sales branch office in the near future. After all, they are working around the clock deep below the rocks. ■

 A video of the gigantic construction site can be found at www.kaleidoscope-wuerth.com

Harder than stone:
Mounting a drill head
in the Tulfes-Pfonz
exploratory tunnel
(top left).

Brushed off: Miners
working in the Padaster
Tunnel near Steinach
am Brenner (top right).

Heaps of rubble:
Work in the Ahrental
landfill near Tulfes
Pfonz (bottom).

GOLDEN HAND CRAFT



Getting youth enthusiastic about handicraft, and underscoring the significance for the economy: those are the objectives of EuroSkills – one of the competitions supported by Würth. During this year’s “European championship for skilled professionals”, 28 countries fought for gold medals.

PHOTOS TM STUDIOS

The ambiance was as lively as at a large sporting event: Amidst a thunderous applause, the national teams ran into the HUNGEXPO Budapest Fair Center, waving their flags and cheered on by the fans who had traveled there just to see them. An opening reminiscent of the Olympic Games. After all, EuroSkills is about contending for a place on the winners’ podium and winning as many medallions as possible for the homeland. More than 500 professionals from 28 countries participated in this year’s European championship for skilled professionals in Hungary. An additional 15 guest contenders from India, Korea, Japan and the United Arab Emirates took part, too. Over the course of three days, the young professionals showed what they were made of in seven fields, including construction and building technology, services, transport, and logistics. The challenges focused on speed, skill and precision.

Paul Schärschmidt represented Germany in Budapest in the “plumbing and heating” category. During the three-day competition, he had to construct a pre-wall installation in the bathroom, including gas, water and sewage lines. “The challenge is to build with meticulous precision using skilled craftsmanship,” says the 23 year old. Schärschmidt was thrilled with his silver medal. A great performance, since the participants work under difficult conditions – from concealed defects in heavy machinery that have to be detected using limited aids, to working under tremendous time pressure. To top it all off, the assessment is rigorous: A deviation of just one millimeter can cost points and thus the victory.

Russia was the front runner in the national ranking. The team won first place with nine gold, eight silver and two bronze medals, followed by Austria and France. With 17 awards, including three gold, three silver and two bronze, the Ger-

**MORE THAN
500 PROFESSIONALS
FROM 28 COUNTRIES**

35 DISCIPLINES

**AROUND
100,000 VISITORS**



man national team came in fourth. "The European championship EuroSkills plays a pivotal role as part of the strategy to win over young talent for the craft sector. Here, the best German craftspeople have the opportunity to prove in a fair contest that they belong among the best in Europe. The number of medals won is always an impressive testament to the fact that the training in the international craft sector meets the highest standards," praises Hendrik Voß, Head of the Vocational Training Unit in the German Confederation of Skilled Crafts (ZDH).

The aim of WorldSkills Germany is to promote young talent and connect skilled professionals with companies. WorldSkills Germany is part of an international network of organizations responsible for coordinating and advancing national and international professional competitions such as EuroSkills. Partners like Würth provide the association with a wide network in



The competition tasks (left) have been completed successfully: high spirits during the closing ceremony at EuroSkills (top).

which trainers and young talents can come together. Würth not only outfits the German team at EuroSkills but also at various competitions within individual trades, such as carpenters, masons, HVAC technicians, or car mechanics. Würth Hungary was this year's event sponsor, additionally celebrating its 30th anniversary.

The objective of EuroSkills is to foster appreciation for vocational education and training in Europe and to raise awareness for the importance of skilled professionals. The rating of the countries is intended to reflect the individual performance of the skilled professionals as well as the quality of the educational systems. Furthermore, a European benchmarking platform is to be developed for vocational education standards. The next EuroSkills competition will take place in 2020 in the Austrian city of Graz.

The competition in Hungary's largest exhibition center attracted roughly 100,000 visitors. Despite their competitive spirit, the nations proved to be friendly during the award ceremony. After all, the Olympic motto applies here, too: The most important thing is not to win, but to take part. ▣

📺 A video of the competition is available at:
www.kaleidoscope-wuerth.com/euroskills

COUNTRY PROFILE

HUNGARY

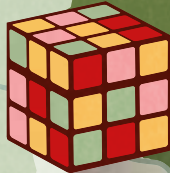
According to the USA's Foreign Service Institute (FSI), **Hungarian** is considered one of the most **difficult languages in the world**. No wonder: The alphabet has **44 letters**.

For historical reasons, toasting with beer is taboo. In 1849, the Austrian military executed Hungarian insurgents and drank to that with the barley juice.



10:1

The Hungarian national soccer team was **World Cup runner-up twice** (1938 and 1954) and achieved the **greatest victory in a World Cup game** in 1982 with 10:1 against El Salvador.



The **Rubik's cube** was invented in 1974 by Hungarian architect Ernő Rubik. This test of patience can be twisted into **43 trillion** different positions.

The **largest inland lake in Central Europe** is located in Hungary. Measuring 79 kilometers in length and **covering almost 600 km²**, **Lake Balaton** is a wellness and sailing paradise.



Hungarian immigrants helped build **Hollywood**: Adolph Zukor founded **Paramount Studios** and Vilmos Fried the **Fox** film production company. Director Michael Curtiz – also Hungarian – filmed the classic **Casablanca**.

Hungarian researcher **Albert Szent-Györgyi** discovered **vitamin C** and was the first to extract it in large quantities from Paprika. He received the **Nobel Prize** for this discovery in 1937.

WÜRTH UNGARN

The **parliament building** in Budapest is the **third-largest government building in the world**. It is 96 meters tall, has 691 rooms and a total of **20 kilometers of stairs**.

Budapest

A **120-kilometer-long system of caves** is located **directly below Budapest**. Over the centuries, numerous thermal springs wore holes through the limestone on which the city is built.

Paprika plays an important role in the national cuisine.

Reportedly, it was brought to Hungary in the 17th century by the Turks or by ethnic groups from the Balkans. At first, paprika was used primarily by poor people to season their meals.



Hungary's national sport is **water polo**. The Hungarian team has won **gold nine times** at the Olympic Games, making it the record holder in this discipline.



ILLUSTRATION BY MARINA SCHILLING



THREE QUESTIONS FOR VIG RICHÁRD, MARKETING MANAGER AT WÜRTH HUNGARY

Which places would you recommend to someone who would like to visit Hungary?

Despite the size of the country, Hungary offers many different sights. Visitors must not miss the capital, Budapest, with its history and beauty, as well as Lake Balaton. It is the largest inland lake in Central Europe.

In your opinion, what foods are characteristic of Hungary?

Hungarian gastronomy can be legitimately proud of its diverse and unique-tasting, traditional cuisine. I would consider the goulash soup, stuffed bell peppers, and Gundel pancakes to be among the most tasty dishes. But the unique elements in Hungarian cuisine are also quite flavorful, including the main courses cooked from various vegetables or the stews with different types of dumplings. Tasting the Hungarian aperitif, a fruit schnapps called "Pálinka", is also a must.

Which Würth products are the most popular among the customer?

The ten most commonly purchased Würth products in Hungary are:

1. Brake cleaner 500 ml
2. Brake cleaner 20 l
3. Hand cleaner plus 4000 ml
4. Brake cleaner rapid degreaser 600 ml
5. BMF workshop cleaner 5 l
6. Mounting rails 39x37,3150 mm
7. Quick Fresh Active deodorizer 100 ml
8. Adhesive lubricant HHS 2000 500 ml
9. Multi maintenance oil 400 ml
10. Adhesive lubricant HHS 5000 500 ml

NEWSBOX

PANORAMAHOTEL IN WALDENBURG: MODERN COMFORT

A far-sighted building with a view: After a construction period of two years, the new Panoramahotel has opened in the Hohenlohe spa town Waldenburg. The four-star hotel with 120 modern rooms and suites offers its guests any imaginable type of comfort, such as a fitness and wellness area with two saunas, topped off with a special highlight: the 3.5-kilometer-long Würth PanoFit obstacle course, a state-of-the-art fitness trail. The hotel restaurant, with regional and international cuisine, can accommodate 120 guests, while the adjoining wine bar has room for 34. The hotel belongs to Panorama Hotel & Service GmbH, a Würth Group company.

www.panoramahotel-waldenburg.de



REINHOLD WÜRTH BECOMES HONORARY CITIZEN OF PALERMO

The Sicilian city of Palermo has awarded Reinhold Würth, Chairman of the Supervisory Board of the Würth Group's Family Trusts, an honorary citizenship. During an award ceremony in September, Palermo's mayor Leoluca Orlando presented him with the city's highest honor in Santa Cecilia Theater. The theater is located close to Cappella Palatina, a Norman-Arabic-Byzantine "palace chapel" constructed during the twelfth century, for whose restoration Reinhold Würth dedicated a great deal of support. The honorary citizenship is an extraordinary distinction, which is conferred very sparingly. In 2007, Reinhold Würth received an honorary doctorate from the Università degli Studi di Palermo.



WÜRTH MUSIC AWARD GOES TO STEGREIF.ORCHESTRA

The Würth Prize of Jeunesses Musicales Deutschland (JMD), doted with EUR 15,000, is a coveted accolade in the German music scene. It is awarded to musicians, ensembles and projects. This year, the STEGREIF.Orchestra was delighted to receive the prize, which was awarded in CARMEN WÜRTH FORUM in Künzelsau-Gaisbach at the end of September. The jury distinguished the ensemble as: "the most remarkable, innovative initiative on German concert stages at present: a joint project by young, self-determined, dedicated, and creative musicians." The STEGREIF.Orchestra, a collective of 24 genre-bending musicians, has been extremely successful since 2015 with a new form of classical music performance. The Würth Prize of Jeunesses Musicales Deutschland has been awarded by the Würth Foundation since 1991.

www.stegreif-orchester.de

BETTINA WÜRTH RECEIVES "B.A.U.M. ENVIRONMENTAL AWARD"

It is considered the premier non-partisan environmental initiative in the industry: With more than 500 members across Europe, the German Environmental Management Association (B.A.U.M.) is the largest network for sustainable management. The renowned B.A.U.M. Environmental Award was presented during its annual convention at the end of September in Darmstadt. In the large enterprises category, the award was granted to Bettina Würth, Chairwoman of the Advisory Board of the Würth Group. In his speech, State Secretary Mathias Samson praised the network's approach of achieving sustainability in day-to-day business instead of just in individual showcase projects.

www.baumev.de



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THE SCHEIBER BOYS

Top Mountain Crosspoint in the Austrian ski resort Hochgurgl is a dream come true for twin brothers Alban and Attila Scheiber. At 2,200 meters, the building's centerpiece is a motorcycle museum.





Top Mountain Crosspoint in Hochgurgl in Tyrol brings bikers, motorists and skiers together.

Flagship of the collection: The basis for this custom bike was an Indian Chief Vintage MY16.



Twin brothers Alban (right) and Attila Scheiber have collected motorcycles since their early childhood.

THEIR HEARTS BEAT FOR OLD BIKES

Alban and Attila Scheiber have been sitting on motorcycles since they were children. The twin brothers have a great deal in common – especially their passion for rare, antique bikes. The motorcycle museum at Top Mountain Crosspoint is a dream come true for them. If you are lucky, you can run into the two of them in Hochgurgl doing what they love most: riding motorcycles.

They are a strong and striking team: The life of Alban and Attila Scheiber has been shaped by their passion for motorcycles. This has always been the case. "We got our first moped when we were six years old, at eight we were sitting on our first motocross bike," recounts Alban Scheiber, "we haven't gotten off our bikes again since then." They have bought more and more motorcycles over the years: from friends, online, or at auctions, such as in Belgium or in the USA. "My brother is often out and about in the States looking for new pieces."

The 51-year-old identical twin brothers – Alban Scheiber is ten minutes older than his brother Attila – are also quite enterprising. Cable car companies, hotels, ski schools, owners of the Timmelsjoch High Alpine Road. The latter was what nudged them to build Top Mountain Crosspoint in Hochgurgl at an altitude of 2,200 meters. "The old toll station from the 50s had ➤



The Scheibers don't just showcase their motorcycles – they ride them, too.

A ten-person gondola lift replaces the old surface lift at the Hochgurgl-Obergurgl ski resort.



MULTIPLE AREAS UNDER ONE ROOF

The multi-functional Top Mountain Crosspoint building at the foot of the Timmelsjoch Road in Tyrol functions as a toll station for the high alpine road. In addition, it houses a restaurant and serves as an access point to the Kirchenkar gondola. The motorcycle museum represents the centerpiece, Europe's highest motorcycle museum with 230 objects on display from some 100 manufacturers, including Indian and Harley.



Naturalness and a connection to the region determine the choice of materials.

to be restored," says Alban Scheiber, "which gave us the idea to integrate a motorcycle museum into the new building at the same time and open our collection to the public."

In addition, a restaurant open during the summer and winter is housed in the multi-functional building with its sweeping, organic forms, except for a ten-person gondola lift that can transport 2,400 skiers and snowboarders onto the

TOP MOUNTAIN CROSSPOINT: A SPECIAL BOND BETWEEN FORM AND FUNCTION

slopes each hour. "We wanted it to have a restaurant with servers," says Alban Scheiber. Guests are very demanding nowadays and are partial to good service. "We have received so many inquiries from large groups over the years, such as Ferrari and antique car clubs or motorcycle enthusiasts. We wanted to meet this demand."

Tyrol-native Michael Brötz gave shape to the idea for Top Mountain Crosspoint. Brötz is an enthusiast for motorcycles with a manual transmission and an architect. "This combination was perfect for us," recollects Alban Scheiber. This is how the motorcycle museum, which can call itself "Europe's highest motorcycle museum", came to be the centerpiece of the building. The Scheibers' more than 230 motorcycles from roughly 100 different manufacturers, along with a series of antique automobiles, are on display in the curved exhibition rooms with solid pine paneling covering an area of 3,000 square meters.

Both brothers fancy rare antique models, and invest first and foremost in quality. Alban Scheiber: "We love Indian bikes or old British super bikes. Our hearts beat for these motorcycles." The collection is intended to provide a complete overview of the history of the motorcycle.

But how is it possible to build such a spectacular building at such an exposed location? To do this, huge pre-assembled components ➤



Perfect curving:
Primarily pinewood is
used in the museum.

SCHMID SCHRAUBEN HAINFELD GMBH

Schmid Schrauben Hainfeld GmbH is the only screw manufacturing company in Austria. Besides screws, the company also produces fasteners, tools for various sectors of the industry, prototypes, and multi-stage cold-formed parts. Founded in 1842, the company employs 160 workers, with an annual sales volume of EUR 30 million (2017). The company has been a subsidiary of the Würth Group since 2004.

www.schrauben.at

up to 23 meters in length were transported onto the Alpine construction site in Hochgurgl and mounted on site. "We were at the site every day," recalls Alban Scheiber. The majority of the fastening technology comes from Schmid Schrauben Hainfeld GmbH, a Würth subsidiary. Impres-

WÜRTH SCREWS PROVIDE THE NECESSARY SUPPORT FOR THE SPECTACULAR BUILDING

sive quantities are required for such a large building: Around 27,000 partially-threaded and fully-threaded screws hold Top Mountain Cross-point together, which is exposed to extreme weather conditions especially in the winter.

This meeting place for bikers, motorists and skiers represents yet another hotspot for the Hochgurgl region. The vista extends far into the Tyrolean mountain range, with the sky close enough to touch. And the Scheiber boys? "We've already purchased a number of new bikes," says Alban Scheiber laughing. "I think we'll have to build an extension soon." ▣

👉 Take a video tour through the museum at:
www.kaleidoscope-wuerth.com/hochgurgl



KAISERSCHMARRN

Kaiserschmarrn is one of the most well-known dishes in Austrian cuisine. The dessert is a favorite of twin brothers Alban and Attila Scheiber. It is also served in their restaurant at Top Mountain Crosspoint in Hochgurgl – their recipe can be found at: www.kaleidoscope-wuerth.com/kaiserschmarrn

PHOTO NILS KRÄMER

Back:

Art for collecting by

DIETER ROTH

* 1930 in Hannover

† 1998 in Basel

Light Bulbs (1965)

Collage with gouache, stamp and pencil, folding

29.2 x 45.8 cm

Würth Collection

Dieter Roth was a universal artist in the true sense of the word. He did not belong to any one group of artists, and even though he created joint works together with other artists at times – such as the acclaimed Fluxus community or the Viennese actionists – he remained a lone wolf, at home in many cities, in many styles, in all types of media. He occupied himself with drawing and

poetry just as much as found objects and literature, graphic reproduction or multiples, music, videos, installations. Dieter Roth collected and exploited in an equally obsessive manner. Just as he twisted and turned the words in his texts, he did the same with the materials in his paintings using a flair of irony. Starting in the mid 1960s, Roth began to experiment with perishable

materials. This gave rise to his biodegradable art, made of sour milk, cheese, sausage, bananas and other food, whose decomposition and decay were a critical element in his artistic process. Exuberant materialism and mortality: Both are typical of this artist's work, whose old studio in Hamburg is now home to the Dieter Roth Museum and the Dieter Roth Foundation.

A LIGHT GOES ON IN MARIE'S HEAD

**Marie Kapphan,
10 years old, from
Schwäbisch Hall,
Germany**



The picture makes me happy; looking at it puts me in a good mood. I like the colors: flashy, almost neon. I don't have any colors like that in my watercolor box. And the structure of the picture is also cheerful. It's really easy to see how the painter advanced with his work: First he drew on the paper with a pencil. Unfortunately, the paper is already ripped in some places. Then he stamped on the light bulbs with

their thread, painted over them, pasted another material on top, and folded the paper. This created big fields, it's really exciting. I've seen light bulbs in the ceiling, but here they look like hot air balloons rising into the sky. And if you look at the picture from far away, it almost looks like a sunset. I think all of the light bulbs mean that we stumble across new ideas time and again during our lives.

ART LOVERS

