

marwick

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Taming cryptocurrencies



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Fintechnical



The finance sector will be different in ten years. We do not know specifically what it will look like, but we can describe the root causes of change with reasonable accuracy. The first one is the effect of geopolitical decisions, particularly Brexit. The possibility of a “hard” exit of the UK from the EU is still alive. I dare say that, however, even in the case of a hard Brexit, London will remain the most important financial centre in Europe, despite a growth in the influence of other cities. The second cause of change are political decisions and related regulation, which impact banks and insurance companies with growing intensity. Financial institutions will be able to cope with regulation, although it will be costly. Advanced IT tools will play an important role. Today, the talk is not only of fintech and insurtech, but also of regtech (regulation technology). Up next is reptech, which has nothing to do with reptiles, – “rep” here means reports. That brings us to the third cause of change: technological advancements. Next to intelligent automation, or – if you

will – artificial intelligence, these mainly include blockchain and the possibilities it offers. This is by far not just about cryptocurrencies, the benefit of which is, according to my opinion, slightly overestimated. Central banks and regulators have different approaches to cryptocurrencies: from benevolence to bans. By the way, Yves Mersch, member of ECB’s executive board, always speaks of cryptocurrencies as “cryptotokens”, as they do not possess the fundamental characteristic of money. There is also biometric authentication. We have invited professor Martin Draňanský from the Brno University of Technology to speak of its benefits and risks in this issue of Marwick. His lecture at KPMG Finance Forum highlighted the fact that in the future, the banking sector will rely on technologies even more than today. Banks already have a key role in the functioning of society, similarly to organisations providing basic infrastructure, and this role of theirs will be increasingly prominent as we move ahead.

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digitalization

Controlling cryptocurrencies

Cryptocurrencies and the token economy are now definitely on the radar of political leaders and traditional financial world regulators. Their ever growing momentum is a cause for curiosity, wonder as well as concern. Crypto-assets are currently mostly traded on unregulated markets with different liquidities, where manipulation techniques best even those used in the 1970's with penny stocks. Calls for more regulation now increasingly come not only from developing countries and small economies, but also from the developed western world.

The idea to regulate cryptocurrencies is nothing new and returns periodically, although no concrete steps have yet been taken. The European Central Bank has kept an eye on bitcoin and related cryptocurrencies since 2014. However, in the last few months, the pressure to regulate the market has been mounting. A recent meeting of the G20 finance ministers and central bank governors has shown that in the eyes of the financial world, cryptocurrencies are not indeed currencies and that the G20 intends to push its view that they are digital assets. That would, among other things, pave the way to taxing capital gains from trading in them. Similar opinions were already voiced by Yves Mersch from the ECB's Executive Board at the 2018 KPMG Finance Forum. The G20 also hopes to create and implement a single international regulatory framework for cryptocurrencies before the whole sector gets completely out of governments' hands. According to Federico Sturzenegger, the Chairman of the Central Bank of Argentina, the first proposal for a joint action is to be presented by

the summer.

But the G20 is not alone in its regulatory efforts: for a number of months, Japan, France, Germany and the US have been taking baby steps towards regulating cryptocurrencies, worried by illegal activities and risks posed for inexperienced investors. ECB's Yves Mersch has gone as far as to suggest that cryptocurrencies could in the future threaten the stability of our financial system: "There are banks which already hold positions in bitcoins and some financial market infrastructure entities, such as stock exchanges, are entering the field. That is a big threat to financial stability." While Mark Carney, the Governor of the Bank of England and the Chair of the G20 Financial Stability Board, does not yet share this view (believing that with their current capitalisation, crypto-assets do not seriously threaten financial stability), many others agree. The French politician and Managing Director of the International Monetary Fund, Christine Lagarde, for example, also calls for tighter regulation, concerned about the use of cryptocurrencies for funding illegal activities.

But some take a completely opposing view, highlighting that hand in hand with regulation comes responsibility. “No. Strict regulation or banning cryptocurrencies altogether is not the way to go. First, regulating a decentralised system poses a number of practical problems (remember how there were similar calls to regulate the Internet at the beginning, which is also decentralised); and secondly, when the authorities start to regulate, it implies they offer certain guarantees as well, and that is something I would definitely think twice about,” Mojmír Hampl, the Vice-governor of the Czech National Bank, told Marwick.

Regulation is also tricky because it often creates unreasonable obstacles to technological development. Take, for example, the beginning of motoring. The UK imposed such tight regulations on operating early cars that it became almost impracticable. For example, each car had to be preceded by a runner who waved a red flag and sounded a bell or whistled to announce that a car was slowly approaching. Operating a car legally required not only a driver but also a mechanic. The most notable result for the UK was losing its important technological lead in the field. “Regulation unnecessarily hampers technological development, which can potentially bring the greatest benefit to the poorest regions and communities. For the poor, unlike the rich, having access to a distributed solution operating in a decentralised, and therefore incorruptible, way across borders is vital and can mean the difference between life and death. For their sakes we should tread very carefully when regulating new technologies,” says Dominik Stroukal, the chief economist at Roklen Fin, who also wrote the first Czech book on bitcoin.

WHY IS REGULATING CRYPTOCURRENCIES TRICKIER THAN IT SEEMS?

If cryptocurrencies are not legally speaking currencies, can we, in all consciences, consider them assets? At first, it seems a logical and systemic solution. But most assets do not change hands as often and in such small quantities as cryptocurrencies, which would cause practical problems with collecting relevant taxes. In reality, cryptocurrencies and other digital tokens are not only traded but also used as mediums of exchange and transaction. As such, they circulate so quickly that it would be practically impossible to properly enforce rules for capital gains and losses. And even if they were properly enforced, the authorities would be flooded with such quantities of data to render them completely ineffective. The American IRS made this mistake in 2014, when it classified cryptocurrencies for tax purposes as assets subject to a short- and long-term capital gains tax (same as collector coins). Consequently, everybody paying with cryptocurrencies, even for just a cup of coffee, had to calculate the profit or loss resulting from the transaction compared to the original purchase price of their cryptocurrency. Compliance was, therefore, virtually impossible and the IRS had to introduce a minimum transaction threshold. This solution is, however, still far from ideal. Cryptocurrencies constitute a complex system which manages to maintain its delicate balance. That makes it difficult to predict with certainty what an insensitive interference, such as regulation, might do. Michael Lewis has put it nicely in his book about the practices of high-frequency traders, *Flash Boys*, saying that “every

Currency?

Money?

Asset?

Property?

Token?

Commodity?

Legal tender?

systemic [financial] market injustice arose from some loophole in a regulation created to correct some prior injustice”.

Classifying digital tokens as currencies (in the way we understand them today, i.e., elastic currencies) would, however, be equally problematic. There is no on-demand liquidity with cryptocurrencies and their emission is tightly governed by computer codes. This has many economic implications, including high volatility, fluctuations in liquidity and easy ways to manipulate prices that we see currently. “They do not have any of the characteristics we associate with currencies: they aren’t a store of value, a unit of account or to a large degree a medium of exchange. To me they are rather crypto-commodities or special types of crypto-assets,” comments Mojmír Hampl. Besides, governments usually define currencies as legal tenders of their own or a foreign state. This prevents other means of payment to be legally recognized as currencies. There is a very good reason for that, as making exceptions would open a Pandora’s box: if bitcoin was an exception, why not frequent-flyer miles?

IS REGULATING CRYPTOCURRENCIES EVEN TECHNICALLY POSSIBLE?

One of the key features of bitcoin and subsequent cryptocurrencies is that they resist censorship and prevent the exclusion of any party from transactions. Technically, this is achieved by using blockchains, which are public and decentralised. If bitcoins were banned by a country, local cryptocurrency businesses would simply move elsewhere, without the network itself being in any way affected. The same goes for imposing strict regulations. Consider the example of New York BitLicense. It imposed a set of demanding regulations as well as the obligation to have a license worth USD 100,000 for engaging in cryptocurrency business activities. The moment it became effective on 8 August 2015, ten local bitcoin start-ups suspended all their business activities in New York and moved to neighbouring states. The event went down in history as the “Great Bitcoin Exodus”. Today, the same happens on a global scale: large bitcoin exchanges reside in tax and cryptocurrency havens and big cryptocurrency business is leaving China. As long as there are countries that do not wish to control cryptocurrencies, any regulatory effort is likely to fail. Attitudes to cryptocurrencies and digital tokens meanwhile differ even within a single country: the US Securities and Exchange Commission classifies cryptocurrencies and their derivatives as securities subject to regulation, the state of Wyoming explicitly states that cryptocurrencies are not securities and the Commodity Futures Trading Commission treats them as commodities.

No help

No protection

No harm

No hand holding

Czech National Bank's approach to cryptocurrencies

REGULATION STILL UNLIKELY TO BE AVOIDED

Cryptocurrencies have chosen to exist in a tightly regulated arena of the financial system and are unlikely to survive there without a scratch. Ultimately, it might be better to have some regulation sooner rather than later. The legal twilight zone between the traditional financial system and the cryptocurrency economy creates uncertainty, motivates draconian preventive measures and causes concern, which is, in the long run, unsustainable and harms everybody involved. As long as cryptocurrencies remain a popular topic of public debate, we can also expect new attempts to regulate them. Reasonable and clear regulation could benefit all stakeholders, from banks to related businesses to cryptocurrency users. The question now remains if governments will try to hobble the dynamically developing field or use it. Dominik Stroukal, for example, leans towards the latter: "The biggest interventions are yet to come. Cryptocurrencies could be subject to value added tax, tax on high capital gains, you name it. Governments should have banned cryptocurrencies a long time ago, if they'd wanted to. Now, it's much easier and beneficial for them to tax them." In reality, cryptocurrencies are already regulated to some necessary extent. The exchange of cryptocurrencies for officially recognized currencies is governed by the existing legislation which, for example, requires stock exchanges and exchange offices to comply with KYC/AML rules.

ISN'T IT IRONIC?

Like the Internet, cryptocurrencies create a global decentralised network which is accessible to anyone and operates independently of any official authority across state borders. As a result, the only parts that can be effectively controlled are its "peripheries" - in the case of cryptocurrencies, the points of conversion with officially recognized currencies. Exchange offices and stock exchanges already receive strict supervision, which is now also being expanded to commercial banks. There is probably nothing wrong with supervising centralised exchanges. They store private keys (which prove the ownership of cryptocurrencies) for hundreds of thousands of tokens, which makes it more than justified. With banks, it is, however, less clear-cut. Understandably, banks as extremely regulated institutions want to keep away from such assets, at least until there is a clear set of rules. But it is rather ironic that influential banks now preventively block transactions with cryptocurrency exchanges and disable purchases of digital tokens with their payment cards citing their KYC/AML policies just as they do with illegal gambling, when the point of creating bitcoin and other cryptocurrencies was specifically to prevent such practices of excluding unwanted parties from transactions.

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Alternative uses of blockchains

Blockchains are most often described as distributed databases, which store all the logged entries for eternity. An even better way to depict them is to compare them to endless ledgers. However, both of these analogies fail to capture what makes blockchains so special. The technology behind blockchains is actually far less revolutionary than it might seem from the buzz surrounding them. All the used technologies, the Internet, cryptography and transport protocols, have been known for decades (or much longer, in the case of cryptography). It is not the technology itself that is revolutionary, but the way it is used.

Blockchains are special databases, which are distributed and accessible to anyone, operate without a central administrator and require consensus for making entries. In a public blockchain, consensus is reached through a computationally demanding voting process carried out by users, who are rewarded for this activity by unique tokens (cryptocurrencies). Unlike data in traditional databases, data once recorded in a blockchain cannot be modified.

WHAT MAKES BLOCKCHAINS REVOLUTIONARY

By storing the complete transaction history, blockchains have enabled two important things. For the first time in the history of computer technology, they have enabled the existence of unique data (cryptocurrencies, in the case of most blockchains), and consequently solved the problem of double-spending. As digital data are generally easy to copy, before the invention of blockchains, there was a risk that a dishonest party would use the same digital asset more than once. The existence of a complete transaction history stored in a blockchain and accessible to anyone has rendered this virtually impossible.

By solving the problem of double-spending, blockchains have also enabled two parties who are distrustful of each other to carry out transactions in a secure way without an intermediary, such as a notary pub-

lic, a settlement bank or a database administrator. Eliminating the intermediary has also eliminated the central most vulnerable point in the system, which merited most hacking efforts. Transactions carried out by blockchains without a central authority are also beyond the reach of censorship. As a result, blockchain users do not run the risk of ending up in a similar situation the traditional financial world saw in 2010, when Visa, MasterCard and PayPal started blocking donations to WikiLeaks. Compared to traditional databases run on designated servers, blockchains also have a number of other advantages: they are, for example, never down for system maintenance or because of a power failure.

THE MANY USES OF BLOCKCHAINS

However, it is not all roses with blockchains either. Their operation is, for instance, much slower and costlier, which only makes it sensible when there is a reason to distrust the central authority. Despite this, their possible uses extend far beyond the financial system, which tends to be the most cited example. Their principle of decentralised consensus can help build more robust systems whenever ownership is concerned or attestations required. “The future of blockchains lies primarily in highly automated control of hierarchical processes. Just as robots will replace workers, blockchains can effectively replace clerks. Bitcoin is not a currency, technically it’s a control signal, for example, for a vending machine to draw you a beer. The “transaction” (payment) and the action of “drawing a beer” are both carried out as part of a single indivisible cycle. Any manufacturing or business process or a set of processes can be expressed this way. This hierarchical principle is already used today in hierarchical deterministic hardware cryptocurrency wallets. Theoretically, you could apply the same technology to existing company management processes and all the managers could go into early retirement,” says the blockchain expert and mechatronic designer Andrej Cabaj about the potential of

blockchains. This brings us to another interesting application of blockchains and cryptocurrencies - smart contracts. Any human-made contract that can be expressed as an algorithm can be administered by a blockchain, which automatically monitors if its terms are being met. If you were, for example, late with your car lease payment, it would bar you from starting your car until the payment was made. Apart from smart contracts and the administration of ownership rights, blockchains will also find use in supply chains, digital rights administration and real estate registers.

DECENTRALISATION AND SHARED SUPERVISION

The shared supervision of blockchain entries enables otherwise opposing parties to cooperate in a mutually satisfactory way. Open Music Initiative and Ujo Music are blockchain projects using this principle to simplify the enforcement of rights and the administration of compensations for music makers and rights holders. Blockchain solutions can also help defuse tensions and overcome power struggles, for example, when establishing a branch consortium. The R3 bank consortium using the blockchain technology now includes 43 competing banks. With sufficient decentralisation and openness, blockchain networks can easily follow in the footsteps of the Internet and WWW, turning into new public services. There are numerous examples, including the new “Internet currency” bitcoin, the decentralised world supercomputer called Ethereum, and the decentralised InterPlanetary File System. Blockchains can also enable interoperability of otherwise disparate protocols. The Interledger Protocol, for example, supports payments from one blockchain to another as well as to external third party databases, such as bitcoin payments to SWIFT.

IMPOSSIBLE TO CHANGE OR FALSIFY

Entering data into a (public) blockchain is like setting them in stone; like a prehistoric dragonfly forever trapped in a piece of amber, they are preserved practically forever. As a result, blockchains can be very useful, for example, for keeping real estate registers (existing projects include BenBen, Bitfury, Velox.re, etc.), because they prevent fraud (such as illegal handling of real estate and embezzlement of financial deposits by having payments included directly in a smart contract) and reduce the cost of logging entries and maintaining the register. Blockchains can be used for storing academic diplomas, which makes them permanent and easy to verify (there is simply no chance of losing them and needing new certified copies). Blockchains can also help streamline financial audits, authenticity certification, sharing copyrights to works of art (like the Ascribe project) and tracing the origins of retail goods. A platform called Provenance, for example, enables you to trace the origin of foodstuffs and their ingredients. The invention of blockchains has also given rise to promising new fields, such as decentralised forecasting. Blockchain-based solutions enable the publication of forecasts and the rewarding of their authors (as well as those who bet on them) without censorship. There is, for example, an open-source decentralised prediction market called Augur, which uses Ethereum blockchain smart contracts. However, decentralised prediction markets also cause a number of ethical concerns. Blockchains’ permanence and resistance to falsification opens up new possibilities in managing assets, offering similar advantages as double-entry bookkeeping: better order and a lower risk of mistakes. In the energy sector, RWE and EEX use these properties of blockchains in their joint project Grid Singularity. The Brooklyn Microgrid is another interesting example of a blockchain system, which enables automated direct sale and purchase of energy generated by solar panels on residential buildings.

The most secure authentication is your retina

Be careful about photos on Facebook - your fingerprints are visible on them, warns professor Martin Drahanský, the biggest Czech expert in biometric authentication.



I admit it wasn't a very original kick-off question. Martin Drahanský has certainly heard it a hundred times, but I cannot help myself. Since we set up an appointment, it has been nagging at me. "How long would it take you to unlock my phone?" I ask impatiently. The 39-year-old scientist glances at my iPhone 8, which is lying on the table in front of us, locked with my fingerprint, and smiles contentedly. "An hour maximum. All it would take is the fingerprint you've left on the bottle of water you have just touched," he says, amused. The IT professor from the Faculty of Information Technology, Brno University of Technology has been focusing on biometry since 2000. His world consists of fingerprints, iris and retina scans and various 3D cameras with facial recognition. His research team of around ten people, which belongs to the best in Europe, if not beyond, is trying to convert everything you've seen in spy and sci-fi films into reality. By producing fake authentication keys, they contribute to the improvement of current technologies. Listening to Mr Drahanský takes one into a fascinating world that James Bond himself would find exciting, yet sometimes it all works surprisingly easy: to produce a fake fingerprint for unlocking my iPhone, ordinary modelling clay found in every toy shop would suffice.

Is it as simple as that?

Curiously enough, it is. We buy and use a lot of special materials, various dental materials that I don't want to speak of in great detail. Those work, but ordinary modelling clay also works with many devices including iPhones. It is not the greatest news, but I don't want to sound too pessimistic: if the fingerprint sensor has a good quality life detector embedded, clay fails.

A life detector?

Fingerprint scanning has two levels. The first one is the print itself, which can be falsified if you have a copy. When we started our research in 2005, all we needed was a regular stamp. We went to a stationary shop and had a fingerprint made. Nobody asked any questions. The shop made it and we were able to trick all the then available systems.

But today, there is a second level.

Yes, apart from the print itself, the scanners check to make sure the finger is a living one and not a fake. Your iPhone has a life detector; the question is how the detection is performed. We have succeeded in tricking almost all methods, the only hurdle is multispectral finger illumination. The finger is illuminated by different wavelengths, to establish the reaction of the skin, which is unique for each person. It is currently the most reliable method, which is why it is number one on our agenda right now.

How did you get into this field?

I had always been interested in fingerprints; maybe because I enjoyed watching murder mysteries. I studied in Brno at the Faculty of Electrical Engineering and Communication, where I started writing my master's thesis on fingerprints in 1999. I wasn't interested primarily in taking fingerprints. The thesis addressed the issue of transferring minutiae (various line forks in our fingerprints) onto a chip card. It was a big problem back then and I managed to solve it. In 2005, when I was finishing my PhD studies, we established a research group for the full-time study of biometrics.

What precisely does the group do?

We try to work on things that are not on the market yet. Briefly, we look for an answer to something that does not exist yet. Let me

give you an example. We work on damaged synthetic fingerprints. Synthetic fingerprints are generated by a computer, with changes embedded in them. When you need to test a device, you need tens of thousands of fingerprints. Obviously, you cannot hire that many people, so it is best to generate synthetic fingerprints. We try to make them as realistic as can be, so that they are useful for this kind of testing.

I was worried you were planning on robbing a bank.

No, we want to perfect existing security systems and come up with better ones. We are approached by companies wishing to test their solutions. They provide us with their technology, we deploy our fakes and verify what must be improved. In January, I went to a fair in Dubai with my colleague Ondřej Kanich. Many companies displayed their fingerprint scanners there, so I asked them whether they had a life detector and if we could test it. We took our fakes out of our pockets and used them with great success - apart from one technology, we tricked all of them.

That must make for great business, right?

So far, not really. We do the testing for companies for free and don't ask anything, because it doesn't take that much time. I always hope that it will open a door to cooperation on improving their systems, but it hasn't really worked so far. Producers tend to be secretive with their technologies and do not want to let anyone from the outside in on the secret. But we have been able to introduce our own products.

Which ones?

Our 3D face scanner has known commercial success, one company has been offering it on the market for some time. Right now, we are focusing on the retina, where we already have potential partners. No device for retina scanning actually exists as of today. There used to be one, but the producer went bankrupt, because it was expensive and uncomfortable. Users feared it would damage their eyesight - a successful scan required a small flash of light, which startled everybody. We are trying to come up with something usable.



We want to perfect existing security systems and come up with better ones



But eye scanners already exist, don't they?

Yes, but those scan the iris. Retina scanning can only be seen in films. Iris scanning is so omnipresent that it is used in biometric passports, where you have your face, your iris and your fingerprint. Iris is quite reliable, but it can still be faked relatively easily. All it takes is to photograph you with a long lens and focus on your eye. You can be sitting in a restaurant and you wouldn't even notice.

A photograph can do the job?

Yes, you can make a fake using a photograph. Obviously, it depends on how sophisticated the iris scanner is. When the scanning is done only under visible light, you just need to print the iris and make a contact lens with the same pattern. It is a different story if the device is smarter, using UV light, which the melanin in your iris reacts to, basically serving as a life detector for your eye. Retina scanning is safer because you can't just take a picture of it, or to be more precise, you can't photograph it without the person's knowledge.

And, unlike the iris, an artificial retina cannot be implanted in the eye.

Yes, you cannot surgically change it. When I was talking to doctors about it, they told me that it would theoretically be possible to do something with the venous bloodstream, but it is very improbable; no one has done it yet. The chance of your retina being damaged is high. That is why from the biometrical point

of view, retina is the best authentication method. The only disadvantage is that it is lengthy and impractical. Today, biometrics is all about "on the fly" checks, meaning you are walking through somewhere and while you are walking, they scan your face, your iris and your hand geometry as you wave your hand.

Hand geometry is also unique for each of us?

Yes and no. The basic 2D hand scan is suitable for a small group of people, but not for the entire planet. There are certainly people in the world whose 2D hand shape is similar to yours or the same. 3D scans, however, measure the curvature of all major grooves in your skin, and those are unique. And once you also include the papillary lines on your palm, it is statistically enough for the entire universe.

By the way, there really isn't anyone in the world whose fingerprints would be the same as mine?

According to theoretical models, no two people on the planet should have the same fingerprints. Obviously, no one has verified that in practice, so no one can guarantee it. But the probability is smaller than you being hit by a meteorite right now. It is different when we speak of selected minutiae. As I have said, minutiae are the forks and splits of papillary lines scanned by sensors. Two fingerprints may look completely different but have identical minutiae. Here the probability is higher, about as high as you being struck by lightning. But the probability of these two





Martin Drahanský

Mr Drahanský is a professor and expert in biometrics. He leads a research group at the Faculty of Information Technology at the Brno University of Technology. The research group focuses on fingerprints, fake fingerprint analysis and life detection. They have successfully implemented in practice a device for 3D facial scanning and an autonomous robot called RUDA, which can detect a living person behind a wall, in an avalanche or in rubble. The group currently concentrates on retina scanning.

people meeting in one place is zero. It is much more likely that someone will create a fake fingerprint.

Doesn't it make you paranoid, knowing how easy it is to trick fingerprint authentication?

I do have a certain level of paranoia; that is true. I use fingerprint authentication for things that I wouldn't care about being stolen from me. My phone only contains a few numbers, for example. But I certainly would not use fingerprint authentication for my banking app. It would have to be equipped with a life detector that I trust, say the one with multispectral features. If it was something else, I probably wouldn't use it.

One novelty is Apple's Face ID. What do you think about it?

Apple always wants to come up with something new, they want to be first on the market. It is unique, interesting and exciting for people who love iPhones. Nevertheless, you can have a 3D copy of your face made for a few dollars and use it to trick the technology.

I have tried it myself.

Exactly. Isn't it a dead-end? It is clearly easier to trick a facial recognition software than a fingerprint software.

Making a fake is easier, but it is more difficult to get to your face. There are apps which can do it. You run around a person, take a bunch of photos or a video and the app will turn it into a 3D model. You can do it with a good quality

phone. But it requires running around the person and that cannot be done without them knowing. Fingerprints can be taken secretly.

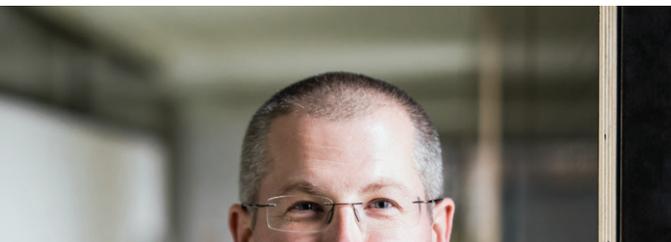
I can do it and you won't even notice.

Are you glad that thanks to improved mobile phone authentication, people are more interested in biometrics?

Definitely: Fingerprints are commonly used in phones, some companies use them to check staff attendance. Apple has started to use facial recognition, and iris scans for mobile phones are also on the table. Biometrics is more and more present in our lives. Which is why I feel sorry that we haven't been able to push through a project which aimed at increasing the Czechs' awareness of biometrics. The project would explain what the dangers of posting pictures on Facebook are in terms of revealing your biometric data.

Where do we make a mistake?

Today, mobile phones have such high resolution that if you take a picture of yourself waving a hand somewhere and then upload it online in full quality, your fingerprints are so visible that they can be abused. Not to mention your face. And your iris is visible there. Unfortunately, once this information is revealed, it is revealed forever. Biometrics is irrevocable. If you have the suspicion that cryptographic keys were leaked, you create new ones, problem solved. You cannot do this with biometric data. People should realize that.



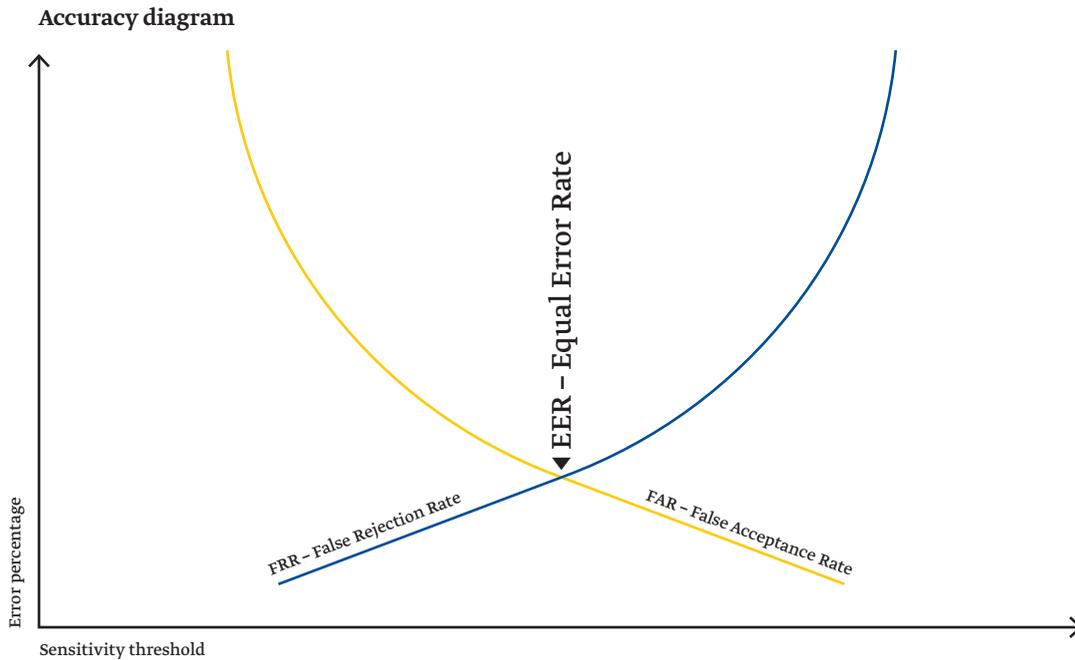
My voice – my passport

“My name is Werner Brandes. My voice is my passport. Verify me.” Biometric authentication is no longer known only from sci-fi films and high-tech complexes. Since at least 2013 and the advent of the first Apple Touch ID, locking our mobile phones with fingerprints has become a common part of our lives. More advanced methods use the eyes, the whole face or another very personal and unique physical trait: our voice.

Just last year, Apple, Samsung and many others introduced technologies for face recognition and iris scanning in mobile phones. Microsoft launched a similar concept called Windows Hello some time earlier. Voice biometrics is discussed much less, despite the fact that only in 2017, tens of millions of devices using this technology were sold in the US (Google Home, Amazon Echo). These devices can identify several different speakers when asked about an appointment marked in the calendar. There are more habitual uses of voice biometrics, however - for example in the call centres of financial institutions.

HOW VOICE BIOMETRICS WORKS

There are two basic modes of functioning: vocal passwords and free speech analysis. The first few sentences of this article, used in the film Sneakers (1992), are an example of a vocal password. Both in the film and in today's real world, all users can use the same password. Free speech analysis means the person's speech is continuously analysed. For example, as they are speaking to a hotline worker. This method can be more accurate (which also means it can be safer), but the analysis requires more time. The implementation of the whole solution may be more complex, because, among others, incoming and outgoing communications have to be separated. As with other biometric authentication methods, the success of voice authentication is closely tied to the learning process and, in general, with the set-up of the whole solution. The implementer is constantly negotiating between the user-friendliness of the solution, the qualities of the recording device, the environment and the reliability of the analysis. The solution must take into account background noise, changes in voice quality (e.g., due to a cold or old age), the sensitivity level of the recording device (directional vs. omnidirectional microphones), the frequency of authentication use, and a reasonable level of user-friendliness (a minute-long loud reading of a text will probably not be acceptable for the user).



ACCEPTABLE ERROR RATE

The aim of setting up a biometric solution is to get as close as possible to the point where the relationship between the false acceptance rate (FAR) and the false rejection rate (FRR) is balanced (EER). In practice, this relationship is very often influenced by the user-friendliness of the whole solution (usually, the solution is forcibly made less sensitive so as to accommodate the user and shorten the time required for their identification). Despite all of these factors, the common accuracy rate of commercial solutions is around 95%. Nevertheless, once the accuracy rate is set, the implementation process is far from over. The entire solution must be maintained at the pre-defined accuracy rate by regular re-learning, voice sample updates and applying fraud detection methods.

Commercial solutions are usually 95% accurate.

Markéta Hronová

The secret of digital Estonia

It's the first country in the world to introduce electronic voting. The Estonian government claims, with a bit of exaggeration, that only a wedding or a divorce require citizens' personal presence. What is life like in a country where almost everything can be done online?



The waiting line in front of the Tax Office is visible from afar, people are grumbling. "Why are there only two windows open?!" fumes a gentleman who's already been waiting for half an hour. This end-of-March situation occurs repeatedly every year with the Czech tax return deadline. The tax form can already be filled out online, but people without an electronic signature, and only 16% of individuals used it for tax filing last year, are still required to go to the Tax Office. The situation is different for those who possess a "data mailbox." They are, on the other hand, required to submit an electronic tax form or they risk a fine. The situation in Estonia is quite the opposite. 94% of inhabitants submit an electronic tax return and what's more, it's so simple that it only takes them a few minutes. "The tax return on the special tax web portal through which they sign up is already filled-in and they only add information in case it's missing. But it doesn't happen often, banks and authorities usually send data about earnings and other information in advance. It takes roughly two to three minutes," explains the Estonian Ambassador Sten Schwede. The Baltic state whose population is equal to Prague's is famous in Europe for providing all services online. The government states, with a bit of exaggeration, that a wedding and a divorce are the only events for which one must show up personally. Further 1,500 acts can be done remote-

ly. Every Estonian possesses a digital ID which they use daily as an insurance card, a driving license, for online banking and as a public transport pass. The system supports both the public and private spheres and electronic enablement also applies to voting.

MOBILE VOTING

The government claims that e-voting is totally risk-free and anonymity is guaranteed. "E-voting is safe. And our citizens believe it as confirmed by the increasing number of those who use a laptop or a mobile phone to cast their vote," explains Lia Hänni, the director of the Estonian E-Government Academy. Last October, almost 32% of Estonians used e-voting and 23% of them expressed their political preferences via a mobile phone which is double the number from the previous elections three years ago. With its elaborate digital technology education system, Estonia is making sure its digital world includes everyone. And quite successfully - 90% of inhabitants between 15 and 74 use a computer almost daily. Yet besides that, it also has to train IT specialists to take care of these sophisticated systems. "Estonia needs far more cyber security experts than other states," pointed out Jarno Limnell, professor of cyber security at Aalto University, Finland, at the Tallinn Digital Summit in autumn. But how come a small Nordic



country became the European leader in e-governance? In the 90s, young politicians wondered how to make themselves known to the rest of Europe and at the same time how to govern a state with low population density where people often have to travel dozens of kilometres to get to a government office. They put money on digitisation. The current situation is a result of more than twenty years of preparation. Estonians also adapted their laws to the fact that all data and services are digital. Know-how on how to go online with state administration is also their service export.

In 2007 Estonia experienced its biggest cyberattack. Security is also the reason why Estonia is constantly under fire from suspicious critics, even though there hasn't been any substantial data leak so far. According to the German newspaper *Frankfurter All-*

gemeine Zeitung, last year experts warned Estonia of a possible security breach and problems with its IDs. But the Estonian president ruled out any danger.

Estonians have a greater trust in politicians. Last year they celebrated fifteen years of living in an IT society. Citizens appreciate the possibility of using a computer to communicate with the state and avoid going to government offices to the envy of other Europeans who are obliged to wait and communicate with often unfriendly civil servants behind the counter.

The government claims that the system saves 800 years of both civil servants and citizens' working time. "We see it as an opportunity to look back and take stock of our achievements and failures," say Estonians who, similarly to the Czech Republic, are celebrating the one hundred year anniversary of its founding in 2018.

Digital Estonia

1997

E-GOVERNMENT

In 1997, Estonia started providing a digital form of public services. It was a strategic decision to increase the status of a state with a low number of inhabitants spread over a larger area.

2000

E-TAXES

Since 2000, Estonians can submit their tax returns online. The process requires a few clicks and takes five minutes at the most. Roughly 95% of inhabitants use this service every year.

2001

X-ROAD

In 2001, Estonians built a dedicated environment digitally interconnecting all government databases bringing citizens the benefit of information and service availability anytime, 24/7.

2001

DIGITAL D

Electronic IDs were also introduced one year after the beginning of the new millennium. They represent a link within the X-road digital environment allowing citizens to conduct banking or business transactions or sign documents.

2005

E-VOTING

In 2005, Estonians were the first citizens in history to be able to cast their votes over the internet. It can be done from anywhere so Estonians are not prevented from voting by the long journey that separates many of them from their polling station.

2008

E-HEALTH

Since 2008, everyone who possesses a digital ID can check the state of their health online. All doctor's appointments are recorded, physicians use the system to invite patients for a medical check-up and, naturally, for e-prescribing.

2016

E-RESIDENT

The new "e-resident" status was launched in 2016. It allows foreigners to remotely form and manage a company in Estonia. Over 27 thousand non-Estonians have already benefited from this service.



The Czechs are digital minimalists

Although surfing the Internet has become second nature, we are not among the European Internet champions. When compared by Internet connection usage, we are below average. In the Czech Republic, television is still the preferred family pet, while Internet usage remains moderate. Those are the results of a survey by KPMG Czech Republic entitled The Czech Digital Household, which looked at users' online habits.

Every day, we hear about technological advances, such as retina scanning, and millennials who won't drink a cup of coffee without posting it on Instagram. "Smart" and "intuitive" no longer applies only to extraordinary people, but also to televisions, cars and other household appliances. However, statistics show that the (Czech) reality is slightly different. Most Czechs have a restrained relationship with the Internet and new technologies.

Most Czechs are "minimalists" - users from non-urban areas (37%) who have lower incomes, are well acquainted with the parameters of their Internet connection and are happy with them. In their free time, they try to avoid the Internet, and do not use it very often for listening to music or downloading music and videos. They do not give digital devices to children to pacify them, and are not very active on social networks.

Modern smartphone apps allow us to go through a quick language course or sell things we no longer need, but the majority of time spent online is spent on much more mundane tasks. The most popular activity nationwide is searching for information, which 94% of respondents do several times a week, followed by e-mailing (88%) and reading the news (86%). The same proportion of web surfers use the Internet for education or sharing their creative work.

TELEVISION STILL GOING STRONG

Although the news and advertising make it seem like the Internet is changing all of the well-established rules of media consumption, it is not so. Television is still basking in the limelight of many users' attention. Eighty percent of users watch it several times a week; 44% have their own smart TV. However, paid TV services are used less than half as much as in Western Europe. Czech users are also nowhere near leaving classic TV channels for

their online alternatives. They are not extremely keen on paid content, be it music or video (Netflix, HBO GO, etc.). So far, only 29% of users have been using these services, as compared to approximately 50% in the US.

One thing confirmed by the survey is the near-universal availability of the Internet. Broadband (including the slowest 2 Mb/s) covers 99% of Czech households. Only 71% of them use it, which places the Czechs below the European average (74%). According to the Digital Economy and Society Index (DESI 2017), the Czech Republic ranks 22nd out of 28 EU countries when it comes to Internet usage.

Households' digital level does not depend only on technical conditions, but also on users' skills and other factors. "The benefits of digitalization for households or individuals are not reduced to the availability of Internet connection at home. They are a combination of the user's needs, their technical competence, the availability and compatibility of the devices they use, the availability and quality of service/speed and the price for connection," points out Ondřej Holěk, Senior Manager responsible for telecommunication services at KPMG Czech Republic.

FOR A BETTER PRICE

When buying an Internet connection, 37% of users make a decision based on price. Eighty percent of respondents said that money belonged to the most important parameters influencing their decision. Stability (30%) and speed (21%) were also significant. Once a Czech customer decides to switch providers, their final decision is by far not determined solely by price, but most often by connection parameters (33%). The situation is different for paid TV, where one in three users change the provider because of financial conditions.

The survey divides respondents into six segments defined by demographic parameters and user approach. After unifying the measuring criteria, we calculate each segment's index of digital maturity, which says how much they use Internet services, which devices they use, how they behave online and what their knowledge is.

MINIMALISTS 37%

DIGITAL MATURITY: 3.3 / 5

They live in rural areas and have lower incomes. They are happy with their Internet connection and its parameters and know them well. When socialising, they put mobile phones aside and do not give them to children to play with. They do not use social networks much.

EASY BREEZY 20%

DIGITAL MATURITY: 3.9 / 5

This group shops online and sends e-mails. They tend to have a poor knowledge of their connection, and most of the time are not happy with it. On the other hand, they have relatively good technical and practical skills. They usually come from smaller households, their average age is 44.

THRIFTY HEAD OF THE FAMILY 14%

DIGITAL MATURITY: 3 / 5

They live in the countryside and do not think they are getting good value for money. This group rarely shops online because of safety fears, but is more prone to pacifying children with connected devices. They do not spend much money on the Internet or TV, but they do spend more on landline telephone.

CLEVER FOXES 14%

DIGITAL MATURITY: 4.1 / 5

This group includes people with the highest income of all segments as well as the best knowledge of the technological aspects of their connection. They are happy with the quality of services they receive and have no problem spending a little extra on Internet connection. However, they do not want to spend money on content, despite the fact that they replace other services (TV, landline, etc.) with the Internet. They do not watch TV much. On the contrary, they are the most active on social networks. They work online, but spend less in online shops.

STAY CALM AND CONSERVATIVE 9%

DIGITAL MATURITY: 3.9 / 5

They do not spend their free time online. When they do, they usually read the news or listen to music. They are not too keen on social networks, but spend the most of all segments on both connection and content. They like certainty and a guaranteed satisfaction with the services. They come from larger households and show average satisfaction with telecom services.

SEASONED SURFERS 6%

DIGITAL MATURITY: 4.3 / 5

They spend the highest amount of time online, both at work and in private, playing games or downloading data. They have the best theoretical and practical digital competences. They tend to live in cities and often use several devices at once, which is why they also spend a lot of money on TV.

The remaining respondents belong to the category of "near-robots", who are strongly excited about or even engulfed by the digital world. There are 0.7% of them among our respondents; in the entire population, the number is probably smaller, which is why they do not have their own segment assigned to them.

Their theoretical and practical competences are highly superior. They are practically always online, and the amounts of data they download reach multiples of standard users' downloads.

The survey is based on the answers provided by 1000 respondents across the Czech Republic. You can download the entire study at www.kpmg.cz.

business

business

Štěpán Kačena, Head of Content Marketing,
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Don't act shiny

The name of the Sulko brand (the Czech acronym for Suchánek Libor Quality Windows) is derived from the founder's name. The cycling enthusiast Libor Suchánek is in a good mood. He starts off by saying he didn't have much time to prepare for the interview because the night before he had returned from a 85km long hiking trip from Bumbálka to Bystřice pod Hostýnem. When speaking (not only) of the trip, he bangs the table in excitement.





What windows do you have at home?

I established the company in 1993. Our house had already been built at that time and it had windows from a different supplier. Around 2000, our competitors started to use this against us: “Our windows are so good that even the owner of Sulko has them in his house.” I was able to tolerate this for maybe a month, then I had to knock them out and replace them with our windows.

What was your ambition when you founded the company in the 1990s?

It was a time when one was young and full of so much energy, but with little experience. I think people are divided between those who have a clear vision and structured thinking and those who have great power, energy, emotion and willpower to move forward. I was the second kind. I had a great appetite and this encouraged other people - new customers as well as coworkers were coming. We hit a limit there, of course, because it was necessary to adopt a structured approach to managing the company.

How did it come to you to start making windows?

It might as well have been potato chips or something else. I was an associate at a construction company, providing work in Germany. Back then in 1992, investment activity in Baden-Württemberg, where we were doing business, fell sharply. When we went there after the Christmas holidays in January 1993, they told us: “Pack your bags and go home,

we don’t need you.” I had to come up with something for the construction company, so I decided on window production, because the delivery period was three months then. The sales guy was so unpleasant that we said: “Rather than having to deal with him, let’s make it ourselves.” I paid a visit to a few people who introduced me to the hows and whys, and started making windows in an old cattle barn.

Have the company’s founding values changed in any way since then?

It follows the biological cycle: my level of energy is in decline, but I have three children who have enough of it. With my oldest son, we went through an unpleasant period when his energy set in. He has worked here from the age of 15, he was the head of marketing, the company radiated; then he was responsible for production. When I wanted to sell the company in 2008 for a huge amount of money, he said: “Don’t sell it, I want to do it.” So we were there alongside each other. He didn’t have experience, but he had great strength, there were two leaders, it was not easy. We suffered financial and personal loss. That’s how it goes in life. Now my son’s energy is in charge. He is the clear boss, the clear leader. I am one who helps. I give advice on request, but otherwise keep away from it.

Why did you want to sell the company ten years ago?

Because I felt it. Our turnover had reached a billion crowns and I knew that my mental



The sales guy was so unpleasant that we said: “Rather than having to deal with him, let’s make it ourselves.”

strength was ebbing. I thought it was the perfect time to sell. The first offer was enormous. My son was preparing the sale with me for a long time. Right before due diligence, people had their plane tickets bought already, he said: “No, I want to do it.”

How did you react?

My vision went black, I told my secretary: “Petra, buy me a ticket to Delhi, I have to think about this.” I hopped on the plane, woke up there in the morning and said to myself: what am I going to do here for the next 16 days? In the end it turned out great. I almost missed the plane back. It was full of experiences, including a meeting with the Dalai Lama and hiking in the Himalayas. I came back still not knowing what to do. My heart said: “Your son wants to do it,” and my brain said: “Sell it,” because a better chance won’t come. Eventually the heart won, I am like this. We lost a bunch of money, but we didn’t lose our relationships. Our family - we have three children, four grandchildren, the fifth is on the way - is tight-knit and we like to see each other. This is worth much more than a pile of money on your bank account.

What can standard companies learn from family businesses?

Values and objectives are what counts. A family business has a long-term aim: sustainable development in the region where the brand is located. A region generates a certain number of leaders and I believe they have the obligation to give back to the community. Those are

the important values for a family business. What is the biggest threat to the functioning of a family business?

Handing the business over is a risky moment; this is very evident in the Czech Republic these days. Both positive and negative examples are plentiful. In a family, if someone has a weakness, the family wants to help them. In a corporation, there is no place for weak people, the companies are results-driven. A family will help a weak person, look for excuses, find a place for them that they want. Emotions prevail over rationality. I think corporations have it different, although there are other risks.

What is it like to be an entrepreneur in the Czech Republic?

Good. The only issue is the constant change of business environment. It makes me sad to see political elites constantly changing the environment for business. Wooosh - suddenly there are subsidies, wooosh - no subsidies. All of a sudden, investment activity in the construction industry falls by 50%. We have been delivering windows to Switzerland since 1999. When you see the continuity, the long-term outlook, you think “wow, I would love to have that here”.

At one lecture, you said a company must be managed unequivocally. What do you mean by that?

A boss must be unchallenged, they must have clear authority. It is them who decides the way things are done. That is not common in a family, you have democracy there.

My vision went black, I told my secretary: “Petra, buy me a ticket to Delhi, I have to think about this.”

A company must have clear management. How do you manage to separate your roles in the family and in the company?

It is no longer a problem. I have no power position in the company. It used to be harder.

Did you use to take work home?

We had a room in the basement furnished as a den, which we used to talk shop. One floor above, where the family lived, we did not discuss work.

As your children were growing up, you were growing richer. How did you reconcile this with their upbringing?

I grew up with modest means and did not want us to change our lifestyles, to “act shiny”. I feel that inner humility is necessary throughout one’s lifetime. I made sure the kids learned languages. All three of them speak perfectly. When they were 16, I sent them abroad for a year. Petr went to New Jersey, Markéta went to Vienna and my youngest, David, went to France. We have the three principal cultures represented at home. It had a side effect, too - they went through their wildest adolescent year in a different family and learned a language on top of that.

Petr has been the head of the company for a year and a half. How did you choose the successor?

You have to decide one way or the other. The worst is to make no decision. Petr contributed to the brand’s development and the growth of the production plant. I decided that Petr would have the company and I would provide housing for the other two.

Are Petr’s siblings active in the company?

They aren’t. They used to be, but not anymore. I was considering giving Petr 52% and 24% to his siblings. But they said that they did not want it, that they wanted to maintain a good relationship with him, and if they had a share, it would cause trouble. I consider it

a very mature decision.

What do you do now in your life, actually?

I live in a village, I like having a garden. I had a fence put in place, there will be sheep in it. I trim trees and mow grass. That’s not enough for 365 days, though. I like hiking in the mountains and cycling. My wife and I, we take our backpacks and ride for ten days. Sometimes I give a lecture, I am a member of the supervisory board at another company. Recently, I have been asked to write a chapter for a textbook. I go to social events, where I contact future customers, I promote the company. That’s quite enough. I have never lived as well as I do now.

Is there something in your life that has remained unfulfilled?

There isn’t.

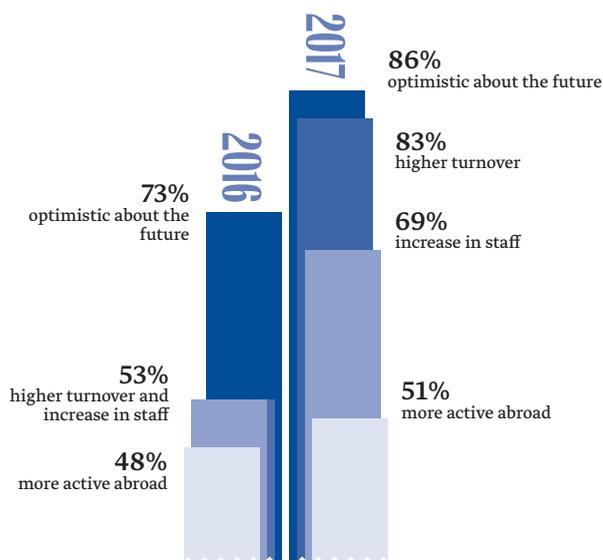
LIBOR SUCHÁNEK

The 60-year-old founder of the Sulko company from Zábřeh na Moravě has a degree in agricultural engineering. Today, Sulko belongs to the three largest Czech window producers. The company employs 270 people. In November 2016, Libor Suchánek handed it over to his oldest son Petr.

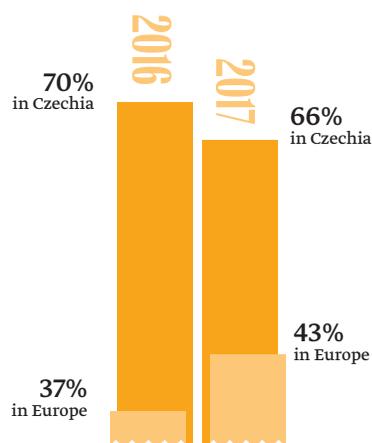


Let us grow

Czech family businesses prosper - simple as that. As compared to last year, four out of five companies have increased turnover, they are more active internationally and hire new people. The last point, however, is proving rather tricky.



CZECH FAMILY BUSINESS BAROMETER



SHORTAGE OF SKILLED WORKERS

Low unemployment in the Czech Republic complicates hiring (66% of companies in the survey see it as a problem), although the battle for skilled workers is raging elsewhere in Europe as well (43% of European companies feel it). To tackle this, family businesses should play their strong cards: high retention and lower probability of layoffs in difficult times. The European Family Business Barometer surveyed more

than 1100 companies in 26 countries. It focused on non-listed companies (94% of respondents), of which almost three in four are fully owned by the family. Czech family businesses differ slightly from the European average: they have been on the market for a shorter time and are more often owned by the first generation who started the business (66% of those surveyed as opposed to 40% in Europe).

The effects of the new rules on insurance distribution

We've probably all been through this. We've all been contacted by an insurance company employee or a "freelancer" offering an insurance policy review. Speaking in a seemingly incomprehensible language and submitting presumably trustworthy arguments, they are doing everything they can to make us terminate our current, supposedly disadvantageous, contracts and sign up for new ones. Yet in retrospect, we might find out that the intermediary might be the only one benefiting from the transaction (by getting a commission) and what they made us believe is not entirely true...

But it seems that after lengthy debates, a radical solution to this problem of the Czech insurance industry is finally on the horizon. The consideration of a government Bill on Insurance and Reinsurance Distribution is currently culminating in the Chamber of Deputies. The Bill considerably increases consumer protections and reinforces the trustworthiness of the whole insurance sector. It is based on the EU Insurance Distribution Directive (known as IDD) and replaces the current regulation comprised of the Act on Insurance Intermediaries and Loss Adjusters.

The Bill extends regulation applicability to all distribution channels, including direct insurance policy sales in insurance undertaking branches. Most of the concepts introduced by the Bill improve the consumer's position with respect to insurance policy distributors. The Bill's main emphasis is on comprehensible and comparable information on financial product offerings, increased requirements on insurance policy distributors' professionalism, more transparent intermedi-

ary networks as well as unified regulation principles across the financial market. Identically regulated concepts in consumer loans, the insurance industry and on the capital market are supposed to make supervision more efficient and reduce costs for persons doing business on the financial market. The main newly introduced concepts are the following:

1. NEW CATEGORIZATION OF INTERMEDIARIES

The Bill changes the definition of insurance intermediaries. It reduces the existing five main categories to two - a tied agent and an independent intermediary which will contain the current categories of insurance broker and insurance agent.

While insurance agents work and arrange insurance policies for an insurance undertaking from which they receive remuneration, insurance brokers conclude a contract with clients which defines provisions, including remuneration, for finding the right insurance policy. Conducting broker and agent activities simultaneously within one business transaction is not

allowed. All independent intermediaries, both natural persons and legal entities, must obtain the obligatory professional liability insurance with an insurance limit of at least EUR1.85 million per year for concurrent insured events and EUR1.25 million for one insured event. In case of a tied agent, it is the independent intermediary who is liable for possible damage and the insurance undertaking has a duty to compensate for damage only if it didn't select the independent intermediary carefully.

The Bill also introduces insurance intermediaries based in another EU member state, based on the freedom of establishment and the freedom to provide services on a temporary basis, and "ancillary insurance intermediaries" providing insurance policies only as a complementary service to the good or service provided. Unlike the tied agent, an ancillary insurance intermediary is entitled to conduct distribution for several represented entities. The represented entity is liable for possible damage caused by the ancillary insurance intermediary. The Bill does not apply to activities carried out by independent loss adjusters who are now regulated as a professional trade by the Trade Act.

2. CHANGES IN REGISTRATION

A license from the Czech National Bank (CNB) or a registration in the registry of intermediaries are still required for the practice of insurance distribution. However, the license to provide intermediary services is now limited to one year and is terminated in case of a failure to pay a "renewal" administrative fee. Multiple registrations are not allowed. Therefore, the CNB won't register an entity as a tied agent if it's already registered as an independent intermediary.

Furthermore, intermediaries must meet professional qualification requirements on a permanent basis. These are different for each professional group and demonstrated by a school-leaving certificate or a certificate on the completion of higher education, a successfully passed professional exam and the completion of a yearly 15 hour follow-up course provided by entities accredited by the CNB. The aim of the proposed changes is to increase the quality of insurance distribution and to change quantitatively ("to sort out") the network of intermediaries which today number at 175 thousand but most of them are probably no longer active.

3. NEW INSURANCE DISTRIBUTION RULES OF CONDUCT

Insurance undertakings and intermediaries are obliged to perform their activities with professional care. The Bill lays down vast information duties regarding the client and applying to the pre-contractual stage, and any insurance distribution must always include the distributor's obligation to duly analyze the client's requirements, objectives and needs. Furthermore, the Bill also embeds duties concerning advice provision, recording negotiations leading up to a conclusion, a substantial change or a termination of an insurance policy, duties concerning the complaint handling system and whistleblowing mechanisms or document keeping.

4. INCREASED SUPERVISION EFFICIENCY AND STRICTER SANCTIONS

A reduced number of supervised entities and an increased responsibility for the quality of their distribution network provide the CNB with better conditions for supervision efficiency. In terms of sanctions, the Bill reflects the main shortcomings of the law currently in force. These are primarily the impossibility to impose the two strictest penalties - i.e., registration cancellation and a pecuniary sanction for breaching the obligation to act with professional care without first imposing a corrective action, and the absence of elements of the infraction of performing insurance intermediary activities without registration. Following up on the IDD, the Bill also increases maximum fines.

The Bill is complemented by two European Commission Regulations from September 21st 2017, which are directly applicable in EU member states. The first Regulation no 2017/2358 introduces rules on insurance product oversight and their governance. What is especially relevant is the obligation of insurance undertakings to identify target markets and assess the suitability of insurance product offerings for individual customer target groups. The second Regulation no. 2017/2359 also focuses on protecting clients' best interests by regulating the issue of conflicts of interests to avoid insurance products being offered to clients solely on the basis of commission. Regulation no. 2017/2359 is applicable to the distribution of insurance-based investment products.

New rules should substantially limit the room for unfair commercial practices which are, particularly in life insurance, quite common. Increased responsibility of insurance distributors, the introduction of vast information duties and reduced intermediary motivation based solely on commission are definitely good news. But only practice will show the actual effect of the Law on clients, insurance companies and intermediaries.

re
vue

revue

European scene

Anna Batistová

The May Marwick Revue traditionally opens with an invitation to Prague Spring, the greatest classical music event in the Czech Republic. However, we also bring you tips for events abroad, including the Louvre's Delacroix exhibition, the Venice Architecture Biennial and the first summer music festivals, like the Spanish Primavera and the Danish Roskilde Festival.



PRAGUE SPRING

Prague, Czech Republic, 12 May - 3 June 2018

This year, Prague Spring marks the 100th anniversary of the founding of independent Czechoslovakia, featuring mostly music by world-renowned Czech and Slovak composers. The festival will traditionally open with Bedřich Smetana's My Country. The internationally acclaimed conductor, Tomáš Netopil, will conduct the Czech Philharmonic in his debut rendering of the piece.

DELACROIX

Paris, France, until 23 June 2018

The Louvre in Paris currently holds a large exhibition of Eugène Delacroix, one of France's all-time classics. The first retrospective since 1963 presents 180 works, including the most famous paintings, like Liberty Leading the People, Massacre at Chios and Women of Algiers in their Apartment.

VENICE ARCHITECTURE BIENNALE

Venice, Italy, 26 May - 25 November 2018

The topic of the 16th annual international architecture exhibition in Venice curated by the Irish architectural studio Grafton Architects is Freespace. The Czech pavilion is designed by artist Kateřina Šedá together with the Český Krumlov Egon Schiele Art Centrum.

250TH ANNIVERSARY OF ROYAL ACADEMY'S SUMMER EXHIBITIONS

London, Great Britain, 12 June - 19 August 2018

The British Royal Academy of Arts in London celebrates the 250th anniversary of Summer Exhibitions by presenting an artistic overview of their rich history. The retrospective will feature both current and historical British artists from Joshua Reynolds to Wolfgang Tillmans.

PRIMAVERA FESTIVAL

Barcelona, Spain, 30 May - 3 June 2018

Barcelona's Primavera is among the largest Spanish music festivals dedicated to independent music. This year, the line-up includes, for example, Arctic Monkeys, Nick Cave and The Bad Seeds and The National. After the week in Barcelona, Primavera moves to Porto.

ROSKILDE FESTIVAL

Roskilde, Denmark, 30 June - 7 July 2018

A staple of the European festival scene, the Roskilde Festival is also one of the largest on the continent. It has taken place south of the Danish city of Roskilde every single year since 1971 when it was first organized for hippies. This year, it will feature household names of the musical industry, like Eminem, Bruno Mars, Gorillaz and Nine Inch Nails, as well as promising new artists.

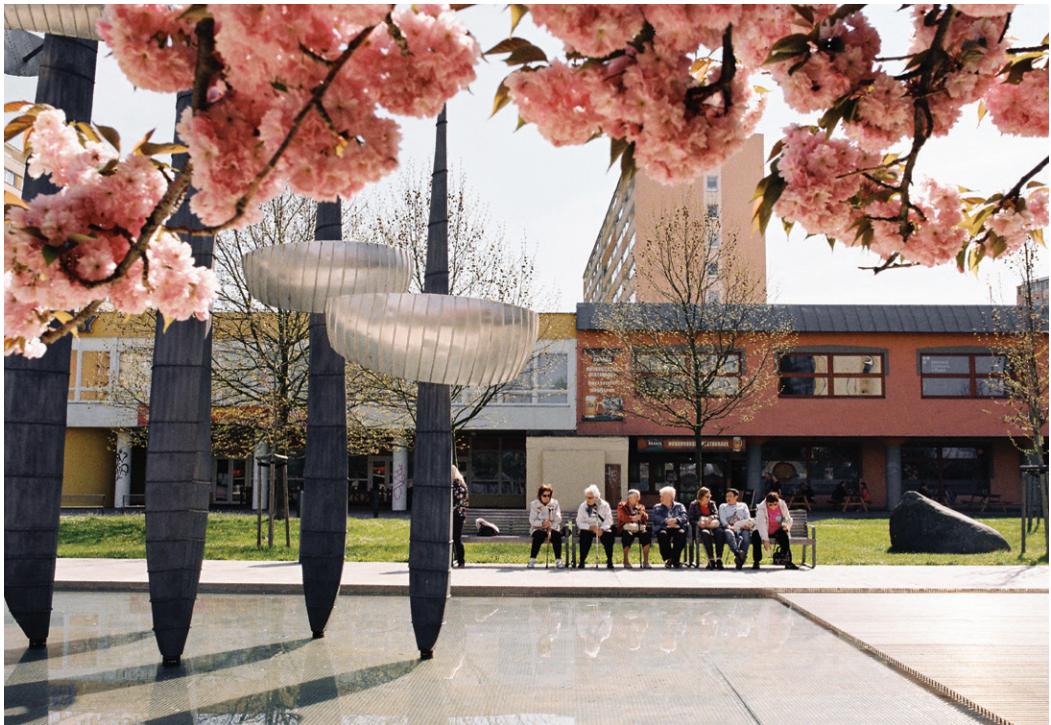
BERGEN INTERNATIONAL FESTIVAL

Bergen, Norway, 23 May - 6 June 2018

Bergen International Festival has more in common with Prague Spring than you might think. Both the festivals focus on classical music and take place simultaneously over a similar period. This year's festival in Bergen will open with the Grande Messe des morts (Requiem) by Hector Berlioz performed by the Bergen Philharmonic Orchestra.

When the time comes

We try not to think about it. We tend to deal with our loved ones' old age only when their need for help becomes urgent. Yet a managerial approach pays off, in this case. Moreover, retirement homes are not the only solution. There's a whole range of options.



She moved out of her parents' home when she went to Prague for college. This HR director, who wished to remain anonymous, never returned home to Slovakia and still lives in Prague. But in the meantime, her parents grew old and she and her sister, who also settled in the Czech capital, were discussing what to do. "In the end, we all agreed to have our already eighty-year old parents move here so that we can help them and take care of them," she explains. Thousands of people are dealing with the same problem. They left the towns and villages where they grew up. Or they live nearby but are often traveling or are very busy at work. Having stayed home alone, their parents are getting old and can't manage on their own. How to address this situation?

The basic rule is simple: don't panic and don't leave everything until the last moment. "It's not easy to admit that our loved ones are getting weaker so we tend to wait for too long instead of looking for the right solutions in due time," says Simona Bagárová, who combines her PR management career with senior care volunteering and has in-depth knowledge of the topic. Yet getting an overview of all the options in time might make finding the right solution for both us and the elderly person easier. Bagárová states that this "task" allows for a managerial approach. She lists the basic questions: "What is the objective? How can I achieve it? What do I need to achieve it? How much does it cost and where do I get the money?"

Moreover, it's no longer true that there's only one possible solution in the form of a retirement home which for many people represents quite a radical and scary option. The care service offer for elderly people and their families is much more varied and many can be provided at home.

HOME IS BEST?

"Home-care nurses check on the client's health. Home-care also includes regular blood samples or chronic wound treatment. In special cases home-care nurses can also provide services to terminally ill clients, if they don't have any serious health complications," explains Marie Kordíková, a Prague based GP. This form of care is covered by the health insurance provider and usually prescribed by a GP. Nurses visit the client

as needed - once a week or several times a day, for instance, it's the physician who decides. Their services, albeit extensive, don't include help with housekeeping or shopping. But even these tasks can be tackled without sending your loved one into a retirement home.

Social outreach services are the answer. These include caretaker service assisting the elderly person with meals, personal hygiene and getting dressed. Caretakers often help with cleaning, housekeeping and shopping. They do the laundry, ironing, take the elderly person to the doctor, government offices and so on. A decree fixes the maximum rate for this assistance at CZK 130 per hour. The elderly stay in their home environment which is extremely beneficial as it has a positive impact on their mental condition. "Yet the accessibility of outreach services varies. Because of high population density, competition in service provision is generally higher in Prague than in peripheral parts of the country. On the contrary, visiting clients outside of Prague takes more time and services are less accessible. In remote areas of the country the lack of qualified staff is also an issue," says Helena Ryklová, the Director of Caritas at the Stodůlky Parish in Prague which is part of the Caritas network of the Czech Republic.

Personal assistance, another type of elderly support, is a similar option. Again, the assistant helps the elderly person in everyday situations and stays with the client for a given period of time - an hour a day or even a whole day. These social services can be covered from the government care allowance. Based on the level of dependence on the help of others it ranges from CZK 880 to 13,200 per month. Yet some elderly people are not physically and mentally fit to stay home, even if they receive support from assistants and family. A retirement home is the solution. For many people it's a hard decision. "Sometimes it really is impossible to provide adequate home-care and support. It's OK to place the elderly person in a home, if it's necessary. But then it's all the more important to talk about everything. Try to be sensitive to your loved one's wishes and talk about their concerns. Tell them you know how hard it is for them," says Bagárová who shares her experience on Simonab.cz.



PRIVATE OFFERS ON THE RISE

As a general rule, the number of places in retirement homes is low and the demand is high. The wait time is often several years. This is why it pays off to think ahead, although the waiting list of applicants is not always decisive. “The decision depends primarily on the client’s specific situation,” says Helena Ryklová from Caritas stating that people lacking good family background have priority. There’s another reason why it’s good to find out in advance what the market has to offer. Various facilities might differ substantially regardless of whether they’re run by a municipality, a non-profit organization, a church or a company. It is therefore important to select carefully, visit the facility (with your loved one) and heed the first impression. “Notice the place’s appearance, the staff’s behaviour, whether the place smells nice and feels comfortable or makes you

depressed, the management’s communication about service offerings and their clients. Focus on details, they always form a functioning whole and are very important,” recommends Bagárová. It’s not necessary to limit yourself to the area of permanent residence (remember the introductory story), although in some cases it could help substantially. Especially when the home is run by a city or a municipality. The Czech market is also offering an increasing number of private homes where the place of residence (in most cases) plays no role. While ten years ago there were only 24 private facilities of this type, in 2016 there was almost a hundred of them and the number keeps rising. Investors see it as a good business opportunity with an ever increasing demand. It’s manifested in the growing number of “nursing homes with special regimes” caring for people with dementia. Roughly



a third of these facilities is privately owned. Rates for these services differ. Private facilities usually charge around ten to twenty thousand CZK per month plus they collect the above mentioned care allowance paid out by the labour office. “Dům u Agáty” in Řeporyje in Prague is one of these privately-owned homes. Aside from comprehensive care, it also offers various day activities. Based on the type of the room, the daily rate ranges from CZK 1,090 to 1,490 so the monthly amount starts at around CZK 33,000.

If you decide that a home is the best option, it definitely helps to respect a few basic rules to make the change for the elderly person as natural as possible. “Visit your loved ones. They need your support and presence to avoid feeling alone. If you can’t come, call to let them know that you are thinking of them. Think what would make them happy and bring them their favourite pictures, books

and personal things. Don’t be afraid to discuss their worries openly. And don’t forget about the elderly person’s house or apartment, water the flowers, take care of the animals. But think of yourselves as well. You are the most helpful only when you feel good and healthy,” says Bagárová.

Assisted living facilities offering privacy in little apartments might represent an intermediate step. They have staff assisting residents but don’t provide all-day care as in a classic nursing home. The basic rent for an apartment in Buštěhrad in Central Bohemia is roughly CZK 2,000 per month. Yet Bagárová points out that it is important to carefully select a facility that provides quality of life to the elderly and is not just a smart move for investors. There are also other options, such as day care centres. One thing is key: plan for the future and talk openly with your loved ones about their needs and wishes.

TOP 3 spots

Lukáš Rozmajzl, editor-in-chief of CityBee.cz



150 × 14 × 3

The numbers in the title are a secret code to the most amazing culinary experience of the first half of 2018 (unless you have made a timely reservation at Copenhagen's Noma 2.0). After earning a Michelin star and placing in top 50 world restaurants with his previous establishment, the Portuguese-born chef Nuno Mendes opened a unique superclub-like restaurant called Mãos in London's Shoreditch in April. For £150 you can enter the restaurant which has a single table for 14 people and enjoy a three-hour culinary delight. That is if you manage to make a reservation, because free places are, at least for now, really hard to come by. "It's a new intimate creative place, which is about culinary freedom, exploration and shared experiences," says Mendes about his new project.

Tip: This is not the first time Mendes uses this concept. The project that made him famous called The Loft entailed serving dinner to select groups of people in his flat. The food was prepared by top chefs as well as promising new culinary stars.

CAFÉ FACTORY

A hundred years ago, it saw the manufacturing of Praga cars, then welcomed thousands of labourers coming to work for ČKD every day, and now the area around the Kolbenova metro station gets a new lease on life. At the end of winter, Kafe Pragovka opened there, becoming the new heart of the multifunctional art centre; in its own words: "A caffeine refuelling station in the midst of the Vysočany industrial area. The central watering hole of the Pragovka complex. An assembly line for happiness." The new café's co-owner Martin Špetlík explains the concept in a more down-to-earth way: "It's a café by day, a bar in the evening, sometimes a music club and occasionally a crazy party place."

Tip: Order more than just coffee. "On weekdays we serve delicious soups cooked personally by one of the owners. She also makes the legendary thyme syrup for our delicious home-made lemonade," says Martin Špetlík, making it hard to resist.

FIREFIGHTER BEER

The Czech micro-brewery scene continues to thrive. The Bruntál brewery aptly called Hasič (Czech for a firefighter, but also, metaphorically, a thirst-fighter), has expanded to the regional city of Ostrava, opening a beer pub called Hasičárna in the Poruba district. The menu features several small snacks to eat with beer as well as delicious specials, like a beef neck stewed for 26 hours in dark beer. The menu is seasonally adjusted and the owners also plan to organize various gastronomical events. The pub has seven different beers on tap and a home-made lemonade. Beer aficionados sing praises of the local Abbey-Belgian, a 16-degree semi-dark beer with caramel notes and hints of berries.

Tip: What's the must-have? "Hasič lagers are a staple. We also have a Bernard lager on tap and three specials from the two breweries. We also want to offer beers from other micro-breweries," says the manager Jaroslav Vašíček.

Marwick's top picks

Anna Batistová



BRNO THEATRE WORLD

The topic of the Brno Theatre World (Divadelní svět Brno) this year is freedom and its fragility. From 24 to 28 May, the festival will offer more than 40 performances by theatre companies from both the Czech Republic and abroad. Central European theatre will feature prominently given the region's first-hand experience with the restriction of freedom of artistic expression. Particularly, Polish performances reflect the recent developments with chilling vividness. Apart from drama, the festival also includes physical and dance theatre as well as performances for children of all ages. Two performances are specifically tailored to toddlers: *Batosnění* by *Damúza* and Slovakian *Batolárium*.

BOOK WORLD

From 10 to 13 May 2018, books will take over Prague's exhibition grounds in Holešovice. This year, the 24th annual international book fair and literary festival focuses on comic books. Comic enthusiasts will have a unique opportunity to meet their favourite Czech authors, like Jaromír 99, Karel Jerie, Nikkarin, Vojtěch Mašek, Lucie Lomová, Pavel Čech and the father of the iconic Czech comic *Čtyřlístek*, Jaroslav Němeček. The festival will be headlined by the film and comic legend Alejandro Jodorowsky. The Book World's guest of honour is Israel.

ZLÍN FILM FESTIVAL

The 58th annual Zlín Film Festival will also reflect the 100th anniversary of the founding of Czechoslovakia, focusing on the Czechoslovakian film production. The festival will feature blocks of children's films and fairy tales compiled by prominent Czech actors and filmmakers complemented with their personal reflections. Visitors can also see the nine most successful TV shows for children and youth produced in Czechoslovakia. The Zlín Film Festival, which is the oldest and largest event of its kind in the world, takes place from 25 May to 2 June.

We'll give young scientists freedom

Presenting scientists with non-earmarked awards for the first time, the Neuron Fund is undergoing a revolutionary change. Pavel Hobza, the chairman of the Fund's Scientific Board, claims that young scientists need independence the most.



In his life he's done hundreds of thousands of similar calculations so when the result was different than expected, he wasn't surprised. We all make mistakes from time to time. But this time something was different. Something was off. Professor Pavel Hobza double-checked all of the calculations - everything was correct. The hydrogen bond which, to put it simply, is a form of attraction between some molecules found almost everywhere, including human DNA, should always exhibit, according to its long-standing definition, a red shift of the vibrational frequency. But Hobza's results showed the exact opposite sign - a blue shift. It's also to the Czech scientist's merit that no one would find it odd today but at the end of the 90s there were only two possible explanations. Either Hobza and his team made a mistake or chanced on a world-class discovery during a routine calculation. "I could have just waved it off thinking that it was against the laws of physics and move on. In moments like this, embarrassment is all you want to avoid. But I found out quickly that it wasn't a mistake." says the seventy-one year old scientist from the Institute of Organic Chemistry and Biochemistry of the Czech Academy of Sciences (CAS).

AN ACCIDENTAL REVOLUTION

The Munich University where he partially worked let him verify the calculations on a much higher level thanks to a supercomputer which was not available in the Czech Republic at the time. The result remained the same, although more convincing. But Hobza still lacked one thing - experimental verification. So he called his friend from Frankfurt Bernhard Brutschy giving him precise instruc-

tions on what to do and what needs to be measured. Two hours later an excited Brutschy calls announcing that his results also show the blue shift. And on top of that, a shift of almost the same size as the one predicted by Hobza's calculation.

The revolutionary discovery was confirmed. In 2000 it was published in the prestigious journal *Chemical Review* and five years later the scientific world agreed on a new definition which rewrote chemistry textbooks. "Many colleagues came to see me at that time telling me: 'My computer showed the same results.' I asked why they didn't publish it and they all admitted to being afraid of having committed an error", smiles Hobza whose resume includes not only the hydrogen bond but also the major discovery of non-covalent bonds. With roughly 35 citations he is also officially the most cited Czech scientist worldwide.

But Hobza doesn't tell the story to boast. One of our most successful scientists just wants to point out that aside from perseverance and a certain stubbornness there's yet another thing needed to succeed in science - money. He explains: "Had I not had money, I would have never done it. Without money I would not have been able to afford a scientific group and I wouldn't have managed without it."

And this is what he is set to change. Hobza also sits in the Board of Directors and chairs the Scientific Board of Neuron, a fund supporting Czech science since 2013. This autumn, Neuron will undergo the biggest change in its history - for the first time money from benefactors will be distributed in a non-earmarked manner with an emphasis on young scientists at the beginning of their careers who need it the most, according to Hobza.



What is the biggest problem?

Imagine you just earned a doctorate, you're in your late 20s with limited experience. Then you set off for a post-doctorate abroad, ideally for at least two or three years. Launching into your scientific career upon your return you realize that you have no money, no quality equipment and often not even a chair. You have basically nothing. Yet this is a decisive phase for a young scientist.

How is it supposed to work?

Just look at the US where it has been working properly for years. This is why American science is so far ahead. Young scientists arrive at a university, they receive money to establish a scientific group, hire some people, buy equipment and work stress-free for five years. Here, on the contrary, they must join a group, mine for instance. It's nice that I already have money but my group must also show results so I can't tell them to do whatever they want for five years.

The Czech Republic does not give scientist such freedom?

The problem is that a young scientist with no experience can't apply for a grant. Fortunately, the situation is getting better. Some four years ago the Institute of Organic Chemistry and Biochemistry of the CAS was the first to open junior fellowships. The winner of this fellowship got a laboratory and "starting money" to hire two or three students and stay for five years. Charles University followed suit when it announced twenty such fellowships last year. With CZK 10 million distributed per year it's something that Neuron can't match but we want to contribute.

Can you be more specific?

Last year we scrapped grants in favour of awards which we will present for the first time in autumn. Seven scientists under 33 will receive CZK 0.5 million each. Three scientists will receive a one million research discovery award. Plus once a year we will also present a two million CZK award for outstanding discovery and contribution to science. For this purpose, we have established an international Scientific Board comprised of Nobel Laureates. They will help us select the scientists and award unquestionable names. And what is absolutely fundamental: the prize is not earmarked.

So scientists can spend it on whatever they like?

Yes, there are no rules. If they go to work by train, they will be able to buy a car to save time and use it for research, for instance. The problem is that government grants are very strictly earmarked for a specific purpose. This bothers everyone in science. The Grant Agency is unbelievably rigid in this. Yet science is evolving and everyone understands that supporting primarily young researchers is vital.

Isn't there a risk of scientists misusing the money? What if someone spends it on a trip to the Maldives?

This is exactly what we worried about at first and why we wanted to oblige candidates in the youngest category under 33 to tell us what they will use the money for. But the billionaires who donate their money to Neuron told us: "No, you can't do that, you have to trust them." So if someone goes to the Maldives for two months, it's fine with us - as long as it helps them to come up with excellent ideas, it's ok.

If it contributes to their scientific work, why not? But we have more responsibility because we have to trust the ones we award.

So the benefactors appreciate the change?

They were excited about it. I told them the same thing I am telling you. Yet our main benefactors donate two million a year which is no joke. By the way, we are still looking for new sponsors, it's a little challenging. You wouldn't believe it but some even get rejected. There are enough applicants but we want their money to be genuinely earned. I won't give you any names but a good number of them, those who would view donorship as something between money laundering and indulgence purchasing, even kowtow to us. And this is not what we want. So our core donors are the owners of RSJ, plus Dalibor Dédék from Jablotron, Martin Wichterle and others. Controversial names are also to be avoided, which is not easy.

What about private funding for Czech science?

It's nearly zero. There are some attempts from groups trying to do private funding, but it's mostly about targeted contributions aimed primarily at biomedical research. No one supports the basic one. Zero. Thank God that at least applied research gets support.

Neuron distributes ten million a year. How much would be needed?

I'll put it differently. Here at the Institute, I have an average-sized group. Fifteen to twenty people, elsewhere it's often more. Our yearly budget, only for this group, is also ten million. And we are only theorists so all we need is a computer and a salary. Yes, science is extremely expensive. And this leads me back to the beginning - when you're a young



scientist at the beginning of your career, this is a huge problem.

To what extent is this lack of support for young scientists you are mentioning detrimental to Czech science?

Terribly. This is why American science is so far ahead.

Isn't it rather about more money going into science there in general?

It is, as it is elsewhere as well. In Japan, Korea, China... But there's nowhere a functioning system similar to the American one. Not even in Europe. I don't know why no one copies the model. Envy is also a problem, I guess. One wants to give money to those who excel which bothers many people. It gets you into hot water. As a consequence, average science is supported and those who stand out must be punished. Everyone is afraid: "What if someone outgrows us to be higher than us? No, no way, we can't support him."

So it's not about money.

Unfortunately. It's about competition, envy. A decent faculty's budget is around CZK 1.5 billion. Yet one fellowship for a young scientist would cost it ten million per year. Three such fellowships at every faculty would

be enough. Thirty million is nothing in the budget of the whole faculty. Money is obviously always the problem. I don't want to say there's none, but with a bit of goodwill, one could find some.

How many junior fellowships would be needed in the Czech Republic?

A few. Last year and the year before, twenty opened at Charles University. It's already visibly slowly filling up. Less than a hundred fellowships are needed for the whole country. Yet it should work on all levels. At universities and institutes across all disciplines. If we do this, the result will come quickly.

Pavel Hobza

He specializes in theoretical and computational chemistry focusing on non-covalent interactions and their application in chemistry and life sciences. He authored more than 450 publications and three books and is the most cited scientist in the Czech Republic. He acts as Distinguished Chair at the Institute of Organic Chemistry and Biochemistry of the CAS and professor of physical chemistry at Charles University and Palacký University in Olomouc.

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Design democracy

Every field offers some scope for creativity. That is the message of Prague Design Week, which showcases more than eighty Czech and foreign designers, including household names as well as students and new brands that want to bring artistry to unusual fields. The organizer Ondřej Krynek has chosen three designers deserving special attention.



HOTDOG APPAREL

The two Brno-based designers both have dogs, so they are no strangers to this problem: dog accessories primarily aim for practicality, wholly disregarding the aesthetics. They decided to address this problem by designing dog beds which even the most stylish dog enthusiast wouldn't want to tuck away. "We've set out to create proper dog beds for our furry friends, which would also correspond with the notion of a stylish home. We want to rebrand this long ignored piece as a designer home furnishing and create a tasteful sanctuary for our four-legged friends. We always design "twin sets" - matching pieces for dogs and owners - trying to reflect their equal importance, mutual love and bond," the designers explain. They make pillow beds as well as matching apparel and accessories, which all sport fresh colours and a modern look. Aside from the attractive design, another selling point is that all the products are made in the Czech Republic using local materials.



WOOD.U

It all started with an idea for a more tasteful and natural alternative to brightly coloured silicon monsters generally sold at erotic shops. The three friends behind the wood.u brand began making erotic toys from wood when still at high school. What started as fun making presents for classmates, later turned into a school term project requiring much more time and energy. “Unleashing their wood on the market” then seemed to be the logical next step. The whole idea was a bit crazy arousing a lot of prejudice. But their stylish alternative to often distasteful silicon toys met with general acclaim at two smaller showcases as well as Prague Design Week last year, putting the three young designers on the map. Their dildos are made from Czech wood, proudly displaying the natural grain. The designers like to give them original names and generally talk about them as a bit of nature that belongs to the bedroom. “Our project is not only about making dildos. We want to change the general perception of erotic toys. We want to bring them out into the open as a topic that can be discussed publicly without jeering,” they say.

DRUM BARREL FURNITURE

Wooden crates, shipping pallets and recently also tin drum barrels are a popular choice for making furniture. At the beginning of the year, Mr and Mrs Bedrna started making stools and coffee tables using the third “material”, becoming the first producers in the Czech Republic to turn used drum barrels into furniture. Their timing couldn’t be better, with the growing trend for eco-friendliness, recycling and upcycling. The Drum Barrel Furniture line currently includes just a handful of pieces, but thanks to their matching designs, the stools, armchairs and coffee tables can be easily combined to create various seating arrangements. Many of them sport a vintage look, while some are decorated with ornaments and vibrant colours. The bold furniture naturally requires the right space and would look great in a bar, a gentlemen’s club, a barber shop, a chill-out zone of a progressive company or an outdoor terrace.

PRAGUE DESIGN WEEK 2018

Prague Design Week will take place on two floors of Kampus Hybernská, a former residential building in the centre of Prague just a stone’s throw from the Municipal House, on 21-27 May. It will bring together more than eighty designers and studios, showcasing product design, original furniture, student design as well as fashion and jewellery, with most of the pieces for sale.

ICERINK OPENS IN PRAGUE'S STRAŠNICE

After fifteen years, a new ice skating rink called Icerink has opened in Prague. Its building in Strašnice was designed by young architects from the Vrtiliška and Žák studio. The modern structure immediately catches your eye with its organically shaped white openwork front resembling what ice looks like under a microscope; the entrance is reminiscent of cathedral doorways. Two ice rinks easily meet the needs of the public as well as young hockey players and figure skaters.



AMANITA DESIGN LAUNCHED A NEW ADVENTURE GAME CALLED CHUCHEL

After a long wait, the Czech game developers from Amanita Design finally published their new game called Chuchel. After the well-known Samorost, Botanicula and Machinarium, they introduce another new character and an entirely original game world. Completely hand-drawn and accompanied with an original score, the game takes you to the world of the main character, Chuchel, who needs to save his beloved cherry tree from the evil Kekel.

PRAGUE TO BUILD A FLOATING OPEN-AIR SWIMMING POOL ON THE VLTAVA RIVER

Next summer, Prague citizens could have a swim in a floating open-air swimming pool on the Vltava river. Prague decided to give a green light to the design of architect Petr Janda, who is also behind the current renovation of popular Prague's riverbank. The structure, resembling a multi-storey ship, is intended for the stretch of the river below the Vyšehrad castle. Its lower part would comprise a swimming area and showers, while the upper decks could be used for sunbathing and feature a bar and whirlpool baths.

ŠKODA UNVEILS A NEW SMALLER SUV CALLED VISION X

At the Geneva motor show, Škoda Mladá Boleslav unveiled its third SUV model with the working name Vision X. It is a crossover between a traditional off-road SUV and a city car. The design consistently uses crystal-shaped elements, which appear on the headlamps, the grille, the dashboard, the seats and elsewhere in the interior. New Vision X is a hybrid with both electric and combustion engines. Full production could start within the next two years.



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