What's N3xt

Connecting People and Technologies

// One with the universe

Delivering maximum performance and feeling great – how does flow work?

№ 04

Flow 09

Dear readers,

Are you familiar with flow: when you're completely absorbed in an activity and forget time and space? I usually achieve that state on Saturdays in the office, where I can read and work on things without being interrupted. Or when I'm out running in the evening with a clear head in the fresh air. In our cover story, we show how people unleash the power of flow to boost their motivation and productivity without mental barriers.

Modern office architecture promotes flow: nowadays, many companies are lighting »imaginary campfires« in New Work environments so that people can gather together and innovations can emerge. Read how this works in the Otto Group on page 12. By contrast, business software can really put the brakes on flow because only a few functions are used or mistakes are made in operation. Tools for digital adoption help business processes run smoothly. Read more on page 28. That's what it's all about: ensuring that the opportunities gained by organisations are also exploited.

However, flow doesn't mean going with the general mood, but sometimes swimming against the current. What it takes is individual entrepreneurial spirit, the 'now more than ever' mentality. Or to put it in a more international way: talent is nothing, attitude is everything. Sometimes, making the best of a situation all depends on attitude.

It is precisely this attitude, getting things done, that is an important form of flow for me as an entrepreneur: approaching a major task in a playful way and becoming completely absorbed in it. That's the only way to change one's situation for the better, even if the task seems overwhelming.

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One with the universe

While climbing mountains, playing music, running or making things – people experience flow in lots of different situations. Including at work. In some jobs, flow is even a prerequisite for good performance. It is therefore crucial to understand and promote the phenomenon of flow.

TEXT *Bernd Seidel*

IN FLOW FOR PEAKPERFORMANCE

BE ONE WITH THE UNIVERSE

*In flow, we are active and highly focused,
yet feel light and free. Space and time are forgotten.
According to McKinsey, performance increases fivefold.
But can we consciously practise flow? And what role
does individual responsibility play?*

»In flow I am one with the universe«, said Albert Einstein. Apple founder Steve Jobs had »the best ideas when [he] was in flow«. *»Flow just feels good, you're completely absorbed by the task. You forget about thirst and hunger. The world outside is a long way away and can cope without me for a moment. You hardly notice any worries. Time just flies by«*, explains Leonie Kloep, researcher in the Work and Health working group at the Institute of Psychology, University of Lübeck. Optimal experience and peak performance are other descriptions of the state. What could be more logical than to look for ways to promote moments like these in everyday life and at work?

»Basically, everyone can experience flow. Be it in sport, artistic activities, programming, on an assembly line, in sales or in accounting – alone or in a team«, says Leonie Kloep, based on her research. Professor Dr Florian Becker, author of the book »Positive Psychologie: Wege zu Erfolg, Resilienz und Glück« (Positive Psychology: Ways to Success, Resilience and Happiness), goes a step further. »There's no high-end without flow. In some professional fields, you have no chance of being successful without flow.« He cites musicians, martial artists and Formula 1 drivers as examples.

However, we know from psychology that there are people whose specific character traits facilitate flow. One

of the most acclaimed models for personality analysis is the **Big Five Model** (bigfive-test.com). *»People who score high for conscientiousness and extraversion and low for neuroticism in the analysis get into flow more easily«*, says Kloep. Extraversion refers to an outward-looking personality profile. These people find communication and action within social groups stimulating. They are likely to be active, energetic, dominant, enthusiastic, talkative and adventurous. A low score for neuroticism means that these people tend to be more emotionally stable and less irritable. They are a pillar of strength and resistant to internal and external distractions, the number one flow killer.

But why does flow feel so special? Flow has a positive effect on our performance and wellbeing. However, the mechanisms behind it have not yet been fully researched. »The challenge lies in measuring the flow experience as precisely as possible – because at the point the enquiry is made, flow is already gone. Interruptions and flow are not compatible«, says Kloep. In addition to subjective descriptions of individuals, there is a range of physiological markers that can be indications of flow experience. These include heartbeat, heart rate variability, skin conductance and muscle tone. Emotional states, for example, can be measured based on the activity of facial muscles.

»Everyone can experience flow.«
Leonie Kloep

Test subjects, including those in teams, who experienced flow have a moderately elevated level of the stress hormone cortisol. »Flow is typically associated with a moderate experience of stress, i.e. an activated state in which people are neither bored nor overwhelmed«, says Kloep.

The good feeling may also be due to the *hypothesis of hypofrontality* which authors Steven Kotler and Jamie Wheal describe in their book »Stealing Fire«. »In flow, the disruptive ›what am I actually doing here?‹ feeling in the frontal lobe is reduced.« This also means that the perception of time that is calculated in the frontal cortex is turned off. »Without this ability to separate the past from the present and the future, we are immersed in an elongated present, the ›deep now‹«, write Kotler and Wheal. No distractions, the eternal critic is silent. Wonderful! ▶

From the variety of descriptions and subjective experience, Leonie Kloep and her team define three characteristics for the phenomenon of flow: absorption in the task, enjoyment and intrinsic motivation and a perceived balance between one's own abilities and the requirements of the task.

ABSORPTION can have a performance-enhancing effect because it is partly based on a special form of information processing similar to tunnel vision. Attention is completely focused. This is something that software developers often describe, for example, including full-stack developer Maurice Neumann in his blog article »Programming in the Tunnel: The Importance of Flow State for Productivity«: »When a programmer is ›in the tunnel‹ this shows his deep immersion in his work and complete concentration on a particular task. In this state, increased creativity, productivity and efficiency is achieved.«

The second characteristic of flow, **THE REWARD**, is found in the activity itself, it is intrinsic. In programming, for example, success – whether a code works or not – becomes apparent very quickly. The functioning program is the reward. When training for a marathon, improved times and the rush of hormones around the body are the reward for the effort.

Professor Dr Florian Becker, an expert in communication and organisational psychology at TH Rosenheim, sees room for improvement in the working world when it comes to intrinsic motivation. *»Unfortunately, as a society we rarely manage to love what we do.«* There is not enough psychological expertise and knowledge in society about the positive effects of intrinsic motivation, he says. The activity itself is the thrill, it is challenging and rewarding even if there is no result or at least not an immediate one. It took Edison nearly 9,000 attempts to develop the light bulb and bring it to market.

Professor Dr Florian Becker

FLOW ZONE: BETWEEN OVERCHALLENGED AND BOREDOM
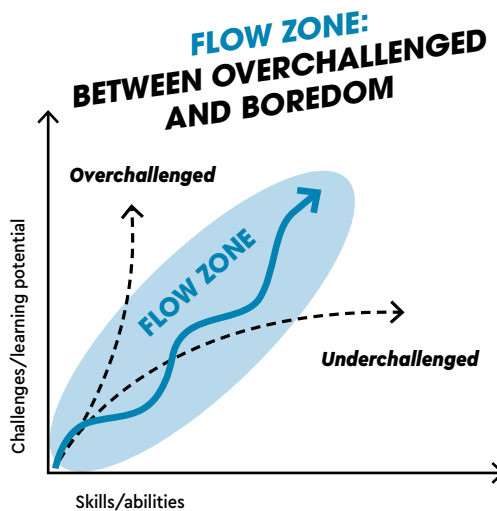
The essential basic condition for the flow experience is the existence of a perceived fit between the requirements of a task and the skill level of an individual.
Source: Uni Ulm

For Becker, aspect three **– ONE'S OWN ABILITIES AND REQUIREMENTS –** is also often not in balance. *»An important prerequisite for flow is that the activity corresponds to the individual's level of competence, so it is challenging but not too hard nor not hard enough«*, says Becker. In technical jargon, this is called the flow corridor: the ideal zone between requirement and ability. However, it is quite narrow. »Some 43 per cent of employees feel underchallenged in their roles«, says Becker, citing the results of a study carried out in Germany by Avantgarde Experts in 2022.

In contrast, around 17 per cent of employees feel overwhelmed. *»Boredom and overload both lead to stress in different scenarios«*, he says. Consequently, only around 40 per cent of employees are in the corridor in which flow is possible. »Obviously, companies are unable to respond to this development. The warning signs are there.« Becker's pointer for management: optimise working conditions and job content and look much more closely at whether the task and the person performing it match. *»Motivation increases significantly if you allow employees leeway, transfer responsibility, offer variety and versatility, give realistic feedback and communicate the meaning and purpose of tasks«*, he says. Realistic time frames are also important, he adds, and a culture of appreciation must be fostered. This pays off, as a study by Deloitte revealed: at companies with a strong culture of appreciation, employee satisfaction is 20 per cent higher and productivity is 12 per cent higher.

TEAMS ON FIRE

Although flow is often perceived as an individual experience, there are ways to encourage this state within a team:

SHARED GOALS
can lead to a collective flow experience.

THE DISTRIBUTION OF TASKS
must match members' individual skills and interests.

AN OPEN COMMUNICATION
promotes the flow of energy as team members can freely express their thoughts and ideas.

SHARED SUCCESSES
should be celebrated to boost motivation and togetherness.

FEEDBACK CULTURE
– mutual and constructive – helps to improve individual performance.

TEAM RITUALS
like regular stand-up meetings, brainstorming sessions or a psychological team check promote spirit and concentration.

FEATURES OF A CREATIVE BURST

FOCUS AND CONCENTRATION:
You are fully absorbed in a task.

CREATIVE BURST:
You experience a kind of intoxicated state of action and creation of something.

CLARITY:
You know exactly what to do and how to do it.

SOLVABILITY OF THE TASK:
You are confident that the task is solvable and feasible, and it is challenging without being overwhelming

LIGHTNESS:
You are in the here and now, feel an inner calm, everyday concerns don't matter.

TIMELESSNESS:
You lose track of time, hours feel like minutes.

INTRINSIC MOTIVATION:
The high level of drive comes from within you. You do something because you want to do it, and not because you will be rewarded for it.

However, handing over responsibility for balance and thus for success at work solely to management is not enough for Becker – ultimately, a proactive approach is crucial here. »I myself can say I'm interested in a new project, I'd like to get on board, that I'm capable of handling larger projects and leading a team. Equally, you can explain that you want to give up a task if there are (too) many new demands for you. It's about self-care.«

How exactly can a task raise the level of competence without being underchallenging or overwhelming? The answer might interest companies so they are able to set benchmarks. According to the Internet, the challenge of a task should be four percent higher than the normal performance level in order to get in flow. This is not scientifically proven. »It's very individual«, says Lübeck-based researcher Kloep. And four per cent of what? Constantly challenging oneself is a tried and tested approach. Clearly formulated goals are a factor here which can have a positive effect on the creation of flows. She sees an approach for targets wherever KPIs are defined, such as sales or savings. Whether that does justice to the performance level is another question.

Professor Dr Florian Becker is also sceptical about generalised targets. He therefore regards the 500 per cent increase that was reported years ago by consulting firm McKinsey as a snapshot in a particular context. »For a world-class sprinter, adding another four per cent is hardly achievable. But as an individual or a team in sales, 500 per cent more sales or significantly reducing the error rate at work are, depending on the scenario, perhaps even too low.«

FLOW is at any rate a useful concept for a time in which many people feel stressed and want to pay more attention to themselves and their strengths and personal priorities. Further research will show whether productive self-forgetfulness is any good as a modern management method for the self-optimisation of employees. Perhaps the ultimate secret of flow is that it always remains a fleeting experience. And we can only very rarely be one with the universe, as Einstein put it. ⬤

WE JUST WANT TO PLAY!

COMPANIES ARE INCREASINGLY TAKING ADVANTAGE OF THEIR EMPLOYEES' URGE TO PLAY IN ORDER TO BECOME MORE PRODUCTIVE AND COME UP WITH NEW IDEAS. <u>WHAT ARE GAMIFICATION METHODS GOOD FOR IN THE OFFICE?</u>

TEXT *Anja Reiter*

From Lego and computer games to role play: when children play, they forget all about the world. The kitchen becomes a pirate ship and a teenager's bedroom turns into a gaming den. But adults too can experience moments of absolute concentration during stimulating games. Some deliberately cultivate digital carrots, while others solve puzzles together in escape games. According to Statista, around 54 per cent of Germans play computer and video games at least occasionally; almost as many play a board game once a week.

Companies can also take advantage of this urge to play. Roman Rackwitz runs Engaginglab, an agency that advises businesses on gamification. The basic idea is that people who are so absorbed in their work that they don't notice time passing are more motivated – and more productive. »In immersive games, we forget time and space«, says Rackwitz. Flow is the name for these moments in which people are completely absorbed in the now of their actions. *»For our brains, there is no better state in which to learn than in this flow state.«*

There is a wide range of play-based methods in the world of work – particularly in workplace training. SAP uses a digital escape game in a space environment to raise employees' awareness of phishing and password security. Other companies use serious games to make change processes understandable for staff. For example, textile giant Mewa had a browser game developed in which employees could slip into the role of manager themselves and make strategic decisions such as merging production locations.

»We should design work processes in such a way that they remain attractive«, says Rackwitz. Clear goals, clear rules, challenges appropriate to skills, real time feedback and information transparency – for Rackwitz, these five elements are essential for games and for flow, and should be carried over into working life. Unlike in games, there is often a lack of transparency at work, he says. Supervisors' instructions are unclear, employees have to wait a long time for feedback meetings. Requirements could be made transparent and progress visible with leaderboards, levels and loading progress bars. Competing with yourself is always more important than competing with colleagues, emphasises Rackwitz. ▸

Roman Rackwitz

Founder and managing partner at the agency Engaginglab

Andreas Pichler

Organization developer and systemic consultant

When Andreas Pichler unpacks the colourful building blocks of LEGO® SERIOUS PLAY® and Playmobil® pro in one-to-one coaching sessions or team workshops, he is mostly met with lots of enthusiasm rather than a frown. Some office workers would get so lost in playing and building that they would forget everything around them. The benefit of the well-known children's toy is that it specifically addresses the hand-brain connection, which means ideas and solutions emerge intuitively. Arranged Lego® bricks become metaphors to simplify complex processes, present conflicts or develop new product ideas.

»Using play-based elements, people are able to leave the seriousness of their work behind them. Creativity improves«, says the organization developer and systemic consultant. »Internal barriers and the fear of making mistakes are broken down.« His role as coach is to set clear tasks, keep an eye on the clock and moderate the discussion on results after the construction phase.

Play-based approaches can also backfire. In a laundry at the Disney theme park in Anaheim, California, huge monitors showed the speed of all workers in flashing coloured lights: they shone green over those who were working efficiently and red over those who were far from achieving a set ideal target. The pressure to perform became so strong due to this efficiency monitoring that some workers did not take breaks, thus risking their health. For gamification experts like Roman Rackwitz, this is an example of misconceived gamification. He says the most important thing when playing is that it still has to be fun. ▪

LEGO® SERIOUS PLAY® AND PLAYMOBIL® PRO

Playing with Playmobil® and LEGO® teaches people to think with their hands. **This method combines the stimuli of modelling and playing with a moderated idea generation process.** In several construction phases, workshop participants develop detailed models using the blocks with the aim of presenting their perspectives on given issues. The focus of LEGO® SERIOUS PLAY® is on building and constructing, while Playmobil® pro is used for role play and storytelling.

DESIGN THINKING

Design thinking is a method for developing innovative solutions to complex problems in teams. **The key rule is to put people at the centre of thinking.** Be it levels, stories or roles – when designing the design thinking process, all the building blocks of a game design can be used.

SERIOUS GAMES

Serious games convey knowledge and skills in an entertaining way. They are usually created for a specific training purpose. In »Moving Tomorrow« participants drive through different countries in the role of start-up employee Lucy with the aim of acquiring intercultural knowledge. In »Worlds of Materials« players travel through parallel universes as a professor to become more proficient in materials science. **Serious games have specific learning objectives that are to be achieved.**

ESCAPE GAMES FOR COMPANIES

Employees collaboratively solve a puzzle embedded in a wider background story that fits the company context. From physically interactive adventure games (escape rooms) to board games and digital escape games – the team experience has countless formats. The range of possible uses is just as wide: as an entertaining company event, a recruiting tool or a means of providing information.

How do you get into it, what brings you out of it?

TEXT **Alexander Freimark**

I experience a form of flow in clearly structured activities: when working out in the gym with clearly defined repetitions and sets, or at work when an IT ticket is well structured from start to finish. I like listening to music at the same time. I'm much more productive in flow, and time passes much faster.

Lena Rädler

Software Engineer, Centre of Competence for IT, Innsbruck

How does flow feel exactly? Most of the time I don't notice much around me, I'm immersed in my own world. I can recommend the Pomodoro Technique as a place to start, especially for time management of smaller tasks.

Most of the time flow ends with the task, or because I've been disturbed. For example, if someone speaks to me, if it suddenly gets loud or if the tasks are unclear. Lots of queries also interrupt flow.

I actually experience flow quite often as I am always involved in new projects. That motivates me and is fun, as is success with customer contacts. **In flow, I feel like a winner – combined with the feeling of having done everything right.** That stimulates new energy and I reach a phase of more productive work.

However, bad news – be it personal or work-related – stops flow abruptly sometimes. The same applies when tasks simply don't want to come to a positive end. That makes me demotivated and slows down flow.

I also don't see flow as a solution for dealing with lots of things at the same time or faster – quite the opposite. In that situation, flow usually doesn't even happen. For me, the feeling is welcome support for tasks I do well and enjoy.

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Flow

I find flow in my band AKONOLINGA (latest album »'til the Funk gets U«). It's there for me in our music – in rehearsals and definitely in each performance. Whether it's soul, funk, hip-hop or jazz: up on stage, I'm suddenly one with my bandmates, the groove, the audience and the world. Everything else and the passing of time are forgotten.

The good thing is that **when flow takes me away, I play solos much better because ideas start fizzing and the licks are perfect.** It's not a coincidence because I love the music I play. Flow usually lasts until the end of a performance. Then the mood swings a bit before the vibes die away.

Stefanie Luckhaus-Freitag

Office Manager, FERCHAU Wuppertal

Eugen Firla

Head of Business Controlling, FERCHAU

What´s N3xt

The imaginary campfire

TEXT *Hans-Jörg Munke*

Organisations that want to boost the creativity and performance of employees should rethink the working environment. Mail-order retailer the Otto Group is doing just that. A working environment of the future has been created from an old warehouse – without any dedicated offices or fixed room structures.

New Work, flexible working and mobile working are in vogue. These new ways of working call for new work environments. More and more companies are therefore offering their employees in-house co-working spaces as an alternative to working from home. How can offices be designed to aid concentration, boost productivity and improve communication?

From Silicon Valley to Switzerland to Hamburg, a design concept is being used as a blueprint to encourage flow at work: activity-based working (ABW). The ABW theory was first introduced in the early 1980s by American architects Phillip Stone and Robert Luchetti. The idea is that activities and environments are structured and interpreted in ways that allow everyone to work wherever their tasks are done best and most effectively supported. What that actually looks like in practice is not set in stone and leaves room for creativity.

Deloitte's »Future of Workplace« study shows that activity-based working significantly boosts the satisfaction of its own employees. More than half of respondents have a positive view of ABW. In the 25- to 34-year-old age group, approval rises to over 90 per cent.

Well-known ABW pioneers like Microsoft and Google recognised the benefits of this model years ago and implement ABW globally. Swiss pharmaceutical companies Roche and Novartis followed suit. And now the Otto Group in Hamburg has also created an organisational structure with activity-based work areas.

A fully hybrid working environment seamlessly combines on-site and remote working and promotes flexible collaboration.

Spread across a total area of 25,000 square metres are 1,600 workstations, 170 meeting rooms, 3 event spaces and 8 social spaces that serve as meeting places and break rooms. Because all workstations can be used for desk sharing, there will be space for around 3,200 employees in the future.

»When I'm on the campus, I don't sit in the same place for eight hours. Two hours at a desk, then a meeting room, then a think-tank – it works really well«, says Hossein Yazdanian, architect of the new Otto headquarters. There are no requirements to be present in the office or work from home: teams decide individually who works when, how and where depending on the project situation. The result is a fully hybrid working environment that seamlessly combines on-site and remote working and promotes flexible collaboration.

Employees can retreat to quiet areas if they need to devote close attention to tasks or make a phone call.

Tailor-made technology

Architect Yazdanian has delivered the right design concept. »The industrial architecture should be visible; all that remain are ceilings and external walls. The building services and interior decoration are all new.« The building features a wide variety of workplaces and spaces. Height-adjustable desks and extra-large meeting tables are provided. There are think-tanks for spontaneous meetings, telephone booths with touch-screens and selfie lights, and special workstations for pair programming. Acoustically shielded spaces are available for telephone and video calls – at Otto, these are called audiotheques. Library areas provide space for quiet work. There are video lounges for hybrid meetings, and project teams meet in modular work areas known as project garages.

Back to the campfire

Wilke Lowin, a member of the management board of Hamburg-based company gärtner Büro und Wohnen GmbH, also emphasises the importance of harmonious acoustics. »Everything shouldn't be swallowed up, especially in large spaces.« What is needed is pleasant background noise so you can easily ignore a discussion three tables away.

»We need imaginary campfires in companies for people to gather around«, claims Lowin. »That's where innovation happens, not at home.« The 'Back to the Office' study carried out by Fraunhofer IAO proves that employees can work well from home. But 42 per cent of respondents indicated that their innovative ability had diminished. Some 52 per cent cited the lack of informal interaction as a reason for the negative effect on innovation and collaboration.

In addition to acoustics and technology, the right light can also enhance the attractiveness of modern working environments. »It's possible to automatically replicate a daily routine with warm tones in the morning, a bright 5,000K light at midday and dimmed light in the evening«, says Lowin. Even better, however, are lighting options that produce reflections and shadows like in a bright forest glade. But the architect has chosen mainly natural light for the Otto headquarters. Sections of around 1,000 square metres per floor have been cut out to create a nine-storey atrium with a glass roof. There are also large windows on all sides of the building to bring nature inside. This is architecture that impresses.

Wilke Lowin sees another advantage in the New Work working world. »Many companies can't reduce the size of their space anyway, so this provides an opportunity to turn the free areas into something else – a cool casino, a lounge area, a cafeteria. Nowadays, companies have to present themselves as attractive so that employees say: ›I like the setting so much that I enjoy spending my time there.‹«

Designing for activity-based working (ABW)

1. A variety of working areas:
Different spaces for different activities (individual work, team work, meetings, breaks)

2. Flexibility and mobility:
Employees are free to choose the workspace that is best for the task

3. Technological support:
Modern IT infrastructure and mobile devices for seamless working

4. Ergonomics and wellbeing:
Ergonomic furniture and a healthy working environment for productivity and health

TEXT *Alexander Freimark*

UNCONSCIOUSLY UNLOCKING CREATIVITY

RELAXATION – THE SECRET SUPERPOWER

RELAXATION IS NOT LAZINESS - IT PROVIDES A BASIS FOR CREATIVITY. WHEN WE HAVE A CLEAR HEAD, OUR BRAINS CAN FORGE NEW CONNECTIONS AND COME UP WITH BETTER SOLUTIONS. IT IS ALL TO DO WITH THINKING.

Boredom is an unpleasant feeling, and the mere thought of it causes mental stress: train delays, traffic jams, waiting in queues, meetings with lots of people. Boredom is not the smart guy achieving great things and getting in the flow for his next success. Boredom is the inconspicuous one who doesn't talk much and looks out of the bus window as the landscape passes by like a big opportunity in life.

Today, it is clear that boredom – as an expression of being underchallenged – is an opponent of flow. That is also why Dr Jennifer Haase prefers to talk about relaxation. The psychologist at Humboldt University in Berlin is an expert in opposite states of mind:
— when we forget space and time
  or feel space and time,
— when we can do a lot
  or have to leave a lot,
— when we feel highly productive
  or feel lost and confused.

Relaxation can do something which every flow fails at: develop creative solutions and take not just a person but an entire system to the next level. »Giving free rein to our thoughts is important because not doing things and not focusing enables our brains to mentally recover«, says Haase. »That's how we find associations in our unconscious that are out of reach in the focused flow.« So looking at the wider picture broadens our horizons.

FINDING INSTEAD OF SEARCHING

When it comes to creative problems, says Haase, solutions are not obvious – which means we tend to agonise a bit over the task. That is where relaxation comes into play: when we find instead of search. There is a »skill at work here that we cannot control – ideas pop up, thoughts emerge«. The unconscious mind is able to aggregate much more information than the conscious mind, says the psychologist. When left in peace, the brain begins to explore the unconscious. Thoughts wander and creativity is able to thrive.

But relaxation has something of an image problem, being viewed as a sign of laziness. Its relevance to people's own existence is also underestimated. »We ourselves don't realise that our unconscious is working because we are busy thinking rationally all the time«, explains Haase. One reason is stress, for example as a result of high pressure to perform. »Then we don't have the mental space to simply look out of the window and analyse our own stressors.« Breaking the vicious circle becomes increasingly difficult, she says.

DIGITAL BACKGROUND NOISE

Added to this is constant digital noise, which Swiss newspaper Neue Zürcher Zeitung called a self-created »distraction machine«. Everybody has a smartphone, nobody is looking at nothing. Twenty years ago, the vision of ubiquitous computing – the omnipresence of IT – was proposed as a kind of promise of salvation. Today, the old saying has proved to be true: the dose makes the poison.

This is also confirmed by creativity expert Haase, who works at the Institute of Computer Science at Humboldt University, Berlin. At the renowned Weizenbaum Institut, she researches the impact of digitalisation on people and society. To summarise her findings

diplomatically: technology use and relaxation are not the best of friends. »When we're glued to our phones, ideas from our unconscious mind simply can't rise to the surface.« And so we waste opportunities for our brains to process outstanding issues or make links between things, warns Haase. »After all, ingenious solutions don't just come about by themselves.«

The way forward is for us to re-learn how to cope without constant input. Second screens, social media, music streaming, podcasts, videos in the shower – moments without sound are becoming increasingly rare. Going for a walk is a good way to start, says Haase. »But only without headphones.« Which shows that the relaxed path to creativity can also be a difficult one to tread.

EMBRACING RELAXATION FOR BURSTS OF CREATIVITY

Many artists and creatives strike a balance between flow and creative breaks, between practical implementation and unconscious inspiration. Berlin-based psychologist Dr Jennifer Haase believes there is no ideal solution, but there are at least a few promising approaches. »Evidence shows that people who meditate are more likely to make spontaneous associations between ideas in everyday life.« Tests have shown that they are also more creative after **MEDITATION** because people also practise the technique of non-focusing during meditation.

LIGHT PHYSICAL AND EVERYDAY ACTIVITIES are also a good catalyst. These include washing up and ironing, which sometimes have a meditative effect. »In the past«, says Haase »we referred to the three Bs as places where you could let your thoughts run free: in bed, in the bath and on the bus.« Ideas came to you in the shower – automatically, without having to think about them, »because you weren't exposed to any other information.« The psychologist also refers to the **MINDFULNESS CONCEPT**: when washing the dishes, just wash the dishes; when going for a walk, just go for a walk – without any digital connectivity at all. »You can endure it and then cultivate it in everyday life.«

And finally, anyone who would like to become more familiar with the concept of mental idleness should pick up a copy of Flow magazine whose slogan is »For personal development, creativity and more peace«. It focuses on yoga, breaks and mindfulness and on finding a way to escape the rat race and be in the moment. Haase says there is a »nice irony« in the fact that the magazine is called Flow.

Dr Jennifer Haase
*Psychologist at
Humboldt University
in Berlin*

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Flow

What's N3xt

Detecting collisions and clashes

TEXT *Bernd Seidel*

Digitalisation is indispensable within the construction industry. Building information modelling (BIM) is used to map the life cycle of buildings. BIM experts from BPS, a partner of FERCHAU, are creating a 3D model of a laboratory building.

Construction is one of the oldest industries and craft guilds in the world. Thousands of years of experience, 2.5 million employees in Germany and sales of around EUR 60 billion (2023). Anyone who has ever built, refurbished or renovated knows that a lot can go wrong.

»To set the right course from the start and avoid clashes between individual trades, we are using BIM technology and methods in our client's project«, explains Oliver Roth, Prokurist (authorised signatory) at Heldele GmbH, a full-service provider of electrical building services, automation and ICT. Heldele has been commissioned by a leading pharmaceutical firm to implement a complete electrical fit-out for a laboratory – from power lines to switches, sockets, smoke detectors and IT cabling. »Wherever electricity and data flow, we are involved«, says Roth, summarising his company's role.

In the project, use of BIM and 3D modelling is mandatory for the suppliers of all trades. The client wants a complete digital twin of the building. With traditional 2D planning, issues such as collisions between different trades cannot be identified adequately enough, says Roth. »In construction we work with tolerances –

Oliver Roth
*Prokurist (authorised signatory)
at Heldele GmbH*

a millimetre here, two there, but cable ducts and a pillar can collide with each other.« However, BIM enables collision detection and also clash control. Not only that: **BIM saves time on the construction site, increases traceability and quality, and improves change management.**

To sharpen his BIM expertise, Roth contacted FERCHAU Munich. »FERCHAU then brought BPS International GmbH on board whose experts know the topic inside out. That makes them the perfect project partner for 3D implementation in BIM. They support us within the framework of FERCHAU CONTRACT.«

Yuliya Zolotova

BIM Manager and Coordinator at BPS International GmbH

The BPS recommendation is no coincidence: »We've been working with FERCHAU for nearly four years«, says Ricardo Schaitanow, Head of Project Management at BPS. His colleague Yuliya Zolotova, BIM Manager and Coordinator of the laboratory building project, explains the details of the project. All 2D objects are converted to 3D using the tool Autodesk Revit. »Good spatial understanding is a basic requirement for us modellers.« Objects include trailers and booms, cable lines, lighting, low voltage objects and fire protection systems. In some cases, 3D objects from Autodesk Revit that are stored in catalogues can be used for modelling, while others are newly designed.

»Everyone involved in the project works with the same tool, but in their own specialist models«, explains Yuliya Zolotova. The digital models produced by the architects, structural engineers and other technical building trades are then brought together in Revit and checked for

consistency using model-based communication platform Revizto. **Planning errors can therefore be identified and rectified before implementation on the construction site.**

As the person in charge at Heldele, Oliver Roth is pleased that BIM enables reality to be incorporated into the model straight away. »If changes are necessary on site, the corrected data is immediately fed back into the system. For me, that is digitalisation in the skilled trades sector«, he says.

Ricardo Schaitanow

Head of Project Management at BPS International GmbH

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More information about FERCHAU CONTRACT:
ferchau.com/go/de/en/contract

FERCHAU Austria designs management system for ski innovation

Software to shape the future of skiing

FERCHAU Austria's Center of Competence for IT in Innsbruck is currently working on a project management system to promote efficient and transparent management of the ski development lifecycle.

TEXT **Bernd Seidel**

»Skis are high-tech pieces of kit«, explains Sebastian Horngacher, software engineer at FERCHAU's Center of Competence for IT (CoC IT). This naturally involves a high degree of complexity, with factors such as edge properties, hardness, base, construction radii, width, length, weight, materials, composites, and the demand for greater sustainability all playing a major role in ski design. According to Statista, the European market for winter sports equipment is expected to generate around 6 billion euros in revenue in 2024. Some 3.6 million skis were sold in 2023 alone, and the trend is on the rise.

»Skiers look forward to new models being released every year, which means the entire timeline from initial concept to market readiness has to be condensed into just a few months«, points out Sebastian Horngacher. »The complete lifecycle is managed by a production monitoring system.« A renowned Austrian ski manufacturer and FERCHAU customer had been relying on a desktop application for employees across various departments to manage, document and track all of its ski development projects. »The software was long past its prime and no longer cost-effective to upgrade. To make matters worse, the overall performance was really subpar, plus there was no real way to create effective reports.«

And so, the company reached out to CoC IT. *The aim was for the new system to provide transparency and traceability in the development process while also improving employee efficiency.* The plan was to roll out the system across two locations, serving around 100 users each.

Sebastian Horngacher

Software engineer at the Center of Competence for IT, FERCHAU Innsbruck

»It turned out to be a fantastic project. The client was really open-minded and keen to hear our recommendations and insights. »Our initial proposal included a standard software package and a bespoke solution«, recalls Sebastian Horngacher. But after reviewing the market more closely, he and his team decided that an off-the-shelf system wouldn't be comprehensive enough to handle their specific requirements. The new system needed to be highly flexible and open, offering numerous interfaces, various import options and excellent customisation features. »This just wasn't going to be possible with any standard systems«, notes Sebastian Horngacher. The new system also had to be able to integrate reliable data structures, including those from the systems developed in-house.

Taking all of these considerations into account, the decision was made in favour of a custom development based on agile methods, which was commissioned through a project agreement (FERCHAU CONTRACT). »We established milestones and user stories step by step and addressed these in two-week sprints following the Scrum framework«, explains Horngacher. The team used Jira and Confluence for organisation and project management, along with GitLab, Visual Studio and the DevExpress framework to develop the software. C# was selected as the programming language of choice, with Microsoft SQL Server used for the database. »Just as we planned, the system has been in operation since mid-2023 and is streamlining the development process for the latest generation of skis«, concludes Horngacher.

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More information about FERCHAU CONTRACT:
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Joining forces to optimise resources

TEXT *Alexander Freimark*

FERCHAU has been operating in the Alpine Republic for over a decade, with growth and strong customer relationships defining the business in Austria. *Country Manager Fabian Rothballer discusses how the business has developed in this quick-fire interview.*

Fabian Rothballer
*Country Manager
FERCHAU Austria*

The catalyst?

It all started in 2012: I sublet an office with two other people in Linz, and from there we went on to set up FERCHAU Austria GmbH in 2014. Armed with a market analysis from my master's dissertation, contract templates from the Chamber of Commerce, and a German-Austrian glossary, we ventured into the business world without much apprehension. Little did we know what exciting and dynamic years were to come, not only in terms of sales but also with regard to organisational changes and innovative projects.

The people?

Austrians are incredibly smart. There are some great universities here that have produced plenty of Nobel laureates in the sciences – including the winners in Physics in 2022 and 2023. They're also extremely good businesspeople, and that extends above and beyond the tourism sector: there's a strong industrial heart to the country and the people are very tech-savvy, which is what makes FERCHAU the perfect fit.

The customers?

Our partners include the top players in Austrian tech, such as Andritz, Siemens, KTM, Palfinger, Magna, Voestalpine and Swarovski. As trust in our long-term relationships goes from strength to strength, we have expanded our service offerings from traditional engineering staffing to sophisticated contract solutions for industry, commerce, and public enterprises.

The technologies?

Besides our focus on engineering IT, business IT has also become increasingly important for us. Here, our focus is on customers with a business model rooted in digitalisation who are looking to optimise their business processes. This is precisely what prompted us to launch our Center of Competence for custom software in Innsbruck, which now operates internationally and brings everything nicely full circle.

FERCHAU Austria in numbers

Active in Austria since **2012**
400+ employees
100+ IT experts
7 branches

Linz
Vienna
Salzburg
Lustenau
Innsbruck
Graz
Klagenfurt

Zero trust – maximum security

The growing global need for protection against cyber threats is driving ever higher standards for secure and certified IT systems. FERCHAU Madrid has supported various private and public companies in Spain with accreditation, re-accreditation and the management of classified systems.

Cybersecurity is a booming sector right now, with market researchers like Statista reporting a global growth of over ten per cent each year. More than $180 billion is projected to be spent in 2024, allocated equally between tools and services. Integral to FERCHAU's IT security strategy is the Madrid City site, which boasts a comprehensive network of security experts. »Our security portfolio aligns with the NIST 2.0 standard and encompasses all aspects of security«, reports Business Development Manager Patricia Rodríguez Sánchez. This includes governance, analysis, protective measures, attack detection and response, as well as prevention.

Versatility is incredibly important to companies, as evidenced by an international defence corporation that turned to FERCHAU for assistance with various security concerns. »The aim of the project was to obtain certification and re-accreditation for systems classified as ›NATO SECRET‹«, explains Rodríguez, a qualified electronics engineer and security expert. The team also took on the task of helping the client manage classified systems and sensitive information.

»You never know where or who the attacker might be …«

Business Development Manager
Patricia Rodríguez Sánchez

TEXT Alexander Freimark

The project centred around the phases involved in accrediting IT systems, with FERCHAU notably providing support in the following areas:

— *Identification and documentation of all IT assets (CMBD) including hardware, software, networks and data*
— *Detection of potential internal and external threats through vulnerability assessments and penetration tests, along with assessments of the impact of attacks*
— *Evaluation of security measures including authentication, authorisation, encryption and network surveillance*
— *Monitoring and mapping of the classified network to gain an overview of the network topology and take proactive measures*

According to cybersecurity expert Rodríguez, the greatest challenge was protecting sensitive data and information: who can access what, who is responsible, what weak points are there? This is precisely why the customer has implemented a zero-trust approach: »You never know where or who the attacker might be, so it's essential to never trust any people or systems blindly and always be aware of what can happen to the data at any given time.«

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Cybersecurity – the essential services

— **Risk analysis and management** *(ISO 31000, 27005)*
— **Cybersecurity consulting** *(ISO 27000, ISA 62443, NIST etc.)*
— **Accreditation of »NATO SECRET«-systems**
— **CISO as a service**
— **Source code analyses**
— **Pentesting**
— **Vulnerability assessments**
— **Security enhancement for operational systems, databases and web platforms**
— **Blue team / red team**
— **Classified systems management**
— **SOC implementation**
— **Threat monitoring with SIEM and SOAR**
— **AI vs Advanced Persistent Threats (APT)**
— **Forensics**

prime-ing becomes founding member of APSCo Outsource Europe

The staffing industry is incredibly dynamic, but there's something it hasn't yet fully nailed down: *a cohesive network and collaborative efforts to channel innovations and drive forward Managed Service Providing (MSP) and Recruitment Process Outsourcing (RPO) in Europe.* Fortunately, that's all about to change. The managed service provider prime-ing, a sister company of FERCHAU, has become a founding member of APSCo

Outsource Europe (Association of Professional Staffing Companies). As far as our customers are concerned, this means that we are helping to drive the digital transformation in the staffing sector and paving the way for global best practices in MSP and RPO.

For more information, visit:
apscooutsource.org

TEXT **Uwe Küll**

Thoughts that can change the world

Brain-computer interfaces (BCI) make it possible to control digital devices using just our thoughts – including our unconscious ones. But how close does the research come to actual reality?

Passive brain-computer interfaces harness brainwaves to improve the synergy between humans and machines.

The »app-free phone« was a real highlight at this year's Mobile World Congress in Barcelona. Rather than relying on countless apps, the concept revolves around users communicating entirely with the device's AI to perform various functions. It remains to be seen whether users will embrace this move away from dedicated apps, but if one thing is certain, it's that the gap between humans and computers is narrowing. This much is already evident from the considerable advances in brain-computer interfaces (BCIs). Since February 2024, Elon Musk's company Neuralink has frequently reported on a patient controlling a screen cursor with their thoughts through a brain-implanted chip. And back in November 2023, researchers from Duke University in the U.S. caused a real stir with their »speech prosthesis«. German researchers have also been exploring the foundations for a direct connection between the brain and computers for years. Among them is Michael Lippert, who leads the Neuro-Optics team at the Leibniz Institute for Neurobiology in Magdeburg. He has spent many years exploring how technology can replace missing senses of sight, hearing and touch. »Our aim is to be able to transmit information directly into the brain«, explains Lippert.

Micro-LEDs light the way

Lippert explains the complexity of the challenge using vision as an example, »The visual information received by the eye and transmitted through the optic nerve to the brain is not evenly distributed across the part of the cerebral cortex responsible for vision.« Instead, it targets specific cells that can be identified through genetic markers. According to Lippert, »When we make these cells light-sensitive using optogenetics, they receive the information that would normally come as electrical impulses in the form of light pulses.« To this end, Lippert's team uses micro-LEDs mounted on a flexible film to project an image onto the brain, where the light-sensitive cells pick up the patterns and process the transmitted information into brightness, colour or contrast.

3D projections communicate complex information

Micro-LEDs are roughly one thousandth of the size of the LEDs found in computer screens or TVs. Neuroscientist Lippert is convinced that, »Micro-LEDs that project 3D patterns and separate light waves, allowing different cells to respond to varying wavelengths, can transmit highly complex information.« Nevertheless, »Based on what we know today, any direct information transfer into the brain still necessitates invasive methods, so it is not the type of technology that should be used simply to access the internet without a phone.« Instead, the focus is very much on lessening the impact of having any missing or damaged sensory organs.

Unconscious thoughts: the new way to control machines

Cottbus-based start-up Zander Labs is currently pursuing a non-invasive BCI approach, working with what is known as a passive brain-computer interface (pBCI) as part of

Professor Thorsten Zander
BTU Cottbus

the »Neuroadaptivity for Autonomous Systems« (NAFAS) project funded by the German Cyber Agency. »We use electroencephalography, or EEG, to interpret information from the brain«, explains Professor Thorsten Zander, Lichtenberg Chair at Brandenburg University of Technology in Cottbus. What sets Zander's approach apart is that, **»We are particularly interested in the unconscious fluctuations in brain activity. When we transmit feelings like joy, surprise or stress to machines, they can react before the person themselves even becomes aware of the emotion.«** One potential application might be to allow autopilot to take over in a vehicle if the pBCI registers heightened stress levels in the driver. Used in a production line, robots could automatically regulate their speed based on the cognitive performance of nearby workers to reduce errors and collisions. This would all be made possible by a special chip, which, in combination with AI-based software, can process the received signals and initiate appropriate responses from the machine being used. The use of pBCI could also improve the automatic correction of operational errors with various machines. »People often intuitively know when something is not quite right, so we can leverage this ability to enhance the interaction between humans and machines«, notes Zander.
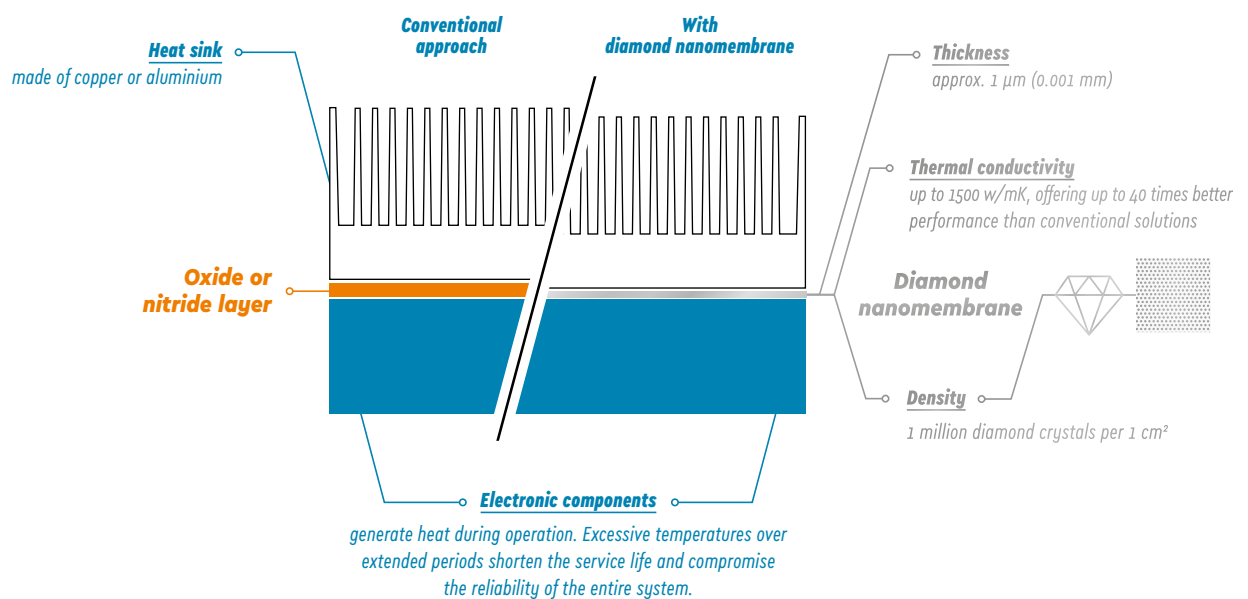
Safety at the forefront

Hardware represents one of the major hurdles in bringing pBCI solutions to market. While EEG helmets have certainly become comfortable over time, they are still not practical for everyday use. »We are currently exploring options including frames with just a few contact points behind the ears«, reveals Zander. In terms of software, the main goal is to speed up system calibration, as it still takes at least 30 minutes to adjust the system for each user. **»And it goes without saying that safety is major priority of our project. We want people to have the ability to decide for themselves when and what activities are recorded«,** stresses Zander.

TEXT *Rüdiger Voßberg*

Brilliant electronics

Diamonds as a cooling agent

Heat sink
made of copper or aluminium

Conventional approach

With diamond nanomembrane

Oxide or nitride layer

Thickness
approx. 1 µm (0.001 mm)

Thermal conductivity
up to 1500 w/mK, offering up to 40 times better performance than conventional solutions

Diamond nanomembrane

Density
1 million diamond crystals per 1 cm²

Electronic components
generate heat during operation. Excessive temperatures over extended periods shorten the service life and compromise the reliability of the entire system.

Fraunhofer USA has created a nanomembrane made of synthetic diamond for cooling electronic components. This innovative layer can enhance the performance and service life of electric motors while reducing battery charging times.
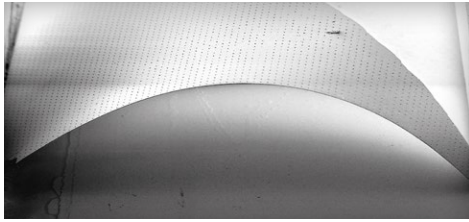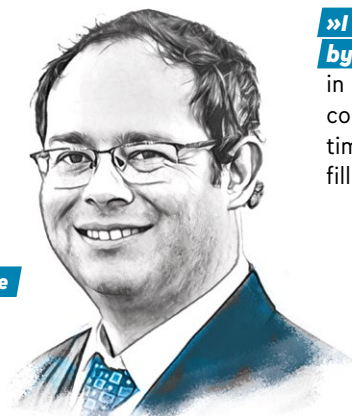
Flexible polycrystalline diamond nanomembrane captured with a scanning electron microscope (77x zoom)

Diamond is renowned for its unparalleled thermal conductivity. Unlike metals, which rely on conduction electrons to transfer heat, these gemstones conduct heat through vibrations in the lattice structure. This makes diamonds the ideal material for cooling electronic components with high power densities, such as those used in processors, semiconductor lasers or electric vehicles.
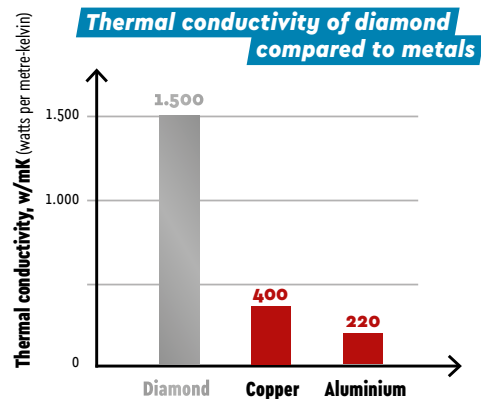
Cooling compress

The Fraunhofer diamond membrane is designed to act as a bridge between the heated electronics and the cooling plates of a component. Up until now, this bridge has been provided by electrically insulating oxide or nitride layers, but their poor conductivity limits their overall efficiency. »What we are proposing is to replace this intermediate layer with our diamond nanomembrane, which offers 40 times better conductivity«, explains Dr Matthias Mühle, Group Manager of Diamond Technologies at Fraunhofer USA Center Midwest CMW in Michigan, an independent international subsidiary of the Group.

Despite diamond being one of the hardest materials in existence, the membranes are surprisingly flexible. »We've compressed them and were easily able to bend them by ten degrees without the membranes breaking«, clarifies Mühle. Composed entirely of diamond, it is approximately one micrometre thick and has a density of up to 10,000 crystals per square millimetre.

Physicist Dr Matthias Mühle

Group Manager of Diamond Technologies Fraunhofer USA Center Midwest CMW

Thermal conductivity of diamond compared to metals

Thermal conductivity, w/mK (watts per metre-kelvin)

Diamond	1.500
Copper	400
Aluminium	220

Diamonds cling like a gecko

Mühle and his team grow the polycrystalline diamond nanomembrane (PCD) on a sheet of silicon wafer using chemical vapour deposition before peeling it off, flipping it over, and etching away at the back of the diamond layer. This technique results in a stand-alone diamond that can be heated to 80 degrees Celsius and subsequently applied to the component.

The physical phenomenon of Van der Waals forces – the attraction that arises from spontaneous polarisation of atoms – allows the thin diamond membrane to adhere directly to surfaces, similar to geckos, which developed this ability millions of years ago.

The researchers' long-term goal is to develop the entire cooling system for electronic components using only diamond, eliminating the need for copper plates altogether. For this to happen, however, a suitable method for growing thicker diamonds over larger areas still needs to be developed. The Fraunhofer team sees significant potential for the nanomembrane in areas such as high-performance electronics, industrial lasers, communication networks and data centres.

»I believe that this technology will be widely used by the end of the decade«, predicts Mühle. With this in mind, it's not unreasonable to assume that the new cooling system could slash supercharger charging times to just four minutes – less time than it takes to fill up a conventional car at a petrol station.

How companies strategise with foresight

TEXT *Alexander Freimark*

Corporate foresight allows companies to strategically prepare for various future scenarios. The aim here is not to meticulously plan every last detail of the development, but to outline options and identify risks. In doing so, companies are able to make more informed decisions and feel more prepared to handle whatever the future may bring.

Holger Glockner
CEO of Z_punkt

Corporate foresight is a shrewd early warning strategy designed to broaden horizons and tackle the age-old dilemma: »We don't know what the future holds, but we have to shape it into something we want. Strategic action relies heavily on a forward-thinking approach«, highlights Holger Glockner, Managing Partner at Cologne-based consulting company Z_punkt. Glockner helps organisations to sharpen their focus on the future, allowing them to identify opportunities and risks early on and gain a competitive edge in the market. After all, nobody wants to make the same mistake as Decca Records in 1962 – rejecting the Beatles because they believed electric guitar music had no future.

From vision to decision

Foresight relies on a blend of formal methods and processes to look into future scenarios. This includes analysing scenarios with various influencing factors, projecting existing trends into the future, interviewing industry experts, and conducting technology impact assessments on society, the environment and the economy.

But if one thing is clear, it's that corporate foresight doesn't provide any ready-made answers. As Glockner explains, »It's a process of growth and dialogue for companies that view themselves as ever-changing entities – as

learning organisations.« Today's focus is all about leveraging future insights to unlock economic potential from digital transformation and safeguarding against ecological crises to remain proactive and fit for the future. The real challenge lies in making sure that the relevant decisions are not only well prepared, but also then acted upon. After all, there is little point having foresight without the sound strategic judgement to go with it.

Foresight is a management issue

In this context, the outcome of foresight and the response to it largely depend on management, as long-term decisions need to be made based on the information and forecasts at hand. Much like in 2007 when Steve Jobs unveiled the first iPhone at Apple. The inclusion of the touchscreen was more than just a stroke of genius, it was driven by Apple's intention to combine a video iPod with a web browser and a new mobile phone. A traditional keypad with buttons just wasn't going to cut it any more.

The Mercedes Smart wasn't a direct outcome of foresight either; the company simply identified the trend towards smaller vehicles and then launched the Smart project. The research and development of innovations typically follow on from strategic forward planning. Corporate foresight is simply about increasing the chances of an organisation backing the right horse.

Keeping an eye on changes

Another example is Nokia's earlier transformation from a rubber boot maker to a leading player in the mobile phone market. This monumental decision didn't come about in isolation; it came in response to a particular set of circumstances. The company had already branched out from forestry and rubber production into cables and electronics. By the 1980s, demand for rubber boots had declined, whereas the need for mobile phones and electronics expertise was very much on the rise. On top of that, a government-backed initiative was launched to support the mobile phone industry in Finland, so it's no wonder that the management decided to refocus their priorities.

Nevertheless, Nokia also serves as a case in point for what can happen when leadership fails to adapt to change. In 2005, the company commanded roughly 50 per cent of the mobile phone market, and that's when it sold off its rubber boot business to a shoe manufacturer. Following its fall from grace after failing to make the switch to touchscreens, the mobile phone division was acquired by Microsoft in 2014. This just goes to show that it's not enough to spend a few weeks thinking about the year 2040 and then, if everything seems fine, simply return to business as usual. After all, »The rewards of foresight only come with consistent effort«, reflects Glockner.

Wild cards change the game

Corporate foresight has to keep challenging the illusion that the future can be accurately predicted, guessed or calculated. This is also influenced by wild cards – events nobody could have expected that completely change the game – such as the political shift in Eastern Europe, the 9/11 terrorist attacks in 2001 and the outbreak of the coronavirus in 2020.

In a bid to look more closely at how to deal with this type of incident, Evonik Foresight has developed nearly 100 wild cards that describe low-probability, high-impact events. These include technologies for »brain uploads«, an outbreak of plastic-eating bacteria, and the rise of AI-driven companies. According to Evonik, wild cards promote creativity and thinking outside of the box, which supports the development of organisational resilience.

**To learn more about wild cards, visit:**
www.creavis.com/en/ foresight/wildcards

All of a sudden...

There are plenty of examples where, foresight or not, companies have been caught off guard. And they've ultimately paid the price:

- *Nokia* (keypad phones) was flying until it underestimated the touchscreen potential of mobile phones and lost the market to Apple.
- *Blackberry* was another phone company famous for its many buttons that was swept away by Apple's success.
- Film studio *20th Century Fox* gave George Lucas the merchandising rights for »Star Wars«, which is now a billion-dollar goldmine.
- *Coke* developed an expensive follow-up to Coca Cola, but it was pulled from the market after just 90 days.
- *Kodak* decided not to pursue digital photography, despite having its own patents.
- *Die Deutsche Post/DHL* bought the company StreetScooter to develop its own line of electric vehicles. Despite finding a buyer after eight years, the company is now insolvent.
- *Microsofts* CEOs Steve Ballmer and Satya Nadella have both expressed regret in hindsight over the company's exit from the smartphone OS market.

How to encourage proper use of software

TEXT *Alexander Freimark*

The complex nature of corporate software means it is often used incorrectly – or else not used at all. This is where specialised digital adoption platforms can offer invaluable help, by reviewing usage, supporting people with digital processes, and identifying opportunities to save on tools or licenses. And as we all know, the pressure to cut costs is becoming stronger than ever.

Companies worldwide are sitting on an incredible asset in the form of licences for corporate software. Unlike classic artworks and fine wines, however, software doesn't appreciate in value when left unused. The key here is to actually use the programs, since expenses for software, infrastructure, and support continue to accumulate long after the initial investment. According to a survey by Capgemini and HP from a few years ago, large corporations sometimes run more than 10,000 different applications.

Unused resources: a huge financial burden
The problem, according to a study by Nexthink, is that half of all paid licences go unused. Assuming monthly licence fees of ten to 100 euros per user, 1,000 non-users can cost between 120,000 and 1.2 million euros per year for just a single application, and that's even before factoring in development, implementation, infrastructure, admin and support costs. According to McKinsey, the digital potential is far from being fully exploited: German companies could see a productivity increase of up to 20 per cent

if they utilised software, whereas failing to do so could cost the German economy up to 250 billion euros per year.

»This might have been overlooked during more prosperous economic times, but now every expenditure is under real scrutiny«, explains Benjamin Birk, Chief Revenue Officer at Munich-based IT company AppNavi. The firm is among those offering what are known as digital adoption platforms (DAPs), aimed at measuring and improving the use of business software. It's a market that's currently thriving, with AppNavi joined by a number of other providers including Userlane, Whatfix and WalkMe. The tools provide users with step-by-step guidance through finance, marketing and HR processes. The goal is to support users directly within the business application, enabling them to navigate their workflows more quickly and make full use of the software.

This technical support is delivered via the browser, which is the platform used for most business applications, explains Birk. »We are able to integrate a code snippet directly into the blueprint of the HTML page so that our tool appears right alongside the software.« An alternative to direct integration is a browser extension, which is becoming an increasingly popular solution. »The great thing about this option«, enthuses Birk, »is that a company's IT department can simply add new corporate software into the standard browser.« The result is an interactive layer of support that bridges the gap between applications and users.

Digital process guide

DAP tools are able to gauge the process context to identify what users are currently working on. As and when required, they offer not only tips, but also the next step or the best way to navigate folder structures, much like a car's head-up display. When requesting an international business trip, for example, a window will pop up with the relevant rules and regulations for that country. In another scenario, the latest legal requirements for accounting might appear. This way, any potential issues can be addressed as soon as they arise. »DAPs focus on applications with many users that are rarely used, such as travel expense reports, or programs that are regularly updated with functional updates or new click paths«, explains Birk.

Streamlining training

One of the major advantages of DAPs is that they significantly reduce the need for software training. This kind of training is time-consuming, expensive, theoretical and not tailored to individual users, and content is quickly forgotten due to lack of practice. DAP tools also cut down on the need for hyper care and support, while also lowering error rates and processing times. Another bonus is that they are not limited to internal processes; in fact, they can assist with any digital workflow that takes place within the browser. This ranges from 'customer journeys' in e-commerce through to the candidate experience, where applicants are required to upload their data and documents to a portal. Extra support in this area can help to reduce the high abandonment rate.

Sharper software performance

DAPs also offer benefits for IT departments. Another browser extension tracks application usage, even through VPNs and streamed desktops, and sends this anonymised information directly to IT teams to help tackle software sprawl. »Results appear as heat-map behaviour patterns rather than individual data«, notes Birk. Key areas of focus here include countries, departments, roles and forms. »Understanding that a CRM tool is being used differently than intended allows management to focus on targeted optimisation projects.« These insights allow organisations to benefit from a data-driven feedback loop for software efficiency rather than relying on guesswork. »That in itself saves money right from the start«, announces Birk.

Why is software not used?

Most people aren't keen on change – especially when it comes to software. What starts with a minor update can soon become entirely new user interfaces and overhauled processes, sometimes even requiring programs from completely different suppliers. Unsurprisingly, this results in acceptance issues for many reasons:

- Employees are not included in the selection and implementation stages
- The solution doesn't live up to expectations
- The user training was either too complicated or outdated
- Creating routines takes time and consistency
- Lack of people around to help when needed
- Users are blocked by the fear of losing power and control
- The change adds no value for the user (usability)
- The tool itself doesn't offer any benefit to the user (process)
- The program does not meet the requirements of the department (function)
- Middle management doesn't understand or use the tool either
- There are too many bugs in the program/subsystems
- There are better alternatives available, whether internally or externally
- The data is not properly managed (in other systems)

In summary: A software isn't used because it isn't used, and it's a major challenge to break this cycle once it's been established.

> »Understanding that a CRM tool is being used differently than intended allows management to focus on targeted optimisation projects.«

Benjamin Birk
Chief Revenue Officer at AppNavi