

**metalligent®**

**EVOLUTION!**

INTRODUCING  
**metalligent**<sup>®</sup>



# metalligent®; we are - (engl. Adj.), [mɛ'tælli'dʒənt]



➤ Uwe Arnold, Chairman of the Board, Arnold AG | Photo: Wolfgang Günzel

**The world and everything which exists in it is in constant change. In the history of our planet, people have only played a small role, but they have contributed significantly to this change. But we do not always make good choices and forget the earth, our environment and ourselves.**

Faster, higher, farther, cheaper – are there not any other goals in the world of business which drive us? What about shaping a work-piece with love and devotion, having a conversation without time constraints, being interested not only in a product, but also in the person you are speaking with and as a team thinking outside the box with curiosity, openness and creativity?



# Welcome back!

For over 90 years now, the team at Arnold AG has been meeting the needs and requirements of its customers. They love metal, put their heart and soul into their work, contribute fantastic ideas and have produced beautiful, useful and high-quality products made of metal for people all around the globe.

For many years, we have sensed that the skin we find ourselves in does not exactly reflect that which we feel inside of us. Our slogan '...stark in Metall!' (strong in metal) no longer expresses our mindset or work processes even if we are the ones who every day give this wonderful material new shapes and possible uses. Whether strictly functional or aesthetically pleasing, we take it to heart that our work be beautiful, high quality and of value.

It is amazing, just what we can make from metal. And it is important to us that emotions, honesty and trust have an important role in our cooperation with our partners. In a process which has lasted over four years now, we have come a long ways. It all started with ideas I had, and these were then expanded upon together with the board and supervisory board. And in the last 18 months a small internal team, coached by specialists in the field, has worked to make these plans reality.

The time of unveiling is here; the development phase is complete. We have already done this internally, when we introduced our new 'face' to our staff at a big event in early December. The entire Arnold team reconfirmed their commitment to uphold our values. But this change isn't radical for us; instead, it is evolutionary. We now speak openly about things which we have probably known in our heart for a long time now. We cannot change the world and its history. But we can give warmth, understanding and feeling more space within the usu-

al activities of our daily life. Discover our new approach here.

We are proud of and understand our obligation to be **metalligent**<sup>®</sup>. We would be happy and thankful if you would support us in this for many years to come.

'It is amazing, just  
what we can make  
from metal.'

Uwe Arnold

I hope you enjoy reading our new magazine. The first edition is dedicated to the subject of EVOLUTION and looks at the process of change from many different perspectives. We look forward to your feedback.

Kind regards,



Uwe Arnold

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##### Editorial staff:

For the purposes of the German press law, editorial responsibility is held by: Isabell Issing (Arnold AG)

##### Editorial director:

Michael Pyper, Redaktionsbüro Pyper (Pyper editorial agency), Wehrheim, Germany

##### Authors of this issue:

Klaus Altevogt, Dortmund ([www.textwerkstatt-corvo.com](http://www.textwerkstatt-corvo.com))  
and  
Ingo Woelk, Munich ([www.ingowoelk.de](http://www.ingowoelk.de))

##### Cover photo:

Dennis Treu

##### Contact:

Arnold AG  
Editorial staff **metalligent®** | [redaktion@arnold.de](mailto:redaktion@arnold.de)

##### Design and production:

augenfällig, Wiesbaden ([www.augenfaellig.de](http://www.augenfaellig.de))  
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# T S

# The next generation of innovation

**JEANETTE HUBER**

ZUKUNFTSINSTITUT

(THINK TANK FOR TREND AND FUTURE RESEARCH)

Video calls, human robots and drones walking dogs – innovations like these were waiting for Marty McFly when he travelled through time from 1989 to 2015. Many utopias found in the movie “Back to the Future II” really exist today. But for futurologist Jeanette Huber, true innovations lie elsewhere.



## Breakthrough business models instead of the next new product

True innovations are more than chocolate with sea salt. They turn entire markets upside down. With the iPod, Apple was able to drive Sony's Walkman out of the field because people liked being able to download tracks from iTunes instead of having to buy complete CDs. And now Spotify is disrupting the market for Apple because it lets people stream as much music as they want for a monthly fee. Zencap is an online marketplace for SME financing, established by two McKinsey consultants. The company matches small and medium-sized enterprises seeking credit with private investors, and that without the expensive detour to the bank. And the public utilities of tomorrow will bring in money less by selling electricity and more by contracting. They support their customers to produce their own electricity. A traditional provider responds skilfully to a social trend and transforms it into a service.

## Sharing instead of always buying more

The thousands of refugees have shown that people need a certain level of livelihood and security to be comfortable. But in rich countries, many people are turning their backs on consumption. For us, we have long known that happiness isn't a result of prosperity. In addition, some people have recognised the contradiction that exists between their own consumption and the desire to live in an environment-friendly manner. This is why people are starting to think differently: they share, exchange, rent and use things together. Money can also be earned this way, as car-sharing companies and new options for lodging have shown. Hundreds of

thousands of people are registered with Airbnb, and in Berlin many people are securing their livelihood by renting out a room as a hotel room. The sharing economy is also catching on in the business world. Through the Dutch start-up Floop2, companies from Holland, Luxembourg and Germany can share excavators, medical devices and office space. This cooperative way of thinking is not really new – we have seen it in the field of agriculture. But better technologies are now available to implement this old idea. The Internet provides an immediate overview of supply and demand; it makes it easier to manage goods and offers sophisticated payment procedures. Innovation happens when you have both new technology and a change in social values.

## Biotopes of fresh ideas

Ideas for such smart business models are not created at the push of a button. Within the next three months we want to generate an innovation that will bring in at least a million in sales'. This not uncommon statement at innovation workshops just can't be the expectation. Statistics show that time pressure allows for less creativity. We come up with only six per cent of our ideas at the office. The rest where you would suspect: in the bathtub or on a walk. A relaxed atmosphere is capable of awakening hidden talents.

Good ideas are hard to be found in a boring office. This is why the dream factories in Silicon Valley attract the best thinkers with stunning office architecture, slides and adventurous office playgrounds. But this requires a change in thinking: 'Enlightenment, a sense of reality and progressivity are required to recognise that even someone sitting on a couch can create added value for the company', says the London design consultancy

PearsonLloyd.

'... not only thinking about technical aspects, but also redefining the relationships between people ...'

## Failing better!

A designer building with a gourmet cafeteria does not make for an innovative company. Imagine that we toss a coin. If you win, you get €1,500 and if I win, you lose, but you only lose €1,000. Would you bet? Really? Daniel Kahneman, an Israeli-American psychologist and behavioural economist researched just this question. Most people would not make this bet because they feel the potential profits would be a nice 'addition', but the loss of €1,000 a great misfortune. This problem is only exacerbated by the fact that people at higher levels are more likely to take high risks whereas risk-taking at the middle and lower hierarchy levels is rather minimal. It is exactly this fear of risk that makes companies want to continue to make money the same way rather than risk entering new territory. Innovation is also always a risk. This is why innovations only thrive in a 'Failing better' culture. We must try – maybe fail – learn and try again until we achieve success. A 'Failing better' culture honours people who risk something instead of just dutifully completing their work.

## Futurologists as sparring partners

If you want to have new ideas, you have to leave the microcosm of your own company. Exchanging ideas with people in the same industry also only helps to a certain extent because the similar experiences and backgrounds people have tend to lead the thought processes in the same direction. The famous 'best practices' can make established routines more efficient, but they also make people lazy as they can be used like copy templates. It is more exciting if, for example, a mechanical engineer sits down with a food retailer. Then it is easier to take a broader view. Futurology may help to identify social changes. Large companies work in this field themselves, and SMEs tend to regularly bring experts in-house. But futurologists are not miracle workers who dictate innovations for companies. And this really isn't at all necessary – because companies are full of

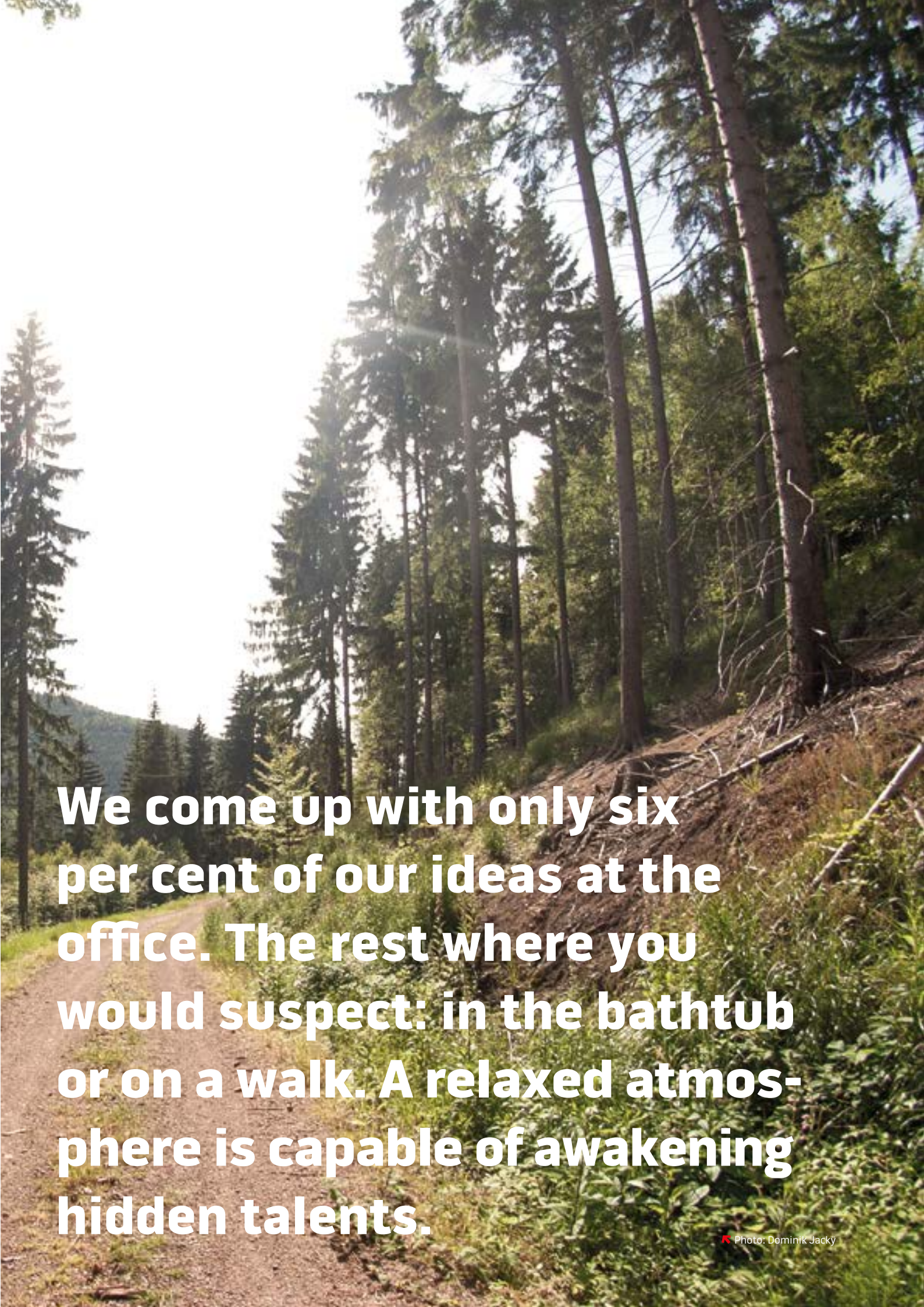
industrious people who have good ideas. Futurologists generate new ideas and fresh thinking. And by describing trends in a catchy way, they help people to have the vocabulary for exchanging ideas about the changes taking place. Good futurologists are sparring partners and catalysts for unspoken ideas.

Text: Jeanette Huber

### JEANETTE HUBER FUTUROLOGIST

**As early as the beginning of the 80s, Jeanette Huber founded a school for computer-based training – it was very innovative, but also a flop. Many years' experience in IT distribution and in a consulting firm have shaped Huber. Looking back, she says, 'This was a school of hard knocks and a steep learning curve'. In 1994 Huber started a private tourism company in South Africa, in 2001 she joined the team at the Zukunftsinstitut in Frankfurt and today she is on the management team there. She advises companies, leads workshops and serves as a keynote speaker. 'My goal is to connect the scientific findings from the field of futurology with the business world of today and to do so in a practice-oriented way'.**

[www.zukunftsinstitut.de](http://www.zukunftsinstitut.de)

A photograph of a dirt path winding through a dense forest of tall evergreen trees. The path is in the foreground, leading into the distance. The trees are tall and thin, with green needles. The ground is covered in brown soil and some green plants. The sky is bright and clear.

**We come up with only six per cent of our ideas at the office. The rest where you would suspect: in the bathtub or on a walk. A relaxed atmosphere is capable of awakening hidden talents.**

# Evolution of a brand

For more than 90 years, Arnold has not only been the story of a small metalworking shop which developed to become a successful medium-sized company, of trusted partners and caring employers – it has also been the story of vision and the courage to continually focus on development and face new conditions and challenges. Evolution rather than revolution.

To ensure that this success story continues and Arnold and the Arnold team can celebrate their hundredth anniversary in 2024 together with their business partners, Arnold has worked on refining many aspects of the project 'Arnold 100'.

## WHO AM I?

In November 2012 Uwe Arnold listened to a lecture given by Jon Christoph Berndt on the topic of branding – and he was hooked. He then went to more events and lectures. 'It was fascinating, and from that point on I put a lot of energy into focusing on our brand'. My question was whether we were on the right track with our slogan 'ARNOLD...stark in Metall!' – whether it expresses what we really do and who we really are'.

How can work that combines traditional craftsmanship with modern production technology be distilled into a brand essence? Arnold found a convincing solution to this question in a report on Faber-Castell in a trade magazine for the German Manufactory Initiative ([www.handmade-in-germany.org](http://www.handmade-in-germany.org)). This long-established company, a member of the initiative, produces exclusive small series on one side of its factory and then, of course, also internationally competitive 'simple' classic standard products. Exclusive and classic – that sounded good!

We were ready to start with the brand project.

## CREATIVITY DOESN'T NEED HIERARCHY

Arnold put together a team of 14 members, from all areas and without regard to rank, name or age. The goal was in no way to revamp our 'brand' or develop a new marketing concept, but simply to review the image of the company. Who are we? How do we see ourselves and how do our customers see us? How can we effectively communicate the qualities which define us and make us strong?

After intensive processes, supported and moderated by Jon Christoph Berndt and Philipp Schaer from brandamazing in Munich, the group came to the following conclusion.

Yes, indeed, we are who we are – and proud of it. 'Arnold ...stark in Metall!' But the truth is that we are not strong in metal, but that we make strong things from metal!

'A small, but fine difference. This is our strength. We focus on this day in and day out, with meticulous care and passion, with gravers and robots, from apprentices to the chair of the board', says Uwe Arnold. 'We are intelligent in metals, **metalligent**<sup>®</sup>'.

## FUTURE, HERE WE COME!

At the end of 2014, it was time to implement our guiding principle. A number of communication professionals presented their approach. The contract was ultimately awarded to a Dortmund agency called freundfreundin, who had a concept that looked at ideas from a completely new perspective and connected these with the strengths of our customer magazine titled *Augenfällig* (Striking) and the many years of experience found at Arnold to create an impressive package.

No 'new brand' – what would be the point?! But Arnold with a new look that aims to communicate the result of this evolutionary step both internally and externally.

We are **metalligent**®!

Internally meant preparing the employees for the changes, keeping them informed and getting them excited about the new image. We did this in small steps with the objective of using a number of events to arouse their curiosity, raise expectations and increase the excitement. At our big brand event at the beginning of December, we were ready for the unveiling. Now everyone at Arnold is in the know!

## EMPLOYEES AS AMBASSADORS – CUSTOMERS AS FANS

'I am a fan of our employees, and all of us at Arnold are fans of our business partners', admits Uwe Arnold. 'Together we want to gain as many fans as we can for the idea metalligent. This is why we need our employees to be ambassadors for the company.'

As always, when you leave well-trodden paths and say good-bye to old habits, there is bound to be resistance and reluctance.

The things we want to implement require more than just knowledge and routines, they require commitment, passion and desire. We knew this was true', says Uwe Arnold. 'And we will find people who feel the same as we do, who are enthusiastic and want to join us as we go in the direction of metalligent Arnold 100 – and beyond to a secure future.'

Text: Klaus Altevogt





➤ Board from left to right: Ingo Stemmer, Christoph Ebert and Uwe Arnold | Photo: Wolfgang Günzel

The goal was in no way to revamp our 'brand' or develop a new marketing concept.

Uwe Arnold



**metalligent®**

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KNOWLEDGE WORKM



SIASM AUTHENTICITY  
BOOSEBUMPS INDUSTRIAL  
SPIRIT EXTRAVAGANCE  
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ILITY PASSION  
G-EDGE TECHNOLOGY  
MANSHIP DESIRE



➤ Based in Munich, at home in the world of brands: Jon Christoph Berndt | Photo: Philipp Wulk



# Are we already a brand?

# The **brand check**

Brand development is company development. That's why this is valuable for everyone. Or is it? The brand specialist Jon Christoph Berndt describes how he opens brand worlds for companies.



‘A company will become and is a brand when it dares to take a position’.

**‘We turn now to our marketing expert’. When Jon Christoph Berndt is asked to appear on ARD or n-tv (German television stations) to speak about current brand phenomena or brand disasters, then the companies who are the focus of the show have achieved at least one thing. They are a real brand. The companies and their products are well known, desired and achieve good margins. Attributes which SMEs would also be happy to claim – also in the B2B area. OK. We are ready. Can you turn us into a brand, Jon Berndt!?’**

## HARD AND SOFT

Hard and soft. The combination of the factors shape the brand image and brand strength. For the soft factors, this guiding principle applies: ‘Your brand is that what people say about you behind your back’. The external perception is decisive, and this is shaped by your company’s message. Berndt explains, ‘A company will become and is a brand when it dares to take a position. It is a brand when it achieves top positioning or niche positioning’. This is because it is only then that a company today is heard amidst the 14,000 brand messages which we are supposedly bombarded with every day’.

What catches your attention makes all the difference: ultimately the decision for or against making a purchase. The ‘hard’ factors combine with the ‘soft’ factors to yield the brand value, which can be determined using a number of key performance indicators (KPIs). These are based on a number of measuring and brand evaluation models. Berndt explains that a characteristic of brand power is that companies receive bank loans based on their brand. ‘Financial institutions don’t take vehicle fleets or buildings as security, they take the trademark registration at the German Patent and Trade Mark Office’.

## WHAT OTHERS SAY

Am I beautiful? The discrepancy between internal and external perception of companies is often significant. The extent is determined by the zero measurement made at the start of the brand development process. This method of quantitative market research is used by larger companies in particular. Questions are asked about central factors such as the company’s quality, reliability and punctuality. Smaller businesses, such as Arnold AG, tend to instead collect qualitative data and conduct in-depth telephone interviews – sometimes spontaneously – with (ex-)customers and suppliers. The data gathered is then analysed and reflected upon.

...



## THE IDEAL SELF-IMAGE

Brand research was carried out at the beginning of a two-year period – Berndt called it the 'brand pregnancy period'. What values should my company stand for? Is it bold, reliable, cost-effective or high-end? Basing marketing and sales measures on these bring the brand values to life. After about two years, the measurement is repeated – ideally, the same people are interviewed again. Is the desired self-image congruent with the actual external image in as far as is possible? How close am I to the ideal 100 per cent (which you can never quite achieve)?

Or have the circumstances made my plan obsolete? Factors which can't be predicted and are driven by the public can come into play during the period of brand implementation. These might be marketing activities, economic crises or a change in social thinking. A company can however steer and adjust its course by using a marketing strategy which promotes the brand and implements the brand message.

Jon Christoph Berndt believes that the important factor of targeted and bold positioning has been successfully achieved at Arnold. 'Arnold has done this exceptionally well and may be able to achieve an edge over competitors who only focus on quality and the 'Made in Germany' label. In this respect, industrial companies are often managed like consumer goods manufacturers. The leaders in charge make all the difference here'.

## BRANDING IS A MANAGEMENT ISSUE

OK, the boss has decided to focus on brand development and calls out, 'Marketing, now is the time!' Berndt interjects and yells back, 'Stop!' 'Branding is a management issue!' And that's how it is at Arnold. Berndt knows, 'It doesn't work to form a brand image based on a few of your desired characteristics and just continue with work as usual'. The managing board and board represent their company like no one else – to the public, customers and employees.



'Hi, we also m  
cables! **An**

Only when this works well, do opportunities exist when a bakery sales assistant gives a customer their freshly baked bread with a smile on her face. Or a dm cashier (dm: retail store in Germany) who somehow always goes above and beyond what is required. The fact that employees are brand ambassadors is a central focus for Berndt: 'Those involved must be informed and inspired early on. This allows individuals to contribute more so that the target image becomes the self-image. The subject of branding can also be part of target-setting meetings and salaries'.

## CONTINUOUS DEMAND

If the product range and quality are just right, the brand product is capable of creating a pull effect. The salesperson doesn't have to scream (push): 'Hello, we also make ... cables! And cookware'. The salesperson can instead present items in an attractive manner and help people fulfil their desires (pull): 'My company provides



Arnold Brand Development Team | Photo: Michael Pyper

# make ... and cookware'.

you with integrated cable solutions, just as our brand profile promises. Now, that may cost a bit more. There might be a possibility for a deduction, but definitely not for a discount'. The close cooperation needed between marketing and sales becomes apparent here. This often requires a fundamental change in employee thinking. Berndt is convinced, 'In the beginning, success is not a result of either the brand or sales. Marketing must not be seen as a cost factor'.

Brands must continually develop in order to meet customer demand. Otherwise, established brands are also at risk, and the insolvency administrator collects the rest of the miniature railways (Märklin), fine rib underwear (Schiesser) or photo patents (Kodak). How could that have happened? After all, I am famous? Berndt sees downturn as proof that even established brands are subject to cycles: 'At first a brand product is extremely attrac-

tive. But then customers forget about it because the market is either saturated or people have heard the message too many times. The company missed the chance to adapt its brand message to the changing times'. Market suppliers must therefore regularly review and improve their product portfolio. New demands and fresh ideas bring a company back to the top and keep it there. The existing brand strength with its fans is the driver. Then a new control function on the smartphone becomes the type of innovation customers camp in front of the shop doors to get.

Text: Ingo Woelk

# Renaissance of a national drink



**Frankfurt and Goethe. Frankfurt and the banks. Frankfurt and ... its apple wine! It is the national drink of the people *hibb und dribb de Bach*, as the two sides of the Main river are called. But the 'pressed apple' has to fight – wine, beer and new trendy drinks provide for much competition. Young wine pressers throughout all of Hesse, professionals and enthusiasts are helping it to experience a new golden age.**

# hibb und dribb de Bach

# APPLE

The best moment for Sebastian Reichert, a passionate amateur wine presser from Wehrheim, Germany, is 'when the fermentation lock on top of the fermentation vessels or carboys begins to dance and it plops'. A sure sign that the yeast cultures contained in every apple have done their work and converted the sugar into alcohol. And the carbon dioxide that escapes in the process makes that nice little sound.

Reichert is one of the young wine pressers in the Frankfurt region who has discovered apple wine for themselves – and not only as a drink, but also because of all that goes into the process of producing quality batches in his own basement. The passion Reichert and others in the Wehrheimer Keltergemeinschaft (Wine pressing association in Wehrheim) have goes so far that they have even purchased a professional fruit press which a pub in a neighbouring town was selling used. 'In the past year, we made about 8,000 litres of apple wine for ourselves and our friends', proudly explains a man who works as a professional baker.

For decades, the most popular place for apple wine was in Alt-Sachsenhausen in Frankfurt – from 'Frau Rauscher in der Klappergass' (Ms. Rauscher on Klapper street) as was the text of one popular song. Heinz Schenk helped the apple wine culture to gain nationwide attention when it was a central part of the legendary television show called Zum Blauen Bock (name of restaurant in the series). The show was discontinued in 1987. Soon thereafter the downturn began. Smaller wine pressers shut down operation, and then the first apple wine pubs closed, some of which had still made their own apple wine. The large wine press houses sell apple wine with a uniform taste, and the demand for this wine has only decreased.

But now more amateur wine pressers like Sebastian Reichert and professionals with new ideas like Andreas Schneider from the fruit farm am Steinberg in the Frankfurt city district of Nieder-Erlenbach are making sure that apple wine has a new golden age. There are now apple wine gourmet restaurants and the first apple wine sommeliers. Schneider's pure applewines are sold at prices comparable to that of top wines obtained from grapes.

WINE MADE FROM APPLES IS AVAILABLE  
WORLDWIDE – EBBELWOI ONLY IN FRANKFURT

Admittedly, apple wine isn't exclusively a Frankfurt invention. In virtually all cultural areas around the globe, people discovered a long time ago that apples are ideal for fermenting to make alcoholic beverages. But nowhere has apple wine likely created such a sense of identity as it has in Frankfurt, where it is called Ebbelwoi or simply Schoppe (bottle) – especially when it is paired with the infamous and notorious Handkäs mit Musik (literally: hand cheese with music).



The name of the cheese is not at all a reference to a folkloric orchestra. Vinegar, oil, salt, pepper, caraway and lots of onion ensure that there is music – going down, so to speak. What the new residents experience the first time as an attack on life and limb, turns out to be a delicacy that you can enjoy in the warmer summer months without having to spend much money. There have also been new developments here. The many delicious recipes prove just how varied this almost calorie-free dish can be. As a soup, served in a Mediterranean style or even as a sweet dessert, it makes for a delicious treat.

### WINE PRESSERS SAVE ORCHARDS

In the best case, the apples come from the orchards around Frankfurt from the Taunus mountains, the Odenwald mountains, or the Wetterau region. Standard trees, which are larger trees, bear mostly old varieties which are especially fruity and slightly sour, providing for just the right taste. But their size was their downfall.

'Large apple trees are much harder to pick from than the typical spindle bush common today'. In the orchards, these trees got in the way of the machines that have continually increased in size. At times, there have even been 'grubbing-up premiums', says Peter Gwiasda, board member of Friends of the Earth Germany (Bund für Umwelt und Naturschutz Deutschland, BUND) in Hochtaunuskreis (district in the middle of Hesse). Several years ago, he and the BUND took the initiative to save existing orchards and restore the apple trees. 'Our aim was and is to bring back the natural cycle of cultivation, maintenance and use of the fruit in the region'. This has been successful in Wehrheim, and also in many other small villages around Frankfurt. This town in the Taunus mountain range now calls itself the 'Apfeldorf' (Apple village). The municipality has allocated sponsorships for the over 1,000 apple trees to private individuals who then care for the trees and harvest the fruit. They are rewarded with an incomparable national drink they produced by working with their own hands.





# APPLE



## ALL ABOUT APPLE WINE

If this has whet your appetite, you should try some apple wine. In Frankfurt there are still a number of quaint apple wine pubs including Dauth-Schneider, Affentor-Schänke, Apfelwein-Wagner and Kanonesteppel. If you would like to have more than a few small snacks along with your wine, you should try a restaurant such as Schuchs, Zum Rad or Zum lahmen Esel. You can get advice from a true apple wine sommelier at the Landsteiner Mühle (apple wine bis-tro) in the Taunus.region. Or why not sample a variety of pure apple wines under the guidance of Andreas Schneider at the fruit farm am Steinberg. More information is available on the Internet at [www.apfelwein.de](http://www.apfelwein.de) or [frankfurt-interaktiv.de/frankfurt/apfelwein](http://frankfurt-interaktiv.de/frankfurt/apfelwein) (German only). If you would like to try to make apple wine yourself, we would suggest the book *Vom Apfel zum Wein* (From apples to wine) by Jörg Stier, published by CoCon Verlag, Hanau.





# THE WELLE — COMEBACK OF AN OUTCAST

die Welle<sup>4</sup> macht  
die Welle



# IDEAL LOCATION, REMARKABLE ARCHITECTURE

... but, the Welle (building complex in the shape of a wave) had not yet experienced major success. On behalf of the new owner, the Frankfurt architects schneider+schumacher set forth to develop this Frankfurt commercial property in an evolutionary manner. A massive artwork which should attract and inspire people.

**Location?** That can't be the reason as it is located in the Frankfurt Westend, directly behind the Alte Oper (old opera house), in close proximity to the Fressgass shopping area, in the prominent neighbourhood of the banking district and city centre, only a few steps to Rothschildpark and Bockenheimer Anlage (small park) – ideal location, no question.

**Design?** The bold curved facade is both a unique and distinguishing feature of the large building complex.

**User-friendly?** Underground car park, high-quality building infrastructure, flexible office concepts and very high occupancy rates. State-of-the-art technology – at least twelve years ago when it was built.

However, the Welle had never quite been able to meet the expectations of its investors and architects. There was a lack of walk-in customers. Small shops and restaurants, over an area of at least 4,000 square metres, didn't draw the number of customers they had hoped for and there were frequent changes in ownership. A number of attempts were made to make the promenade between the buildings (called An der Welle) more attractive – a watercourse, green areas, benches and a farmers market, but still the numbers of visitors didn't increase.

## ART REVITALISES

The complex was sold in 2012 to a joint venture between AXA Versicherung (Swiss insurance company) and the Government Pension Fund of Norway, who wanted to revitalise and enhance the entire outside area. When asked 'How?' the Frankfurt architects schneider+schumacher submitted the perfect solution.

'The most important part of the Welle is the name', says Michael Schumacher. 'We wanted to establish it as a much deeper metaphor. And this made it clear that we wanted to make something that was three dimensional. A wave that moves upwards, into the third dimension, so to speak, into space, and thus more into

the line of sight', he describes the first creative ideas. The initial pencil sketch was developed to become a design for a stunning aluminium sculpture consisting of the following elements: diving arch, glorious arch, joyful wave, flowing waves 1&2 and the chill-out wave.

The diving arch serves as a connection to the Opernplatz (opera square) and Bockenheimer Anlage – it could even be called the Haltestelle Welle (bustop wave). A few steps farther and the glorious arch rises to a huge 18-metre wave and then comes to rest in a semicircle at ground level. Then the wave rises again to become a powerful monolithic joyful wave above the elevator of the underground car park before it finally recedes at the end of the outside area as the flowing wave and chill-out wave.

Can we compare it to a giant wave which lifts you up, carries you and then softly washes you up on the beach?

Michael Schumacher: 'You can look at it that way. But you can also experience it quite differently. The most important thing is that it is understandable. When we notice something and can connect it with our own images, experiences and memories, then it triggers associations, attention and emotions. Then it gets exciting'.

## VISION MEETS FEASIBILITY

'But', continues Michael Schumacher, 'The next question was can this be designed and built?'

Ragunath Vasudevan, architect on the schneider+schumacher team is the 'magician' who rendered the intellectual draft 'into a mathematical model which brings all of the given and variable elements into a logical sequence and allows them to be displayed geometrically'. He explains, 'This logic is based on parametric planning'. Our structural engineers at Bollinger + Grohmann work with the same system, and our systems are linked. Any change we make activates the corresponding change in their system.

The end result is a construction plan which precisely defines each individual process step and each little detail, no matter how small. After this, the metal specialists at Arnold brought 100 tonnes of aluminium sheet into form in just under 19,000 production hours.

## WHY ALUMINIUM, WHY ARNOLD?

Michael Schumacher: 'At some point, planners encountered the following dilemma: How can we build this and what will it cost? Initially concrete was the material of choice – but this wouldn't have been feasible and the costs would have been mind-boggling. Wood would have been cheaper, but very time-consuming to maintain.

Aluminium is more expensive, but ideal. We can achieve exactly the large areas and the edges we need to come as close as possible to the ideal of a wave – one that in reality is much more complex and amazing. And with Arnold, we were lucky to find someone who understood us and was able to implement the design'.

## DOESN'T WORK, DOESN'T EXIST?

'When you saw the design, did you perhaps think that it would never work?' I asked Marcel Glapski and Michael Grimm, the two project managers from Arnold. 'No, we thought it would be possible'.

Even if brand-new solutions had to be developed for this sculpture. Each sheet was individually cut

and bent, each one in a different manner. The cutting was done by hand, and a special 4-roller round bending machine was purchased and modified so that variable setting options allowed each sheet to be rolled six metres long, 1.5 metres wide and with precision to the nearest millimetre. Arnold invested in four new welding machines to use to connect the sheets. The majority of the welding was completed in the factory in Steinbach-Hallenberg, and the rest during the assembly in Frankfurt. For the special welding requirements, Arnold worked together with the aluminium welding guru Michel Weitzer from BEWE Consulting in Petershausen to develop a completely new technology that allows for one-sided welding without delay.

'It was quite exciting', report the two project managers, 'as the prefabricated parts arrived on the construction site on 38-metre long articulated lorries'. The six parts of the joyful wave were welded together to form two parts, then these were erected using lifting frames – and everything fit! The two halves were welded together, and now it stands in its place – as if it had been painted. 'That's enough to give you goosebumps!'

## A GIFT FOR THE CITY

'It's important to emphasise that with this sculpture, the owners have given the city of Frankfurt an incredible monolithic artwork and an amazing place', stresses Michael Schumacher.

Thanks to the highest quality design and superb craftsmanship, a non-profit investment has created a space in which the visitors can immerse themselves, relax and – almost like at the ocean – sink into the flow of the images: diving, joyful, glorious.

Interviews and text: Klaus Altevogt

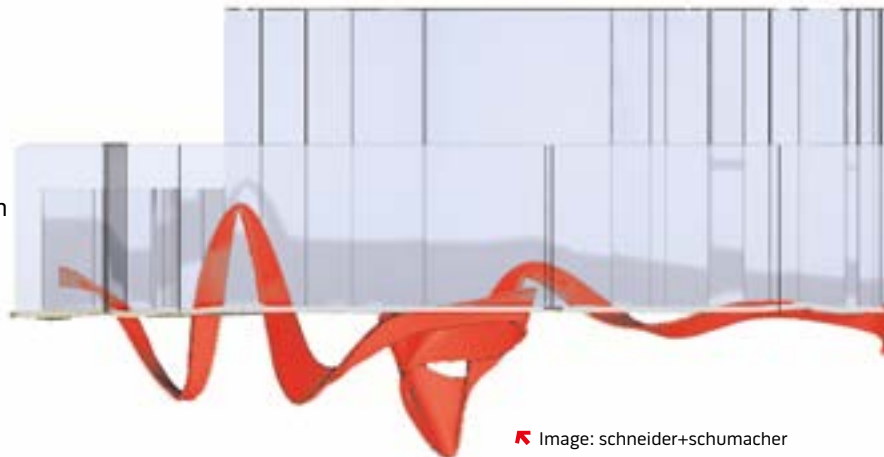




Photo: schneider+schumacher

Photo: Dennis Treu





# GOOSE







# BUMPS

# VALUABLE AND FLEXIBLE – EQUIPPED FOR THE FUTURE

**The half-life period is shrinking; commercial real estate now reaches ‘old age’ at an ever increasing speed. After only a decade, properties can sometimes not be rented because they no longer meet the current requirements. It doesn’t have to be this way. Peter Matteo is a member of the management and a shareholder at Groß & Partner Grundstücksentwicklungsgesellschaft mbH and is responsible for project implementation and construction management. He explains how it can be done better.**

**Mr. Matteo, in this issue of our magazine we are focusing on evolution. As a planner do you have an opinion on this concept?**

Peter Matteo: Of course. You can’t build a building for a tenant and then tear down half the building ten years later. We put a lot of emphasis on building structures of value. An office property must have a structure and units of division which allow new usage requirements to be implemented without major renovations. There are certain parameters which define an office building from the outset such as 400-square-metre solutions, fixed axial dimensions, maximum room depth, enough escape staircases and sufficient storey height. If you consider these and structure a property in detail so that a wide variety of office types can be mapped in a layout, you can respond to new circumstances and take up new use concepts without any problems for the next 25, 30 or even 50 years.

**How do developers know what to expect?**

Future technologies and the global trend are currently an established measure of sustainability. In constant contact with manufacturers and planners, we strive to anticipate and account for future trends. What is certain to come is new technical equipment. It is difficult to estimate the rapid development, for example, in the IT field and with the Internet. Building control technology is another major field which is evolving rapidly. As for room control units, there are tablet structures, with which users can set things such as sun protection or room temperature to their preference. From a technical perspective, these will be laid out on the ceiling and floor, and to prepare we make sure the storey height is adequate.

**What is the influence of the human factor?**

Traditional open offices are no longer fashionable; if you want to attract the best employees, you’ve got to offer them a welcoming and pleasant working environment. With high-quality materials, good construction specifics and variable working surfaces, you create attractive working areas, retreat and quiet zones, cafelounges and some areas for recreational activities – these aspects are becoming increasingly important for employee recruitment and satisfaction.

In summary, good architecture, high-quality materials, building structures of value and flexibility allow us to adapt to current and future requirements. This is what we understand under sustainability, which we work passionately to achieve.





➤ Central Pavilion des Tuileries, Paris | Photo: iStockphoto

# EVOLUTION OF DESIGN



'What a perfect dome on my palast', exclaimed Caterina de' Medici in 1564 as she pushed back her silk hood with excitement. *Merci beaucoup, Monsieur de l'Orme!* This French Renaissance architect worked with his 'stereotomy' (stone cutting in three-dimensional space) in an architectural tradition which has been continually developed to become the modern-day parametric planning.

Philibert de l'Orme shined very early with his sophisticated stone masonry and vaulting techniques. 'He developed geometrical systems so that he could cut complex stone shapes from unfinished stones', explains Ragnath Vasudevan, architect at schneider+schumacher. Even today analogue processing methods are transformed into geometrical systems in order to make flat materials into full three-dimensional components. The difference is that parametric planning today is done by computer programs.

## TRUE WORLD ARCHITECTURE

The Elbphilharmonie concert hall in the HafensCity of Hamburg, the Louvre in Abu Dhabi or Pae White's artwork *THE Magic Carpet* in the Berlin Airport – the parametric design supports the development of architecture and art projects which inspire or at least amaze people all over the world. This is because parametric computer calculations make it possible to design materials with curves and shapes which lend both the inside and outside of structures a special fascination.

How reliable this makes planning can be seen in the choice of materials for the sculpture *Welle*, located at the Frankfurt office complex with the same name. This project shows the advantages of parametrics for both planning and design. 'An effective parametric system allows for rapid adaptation to a wide range of situations. And this shortens design and adjustment times and optimises planning processes', says Ragnath Vasudevan. For example, we see this in the crucial decision of what material to use. Concrete was the original plan, but it turned out that aluminium was a better choice for the sculpture. The wave shapes are created from individual aluminium plates which have been welded together. This material adjustment doesn't cause planners the same difficulties it used to because with parametric planning the new calculations are largely automated.

**When parameters for an architectural project or a complex metal design change, laborious new calculations are no longer necessary, thanks to parametric planning. Works of art made of aluminium such as *die Welle* in Frankfurt or *THE Magic Carpet* for the Berlin Airport were created using this new design method.**

## AT HOME IN TWO WORLDS

Arnold has had professional contact with Benjamin S. Koren, Managing Director of One to One for many years now and this has paid off. It soon became clear that relevant metalworking processes could also be programmed. Arnold has benefited from the fact, 'that we are at home in both worlds: architecture and metal', explains Michael Grimm, Head of Technology and Training at Arnold. His experience is that a parametric system makes sense in projects where from the beginning irregular structures are prominent in the design. Figure A has four corners and two holes. Figure B has these as well, but the corners and holes are at different

# At home in both worlds: architecture and metal

Michael Grimm, Head of Technology and Training at Arnold

locations. 'But there is a definite similarity'. The first order Arnold used parametric planning to carry out was an 'artistic treat'; it was for THE Magic Carpet by Pae White for the Berlin Airport in 2011.

## BERLIN HOVERS

Not yet one plane has taken off from the Berlin Brandenburg Airport. But THE Magic Carpet has been hovering for some time on the ceiling of the check-in hall. The artwork designed by the Californian artist Pae White covers a surface area of almost 1,000 square metres and radiates in a warm and strong red. The flying carpet measures 37 x 27 metres, hangs on ropes from the ceiling and consists of an aluminium structure made of 500 elements. It is filled with ornaments woven from thin aluminium strips with an overall length of over 12 kilometres.

Parametric planning transferred the 3D information for the load-bearing components and shapes to the aluminium panels. Then these were bent and rolled into the desired shape. When the artist travelled to Berlin to decide on the height and final position of her artwork, she was completely thrilled with the result. 'This metal structure uses the natural light flooding the expansive, new airport to create shapes and lines in space which hover and expand in space'.

## ARTIST OR NERD?

Rather down-to-earth, at the interface between art and computers, sit the specialists for parametric planning such as Benjamin S. Koren. He and his company One to One work on game-changing cultural structures. It is therefore interesting to ask whether he sees himself and his business as a creative or IT service provider. 'I feel that we are first and foremost geometers', says Koren and goes right on to explain. 'Our expertise lies in our ability to find abstract-geometric solutions in a creative way. These allow us to make complex projects reality'. Koren obviously has 'programmed' himself to be modest, in contrast to many of his projects such as the Elbphilharmonie concert hall. Even if he doesn't say it specifically, it is very likely his love of art in combination with parametric planning that allows him to perfectly calculate and implement such amazing projects. 'It was very similar for me in the Renaissance', we hear Philibert de l'Orme calling out from the architecture heaven.

Text: Ingo Woelk





THE Magic Carpet | Berlin Brandenburg Airport (BER) | Photo: Alexander Obst and Marion Schmieding

# Question: What is parametric planning?

**In 2009 Benjamin S. Koren founded One to One GmbH in Frankfurt am Main. He describes his company as a 'studio for visionary geometrics in the areas of art and architecture'. For spectacular projects such as the Hamburg Elbphilharmonie and the European Central Bank in Frankfurt, One to One delivers customised geometric calculations. And for this, Koren is a distinguished expert in the field of parametric planning.**

## How has parametric planning developed in the field of architecture?

Parametric planning is based on a mathematical concept: the description of shapes using variables which can be altered. It is therefore not necessarily dependent on a computer. Analogue parametric planning has its origins in the work of architects and engineers such as Antoni Gaudí or Frei Otto. For example, they used actual suspended models to create shapes. In their case, the adjustable parameters were weights hanging on a string and in this way describe the shape of arches or partitions.

## How is parametric 3D planning different from traditional planning?

Parametric planning today is a digital process. Simply put, traditional draughtspeople drew lines on paper from point A to point B using a drawing pen. Classic CAD planning records this line digitally using the computer. The two points are described based on the numerical coordinate values X, Y and Z in the room. In contrast to CAD drawing, with parametric planning designers no longer have to enter the data manually into the computer. The program automatically calculates the coordinate values of the points using mathematical, geometric and algorithmic formulas.

## The designer then moves from the role of designer to programmer?

Exactly, the designer writes the mathematical formulas in the form of a programming code. The code tells the computer which line it should draw and where. If you change the variables which are fed into the mathematical formulas, the result is an infinite number of possibilities for the position of lines.

## What does this mean in practice?

In practice, highly complex components such as connecting nodes or surface splits are often defined instead of simple lines. It is then possible to develop complex buildings or structures from non-standard elements in which each component is similar but not identical. The designer must therefore no longer manually draw each individual unique component.


The interview was conducted by Michael Pyper.





From a designer to a programmer: Benjamin S. Koren, founder of One to One GmbH | Photo: One to One





# Blickachsen 10 Sculptures as public art

For 18 years now, the biennial **Blickachsen** has been attracting an increasing number of visitors to the city of Bad Homburg von der Höhe and the surrounding region. The project didn't rest on the successes of the first **Blickachsen** exhibitions, but instead underwent evolutionary development to become a prestigious event which now has a solid place on the international art calendar.



## THE NAME IS PROGRAM

'... a small town, below us a hole of a town, but it was an idyllic location and had mineral springs', as François Blanc is quoted. In 1841/42, he and his brother Louis built the first Kursaal (prominent building containing a ballroom, concert hall, gambling room, restaurant and more) and the first casino in Bad Homburg.

Their contract in 1856 included instructions from Prussian gardening director Peter Joseph Lenné to design Blickachsen (lines of vision) in the municipal gardens which should highlight and also connect the individual sections of the park..

Speaking of evolution, not only this biennial event, but also the 'little hole' has evolved. Over time it has become a flourishing spa and convention city with 'champagne in the air and tradition'. And the original Blickachsen designed for these beautiful municipal gardens were the inspiration for the name of the sculpture exhibition, which has taken place there since 1997 and now also takes place in many other cities and towns in the Rhine-Main region.

## ART MOVES OUTSIDE

Gallery owner Christian K. Scheffel, founder and long-term curator, recalls, 'It all began with the idea to combine my passion for contemporary art with the magnificent backdrop of the historical municipal gardens in my home town of Bad Homburg. First I knew from many discussions with artists that they had a desire to present large-format artworks in an outdoor setting. And second it was very important to me to bring contemporary art to the people – even to those who would never think to cross the threshold of a gallery or museum. I am glad that this endeavour has been so successful and am very thankful for the entire team, and also the partners and sponsors of the project'.

## STIFTUNG BLICKACHSEN (BLICKACHSEN FOUNDATION)

The project has grown steadily over the last 18 years and has also internationally become an increasingly popular meeting point for artists, curators and museum directors. Two years ago, the foundation founded an independent body to be responsible for the project. It now carries out this effective cultural work in a manner which is sustainable and visible to the public.

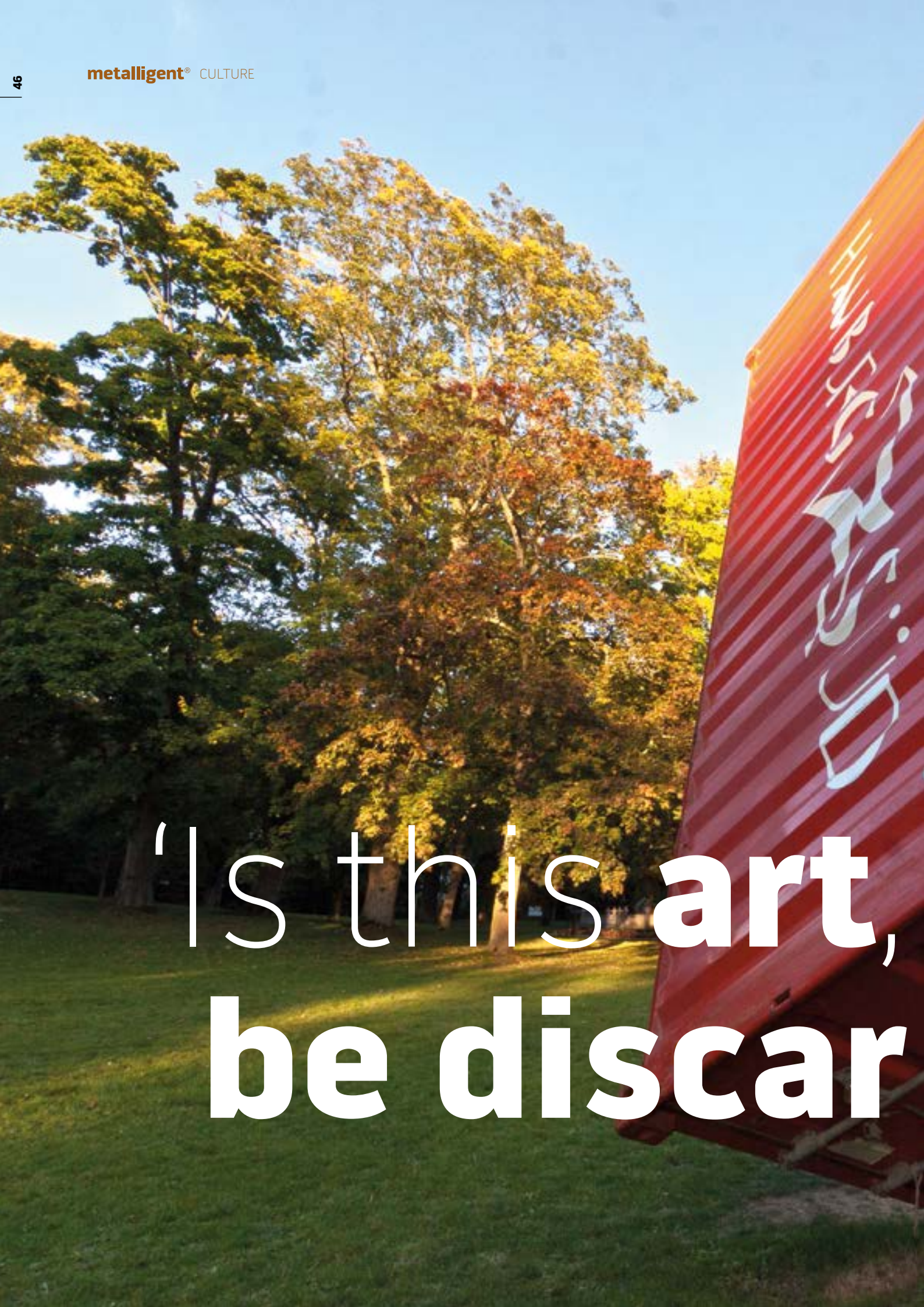
Our aim is twofold: to promote young artistic talent and also continue to increase the public and media awareness for contemporary three-dimensional art. In addition, our long-term objective is to establish the Rhine-Main region as a prominent cultural region and an international centre for contemporary sculptures.

Text: Klaus Altevogt



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‘Is this art,  
be discar



Or can it  
ded?

**In the river, on the side of a building or at a castle. Enthusiastic, angry, polarised: Public art. metalligent® spoke with Christian K. Scheffel, gallery owner and organiser of Blickachsen.**

**Mr Scheffel, what distinguishes 'Is this art, or can it per cent for art' from 'Is this art, or can it public art'?**

Per cent for art is a policy which specifies a percentage of project costs be used for the artistic design of the interior or exterior areas of public or private buildings. Public art refers to artworks which are located in towns and cities in the open air, for example, on public squares, streets and traffic islands, or in parks or other public areas. It can be funded by public bodies, private institutions or sponsors and might be a loan or part of a temporary exhibition such as is the case with the biennial Blickachsen exhibition. In any case, it must be freely accessible to the general public.

**Hasn't public art always existed?**

Yes, public art is not a recent phenomenon. But since the 1960s – as part of the democratisation of art and the revitalisation of inner cities – municipalities and the art community have been active in this field. It now also has a high level of importance in urban development planning. In many places today, public art has helped to shape the city image and reflects societal trends. It is conquering the city – even if only temporarily – and encompassing entire metropolitan areas.

**Is this development causing museums to decrease in importance?**

No. Art in museums is not affected by art in urban space simply because a wide range of artistic media cannot be shown in open spaces. And museums are involved in the presentation of public art – as is the case with Blickachsen. An integral part of the artistic concept of Blickachsen is the curatorial collaboration with a new partner for each exhibition, either a museum or a sculpture park. This year, for example, Blickachsen 10 is working together with Middelheim Museum in Antwerp and will be introducing a number of Belgian artists in Germany.

**How has the public responded to the exhibitions?**

From the very beginning of Blickachsen, the residents of Bad Homburg and visitors travelling here have shown much interest in the exhibition, and



this has only developed into a great sense of enthusiasm. Thanks to the continuity, the consistent high quality of the artwork exhibited and, in particular, the effective mediation work, over the last 18 years of Blickachsen the circle of local residents interested in art has become significantly larger and the exhibitions are now viewed as 'our Blickachsen'. In this way, we have been successful in bringing art to the people.

**'Is this art or can it be discarded?' 'It's spoiling our beautiful park!' – Do you get upset when you hear these types of comments?**

No, not at all. Instead it motivates me to encourage these critics to discover contemporary art, for example, to participate in one of the guided tours and form a more nuanced opinion. You don't have to like all of the artworks – art should be divisive. The loudest of





these critics often end up becoming the most faithful Blickachsen supporters.

#### **Who benefits from public art?**

Well, art itself and of course the artists. Blickachsen offers both established names and young talented artists a forum, where they can exhibit unusual formats, make a name for themselves and gain visibility. This also provides for new sales opportunities.

And, of course, the city and an entire region benefit, including the public. We have had huge increases in visitor numbers. This year alone we had 600 well-attended guided tours. In fact, over time a strong cultural tourism base has developed, which enriches both visitors and residents of Bad Homburg.

#### **Does public art have a future?**

Yes. It now is a central part of urban life and this will certainly continue and develop more.

One more thing. Before the opening of Blickachsen 10, Arnold AG got me out of a jam in an emergency situation by providing impressively quick and straightforward assistance. One week before the opening of the exhibition, we needed a solution for the installation of the work *The Container* by Luc Deleu at the Bad Homburg municipal park. On short notice Arnold AG produced and assembled a custom-fit steel block so that *The Container* was balanced on one corner in time for the opening.

The interview was conducted by Klaus Altevogt.





# Design with **added** value

**A cube is a cube, is a cube, is a cube ... no way! With value engineering you can find hundreds of variants – but, most importantly, you can find the right ones for the given application.**

An error which isn't detected until the product reaches the customer ends up being expensive.

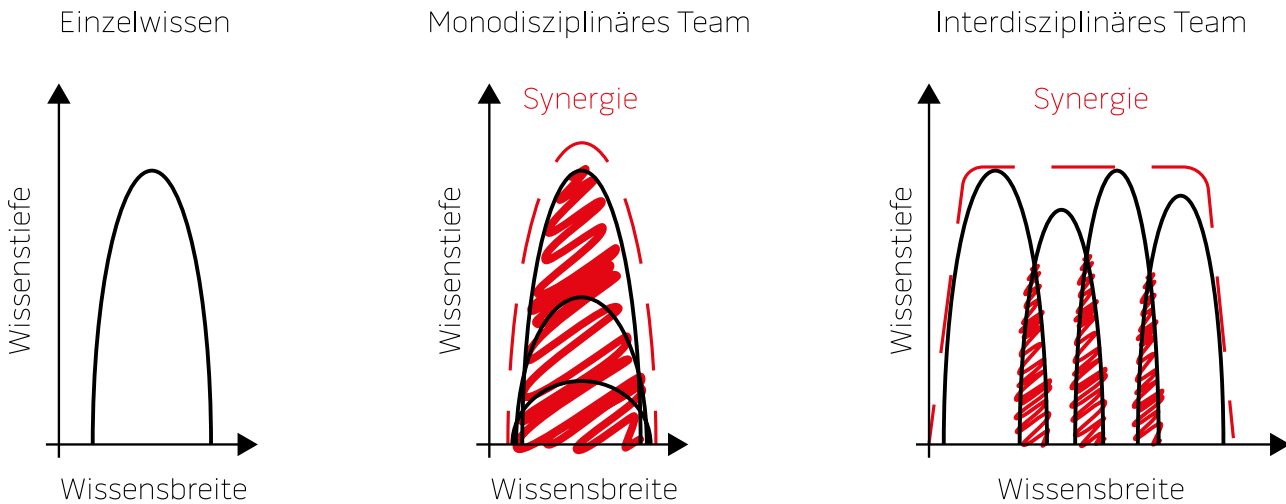
The automotive industry knows a thing or two about this. It is better to do things correctly from the beginning. Easier said than done. But if experts from different disciplines work together to develop a product, many things can be done better and a lot of money can be saved. The method is called value engineering, that is value-oriented design, analysis and control. The nice thing is that this doesn't only work with new products, but also in the evolutionary development of current series products – and it is a way to optimise product costs.

Customers make demands. But what does that mean? Well, these can only be met when a product offers certain features. The technology-loving designer, of which there are many in Germany, doesn't even have to particularly like it. If the functions are clear, the calculations can begin. Based on the structure of the component, the costs of certain functions can be very accurately determined. And then it just clicks! In fact, completely new solution ideas often arise during this process. But that isn't all. The nature of the cooperation between the supplier and customer changes; the supplier's expertise influences the customer's development process.

## ORIGINS IN THE UNITED STATES

In 1947 Lawrence D. Miles was frustrated. He had simply had enough. As a buyer for General Electric, he was dissatisfied with the suppliers' constant price-cutting no matter what the cost. Miles set up a rationalisation group which looked for other cost-cutting options for mass-produced parts. What made his method so successful was that he didn't only include the penny-pinchers, but also experts from production, design and sales.

Together they analysed the functions of the products and abstracted them from their present form and shape. Then they tried to find a solution for the required functions and fulfilling the task at hand in a different way. The most cost-effective solution which would fulfil the function was the 'value' they were looking for. The



company Western Electric later used the method of value analysis in the area of development and for new products.

Today value analysis is even regulated by standards (EN 12973:2001 and EN 16271:2012). An ever increasing number of companies firmly anchor the method in the life cycle of their products. In the design stage it provides new approaches to finding solutions for the development of products and components. It works with both manufacturing technologies and in the selection of materials. Companies also use value analysis in order to be able to interact in a more structured manner with their suppliers.

### eeva: EXPERTISE ENGINEERING VALUE ANALYSIS

Reducing manufacturing costs, increasing customer benefits and minimising revision levels. Sounds too good to be true. But it really works, as Christoph Ebert has experienced first-hand. 'We learned about value engineering through a workshop with a customer and were fascinated by the results'. The idea to connect this method with our expertise in sheet metal processing began to take form. Our motto was to find a more inexpensive way to a product made of metal.

'We also wanted to make the possibilities provided by value engineering available to others so that they could continue to improve their products', says Ebert. Based on this idea, we developed a workshop tailored to the metal industry: eeva. The workshop participants, regardless of whether or not they were production customers, receive a comprehensive and innovative value analysis of an already existing or a new product made primarily from metal'.

A special feature of collaborative value engineering is that there aren't any ready-made solutions; instead, the customer drives development forward in a collaborative process, which is moderated by external consultants. And this process is supported by Arnold. 'We always base value analysis on everyday practice, which is not hard to do since most of the participants work directly in the field, albeit in different disciplines'.

### EXPERTISE AND CREATIVITY

Professor Dr.-Ing. Peter Saile (holds equivalent of PhD in engineering) is a value engineering expert and has led such workshops for many years now. He teaches at Pforzheim University.

He is convinced that 'the focus value engineering has on function costs is unique and clearly distinguishes the method from other related methods'. However, the key to success lies in the personal experience the consultants offer.

'This type of cooperation with a company like Arnold combines our expertise in areas ranging from manufacturing processes and product development in the automotive industry and life sciences up to small and medium-sized component manufacturers with competence in metalworking'.

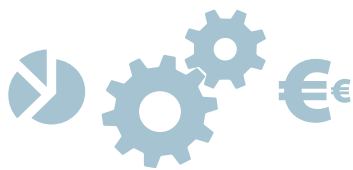


Prof. Dr. Ing. Peter Saile

## WORKSHOP MODULES



Module 1: Introduction to the method and analysis of the current situation



Module 2: Developing suitable solutions



Module 3: Creating final documentation

A typical value engineering workshop is divided into five sections. The participants are first introduced to the method and process, and then a few example analyses are explained. Christoph Ebert says, 'The second step of the functional analysis is particularly important for later success'. Like a toy construction kit, in this phase the product is broken down into its individual components or functions. 'You look at everything and decide according to a specified schema what meaning and proportion the function of a certain component has for the overall function and costs'.

Then it starts to get creative. Several groups develop new solutions. Our motto: A little craziness wanted!! Inspiration is provided, for example, by other sectors and specialist fields, but also by natural evolution. We think here of the field of bionics. 'In the evaluation phase, we put the solutions to the acid test'. They must be producible and really reduce costs', explains Christoph Ebert.

## IMPLEMENTATION IS THE A&O

The solutions often lie in finding better work processes, standardising different but functionally similar individual parts, combining several components and functions in a single component or in establishing simplified connection techniques. This often leads to 'savings in the order of 20 per cent', as Ebert knows from experience.

'It is important for companies to have a consultant who is able to identify the company's specific situation and retain responsibility for the project until it is successfully implemented', advises Professor Saile.

In other words, a workshop alone doesn't bring cost reductions. The final documentation of the workshop forms the basis for the new design or necessary adjustments. Generally, customers do the designing, but discuss the intermediate results with the workshop leaders to be certain that they are on the right track.

In a post-workshop phase, Arnold provides all of the necessary steps, from design support to prototype construction and pilot production with function tests. On request, they also provide assistance with international series production. In this case, Arnold assumes the transfer of expertise to international suppliers and responsibility up to series production.

More information about eeva, value engineering and 240 metalligent solutions as to what can be made from a cube can be found on the website [eeva-methodik.de](http://eeva-methodik.de).

Text: Michael Pyper

# SIGNIFICANTLY DECREASED COSTS

If flying is one of the safest modes of travel, then this is also a tribute to Smiths Heimann GmbH in Wiesbaden. The company develops and produces security technology such as baggage screening systems and body scanners. They have been focusing on the topic of 'value added – value engineering' (VAVE) for some time now and have even established their own VAVE department. metalligent® spoke with engineer Matthias Crass about his experiences.

## **Mr Crass, what does a typical project that is suited for a VAVE Workshop look like?**

Typically with our projects we focus on possibilities for more cost-effective production of series machines, mainly sheet metal parts and weldments. At our first workshop, the task was to design a new system which was optimally adapted to the latest production methods and was therefore cheaper to produce than comparable older systems. We also looked closely at the materials used in order to weigh the function and costs against each other.

## **What was the result?**

The team consisted of our engineers, product managers and manufacturers as well as our partners from Arnold. Together we devised a completely different design which met all of the requirements of our customers and product managers but still was more cost-effective to produce. The rapid cost estimates and constructive suggestions from Arnold were very helpful.

## **What does this mean in practical terms?**

We are in fierce competition with producers from Asia. And our new baggage screening system can put us in a better position. The system can be produced worldwide, which from a global manufacturing perspective is an enormous advantage. The cost of the workshop will certainly quickly pay for itself by the number of units sold.

## **Will there be more such projects and workshops and what will the objectives of these be?**

We offer different options based on the type of product. For mechanical design, we look primarily at mechanics, frames, and coverings for systems. And we have already conducted a workshop with this focus. We modularised an entire machine group and were able to make significant savings by using identical parts, different materials and alternative manufacturing processes.

The interview was conducted by Michael Pyper.

# SIMPLER AND CHEAPER: the new EU patent

**It was the beginning of the 70s. As the Beatles separated, Gerd Müller was making goal after goal and the hippies were shaking the last of the Woodstock dust out of their hair. And it was at this time that the idea of uniform European patent protection matured. Now the moment has arrived. EU patents can be issued for all participating EU countries, but also revoked.**

The plan is that starting in 2017 there will be national patents, European patents (EP) and the new EU patents. It is important to distinguish clearly between the latter two. The European Patent Office deals with applications and lawsuits for European patents (EP). If a person is sued for patent infringement, further action must be taken at the national level. This process is expensive. Inconsistent and inefficient lawsuits as well as the required translations cost a lot of money. The new EU unitary patent (official: European patent with unitary effect) aims to eliminate the weaknesses of the EP.

## SAVING MONEY WITH A UNIFORM SYSTEM

The centrepiece of the new law is the Unified Patent Court (UPC) with central chambers in Paris, London and Munich. In just one step, a company can win recognition for its technical patent rights for all of the signatory countries of this European agreement. The exact opposite can happen as well. With just one ruling, the UPC can also reject, that is revoke, the patent status for all countries. The biggest trump card is the lower costs of the EU patent as procedural languages are limited to English, French and German. Patent expert Dr Thorsten Vormann, partner at the international

law firm K&L Gates LLP, Frankfurt: 'The validation of European patents for the large number of countries was previously quite expensive, but now this flaw will be corrected'. According to the European Patent Office, an EP for 25 countries currently costs €32,000, which includes €20,000 for translation costs. After a transitional period, the EU patent will reduce the total price to €4,725. In addition, the fees to extend patent rights will be much lower.

## ABOUT THE EU PATENT

Just as before, the application and issuing procedure will be carried out in accordance with the European Patent Convention (EPC). For EPs issued after the enactment of the new law, a Unitary Effect must be requested. Existing EPs also fall under this substantive law without being eligible for uniform enforcement and cheaper renewal fees. If the optional standardisation of the patent rights is not desired, the 'opt out' option becomes important. With this step, the patent holder takes their European patent out of the EU patent package. It can then no longer be revoked in a single lawsuit. And violations must be clarified for specific countries.



## THREE STEPS TO EU PATENT HAPPINESS

Dr. Thorsten Vormann explains how companies can prepare themselves for the EU unitary patent in three steps.

1. Search your portfolio for weak and strong patents. This type of classification is usually performed by a technology expert in the company.

The latest technology often makes weak patents vulnerable. Strong patents can most likely be defended against attacks.

2. Filter the alleged weaknesses out of the European patents and practise the 'opt-out' option.

'Opt in' is recommended for strong patents. With a single lawsuit, major EU players can take action against all parties who have violated their patents in the EU. In the case of European-wide patent violations, a smaller competitor with a strong patent can step on the toes of the competition.

It is recommended to leave strong patents in the unitary patent system. This way, with your patent rights, you can take legal action against third parties with effect for all signatory countries.

3. Check and adjust concluded licence agreements. Patent holders should prevent licensees from being able to sue each other and should secure the opt-out option.

If a EU patent will fall under an existing licence agreement, the exclusive licensee could try to take action against other licensees in other territories. Relevant clarifications should be added to existing licence contracts.

Second tip: the licence agreement should stipulate that in the case of European patents only the patent holder can decide to opt-out or opt-in. Then it can't come to an unforeseen total loss of the patent or possible damage claims for the licensee.

## WHEN DOES IT REALLY GET STARTED?

Prior to the beginning of its implementation in 2017, the UPC and its work processes will have a six-month test phase. The central chamber of the Court of First Instance will be located in Paris (general and electronics), London (life sciences) and Munich (engineering). There are also regional chambers and in Germany four local chambers as well (Hamburg, Düsseldorf, Mannheim and Munich). This isn't a coincidence. Given its faster negotiations and comparatively lower costs, Germany is a Mecca for patent litigation. The Landgericht Düsseldorf (Regional court in Düsseldorf) is the undisputed leader in Europe with around 600 patent infringement proceedings annually.

The international commitment to quickly start the unitary patent seems to currently be quite high, and it may be put into practice very quickly. But the date is not yet set. As of November 2015, Germany and the United Kingdom, required member states, have not yet ratified the UPC agreement. Spain, whose lawsuit failed, will probably not participate. And what if the United Kingdom leaves the EU? Sisyphus sends his greetings.

Text: Ingo Woelk

If you don't invent, you disappear.  
If you don't patent, you lose out'.

Erich Otto Häusser (1930–1999), German lawyer, 1976–1995 President of the German Patent and Trade Mark Office



Dr. Thorsten Vormann, Partner at K&L Gates LLP in Frankfurt, as an expert in the field, he reports on EU uniform law relevant to international companies.  
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Photo: Franke Edel

## EXPLORING EVOLUTION

The human body is a true miracle. Skin cells are replaced every four weeks and red blood cells every 120 days. It is estimated that every cell in our body is completely renewed within seven years. And at this point at the latest, many people say to their partner: 'I just don't know you any more. You've changed. ...'

Vince Ebert, born in Odenwald, has made evolution into a program. For a good two years now, the cabaret artist and physicist has been 'evolutionarily' touring across the stages of the Republic of Germany. Many know him from the ARD series *Wissen vor acht* (Knowledge before 8 pm), which broadcasts daily shortly before the *Tagesschau* (German news). He provides answers based on science and explains, for example, why nature invented sex, why intestinal bacteria are cool and why panda bears are idiots. 'Evolution' gets to the bottom of the big questions about humanity. Was the Big Bang really an explosion? Could we at some point become immortal? But also: Is the *Musikantenstadl* (live TV show featuring folk and pop music) compatible with the theory of evolution? Vince Ebert's goal is to use humour to teach people about scientific processes.

Ebert truly begins at zero, with the Big Bang – and incidentally, even if there had been organisms who could hear at the time, they wouldn't have heard a thing. Approximately 3.5 billion years ago,

the first form of life arose 'in an oily-slimy pond, virtually the early form of an insurance representative', says Ebert with a twinkle in his eye.

He looks back at the dinosaurs, Sabretooth and plague viruses; nothing has really been able to harm people. 'Even the Lehmann Brothers, TV chefs and docusoaps couldn't throw us off course'. We no longer have natural enemies 'except of course our own relatives'.

Vince Ebert simply knows how to add a little humour to make scientific facts interesting – boredom doesn't have a chance when he's around. However, you will learn a lot from his shows. In an hour and a half with Vince Ebert, you would probably learn much more about yourself and the origins of humanity than you did during the entire time you were in school. And so he also answers to the question of how *Homo sapiens* were able to pull off such a brilliant career. The CD for the program is available from Hörverlag (a German audiobook publisher), and dates and tickets for his live performances are available at [www.vince-ebert.de](http://www.vince-ebert.de).

Text: Michael Pyper

# Flying sparks – SOME THOUGHTS ON EVOLUTION FOR THE NEW YEAR

## Length isn't everything ...

Six metres high, a neck that extends two metres long and even longer legs. As the tallest land animal, giraffes seem well adapted to their environment. Eating at dizzying heights – no competition, no problems. Drinking is another situation all together. Then giraffes have to spread their legs far apart and lower their neck and head down in an awkward position. They are not able to see possible predators. But if they do, they can sprint away – and at speeds of up to 60 km/hr. But getting going is difficult. Their long neck does help somewhat to keep their body aligned. However, accelerating from 0 to 60 is something like sitting in a car which is idling and then suddenly flooring it in fifth position. That can't be healthy.

## Dive in

It could open its giant mouth at the water's surface and relish taking in entire schools of fish. But no, what do sperm whales do instead? They dive down to depths of up to 1,000 metres to devour their favourite food, the giant squid. This is not only extremely dangerous, but it also ruins their skeleton, a result of the bends. Why, dear Evolution?

## Porsche drivers beware!

With the fastest of all land animals, the cheetah, evolution has placed its bet on 'high speeds'. Speeds of over 100 km/hr have been measured. But after the rapid sprint to capture its prey, the feline predator is so exhausted that it first needs to rest – and often has to sit and watch while other predators devour the feast. Devastating, don't you think?

## Enjoying your food

No talk of 'the cigarette afterwards' – the act of love for the praying mantis mostly ends with the beloved being eaten by its lover after copulation! Sometimes also during, and now and again even before. Apparently the future mother allows herself to have an extra snack rich in protein – preparing for her young offspring way in advance. But, Evolution: without men, there would be no offspring! Ever thought about it?

Texts: Klaus Altevoigt

### Would you like to read more?

1. Mara Grunbaum: Liebe Evolution, ist das dein Ernst?! (Dear Evolution, are you serious?!) Knauer Taschenbuch (publishing company)
2. Jörg Zittlau: Warum Robben kein Blau sehen und Elche ins Altersheim gehen. (Why seals can't see blue and moose go to retirement homes) Pleiten und Pannen im Bauplan der Natur. (Disasters and mishaps in nature's plan) Econ-Verlag (publishing company)
3. Jörg Zittlau: Warum Affen für die Liebe zahlen. (Why monkeys pay for love) Noch mehr Pleiten und Pannen im Bauplan der Natur. (More disasters and mishaps in nature's plan) Ullstein



MERRY CHRISTMAS  
AND A HAPPY  
NEW YEAR!



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