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Brad Staples

APCO Worldwide

Kıvanç Zaimler

Sabancı Holding

THE ROARING SILENCE

PERIODICAL #28

The Roaring Silence

I don't want to live in Russia. Nor China, or Iran. I love the Western world and our values. Of course, many things in Europe drive me crazy. Our Western world succeeded because our values used to foster creativity, initiative, and hard work. If we continue to kill our strength with bureaucracy and complacency, our system will stop working.

And yes, we also need to fight against those who attack our values from inside, like the wannabe dictators Trump, Orban, and Netanyahu. But let's not mix up self-criticism with naïve tolerance or even support for our enemies. It is scary to see how vulnerable the steadfastness of our society is to propaganda. We must fight extremism everywhere, but let's not forget in the Middle East the true evil is Iran.

And while our woke societies' attention shifts to the Middle East, the true fight for European freedom in Ukraine gets lost. Ukraine and we must pay the price for Europe's policy of "too little and always too late." As if we never realized that time is not on our side.

Sadly enough, this lack of leadership and willingness to fight for our values includes many entrepreneurs and corporate managers. How can you justify still being active in Russia? Even if you sell food or operate in the healthcare sector, you must put those in Ukraine who fight for our safety first. Don't just write our values on a poster.



Yours

A handwritten signature in black ink, appearing to read 'M. Pertl'.

Markus Pertl
Chairman of The Stern Stewart Institute

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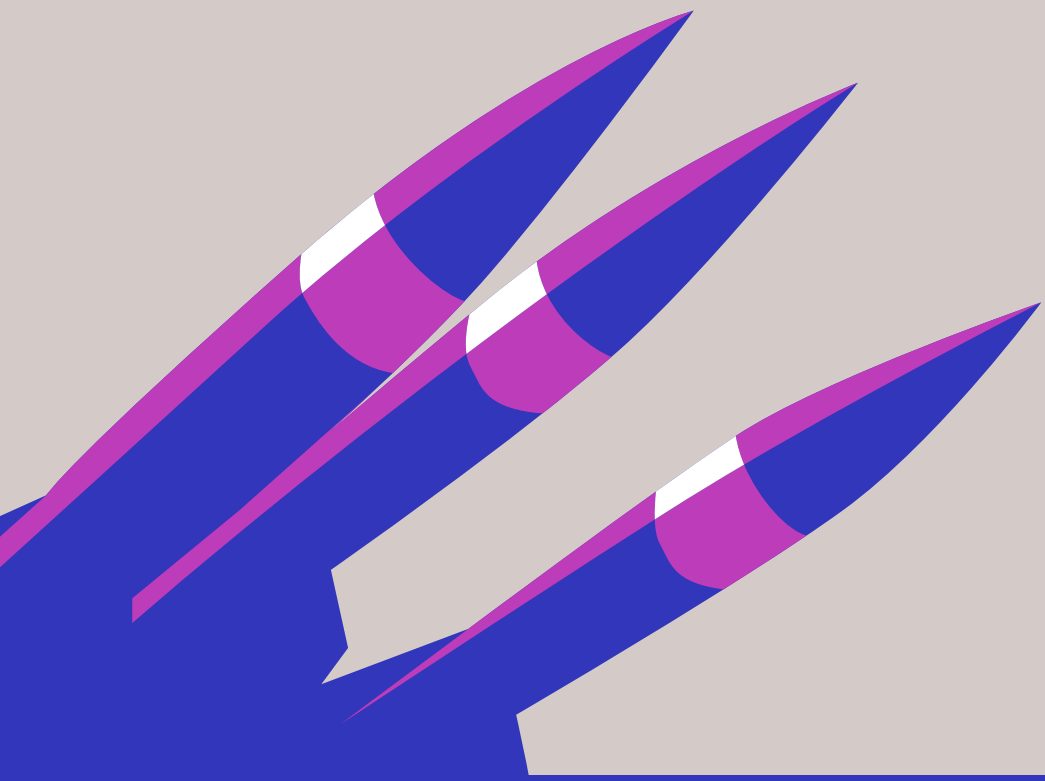
A Terrible Price in Blood

Assessing Responses and Risks

The world faces complex geopolitical challenges – a web of responses and risks confronting the United States and its allies. From Russia’s ongoing war against Ukraine to the active conflicts in the Middle East with Iran, Hamas, and Israel, it explores the changing dynamics and inter-connectedness of global affairs.



Ben Hodges
General



Today, the United States and its Allies face challenges around the Globe. Russia's war against Ukraine continues, well into its ninth year since Russia first invaded Ukraine and now almost two years since the start of its large-scale invasion. Iranian proxy, Hamas, is actively engaged in a deadly battle with Israeli Defense Forces in Gaza following the shocking Hamas atrocities of October 7. Iran's other proxies, the Houthis and Hezbollah, launch missiles and rockets at Israeli and US troops in the region. Meanwhile China watches. Beijing is waiting to see, if the US and UK and other Western nations have the political will, military capability, and industrial capacity to help Ukraine defeat Russia, limit the war in Gaza from escalating beyond the borders of Israel, help bring about a two-state solution for Israel and Palestine, deter Iran from further strikes against US forces in Syria, and still have enough left to deter China from its own aggression against the Philippines or Taiwan. China, Iran and Russia share a disdain for the international rulesbased order created after World War II from which so many of us have benefited and prospered and which we now seem to take for granted. They see weakness and exploit the lack of trust and coherence in so many of our societies. They see the disastrous conclusion to the 20 years of war in Afghanistan as evidence that no nation can really trust the Western powers as reliable partners.

Ukraine is fighting the battle for us all

Ukraine now fears it may be the next to be abandoned, and with good reason. The Kremlin is the biggest beneficiary from Hamas' attack on Israel as Western attention is diverted from Ukraine. It is not a coincidence that Russia's ally, Iran, stands behind the groups which have attacked Israel.

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The right wing of the Republican Party has decided to oppose support for Ukraine, apparently for no better reason than that their domestic political opponents are in favour of it. Incredible to see the “Party of Reagan” using Kremlin talking points and turning their back on Ukraine which is fighting a Russian invader. Support for Ukraine ought to be self-evident for any American. This is not some far off regional border dispute as one Republican Presidential Candidate





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described it. What's happening in Ukraine is about so much more than Ukraine. American prosperity depends on European prosperity, and European prosperity depends on security, stability and secure food and energy supply chains. The aforementioned rules-based order is under threat from Russia – and Ukraine is the front line in defending that order. In light of what's at stake, the monetary cost for supporting Ukraine is trivial, a few percent of our normal defence spending. The Ukrainians – at a terrible price in blood – are fighting a battle for all of us who consider ourselves part of the Democratic West. And, due to our unwillingness to commit to Ukraine actually defeating Russia, the Ukrainians are fighting with their hands tied behind their back.

Changes in the balance of power

The other major beneficiary of Hamas' attack on Israel is Iran. The Hamas attack on Israel has not only diverted attention and resources from Ukraine, it has also severely damaged hopes for progress in the implementation of the Abraham Accord. Even those Arab nations who don't like Hamas and do fear Iran, are unable or cooperate with Israel in light of the large number of innocent Palestinians who have been killed as a result of IDF operations in the last weeks. Clearly, Hamas is a terrorist organization and their use of innocent people and hospitals as shields is a war crime, but the IDF is still bound under international law to protect innocent people in these operations. Hamas, and Iran, knew that the Israeli government would respond with force as a result of the savage murders of 1200 people and the abduction of over 200. The foreseeable response by

the IDF inevitably undermines Arab-Israeli cooperation and thus changes the balance of power in the region in favour of Iran. Unfortunately, the Netanyahu government with its support for continued illegal settlements in the West Bank and its focus on destruction of Hamas versus working towards a two-state solution while punishing Hamas is unlikely to make progress in achieving such a solution. The mission statement from PM Netanyahu to the IDF, “Destroy Hamas”, is not an achievable end state because it doesn't address the root cause of Hamas.

Military force is only part of the solution

There are calls across the West for a ceasefire: an immediate end to Israel's effort to remove Hamas from control of Gaza. President Biden is correctly resisting these calls, while at the same time encouraging Israel to continue providing operational pauses for the delivery of humanitarian aid into Gaza. He and his tireless Secretary of State, Anthony Blinken, are working with other nations to press Israel and Palestinians to move towards the elusive two-state solution. That plan addresses the root causes of Hamas, rather than purely kinetic operations that don't contribute towards a peaceful, sustainable solution. Military force always delivers only part of the solution. As much as the Israeli ruling coalition may dislike the idea, post-Hamas Gaza will need Arab-led governance. Illegal Jewish settlements in the West Bank must be dissolved. And the IDF must comply with the Law of Armed Conflict, accepting responsibility for the protection of innocent civilians even though Hamas is using them as shields.

In Ukraine, Biden should move to end the war by arming Kyiv to win, not merely to help them “for as long as it takes”. The US and Germany should provide the long-range precision strike capability necessary for destruction of Russian naval, air and logistics facilities in Crimea which would render the peninsula untenable for Russian forces. UK and France have shown that long-range weapons can be given to Ukraine without causing a Russian nuclear attack: there is no reason for timidity from Chancellor Scholz, much less from President Biden.

No time for weakness

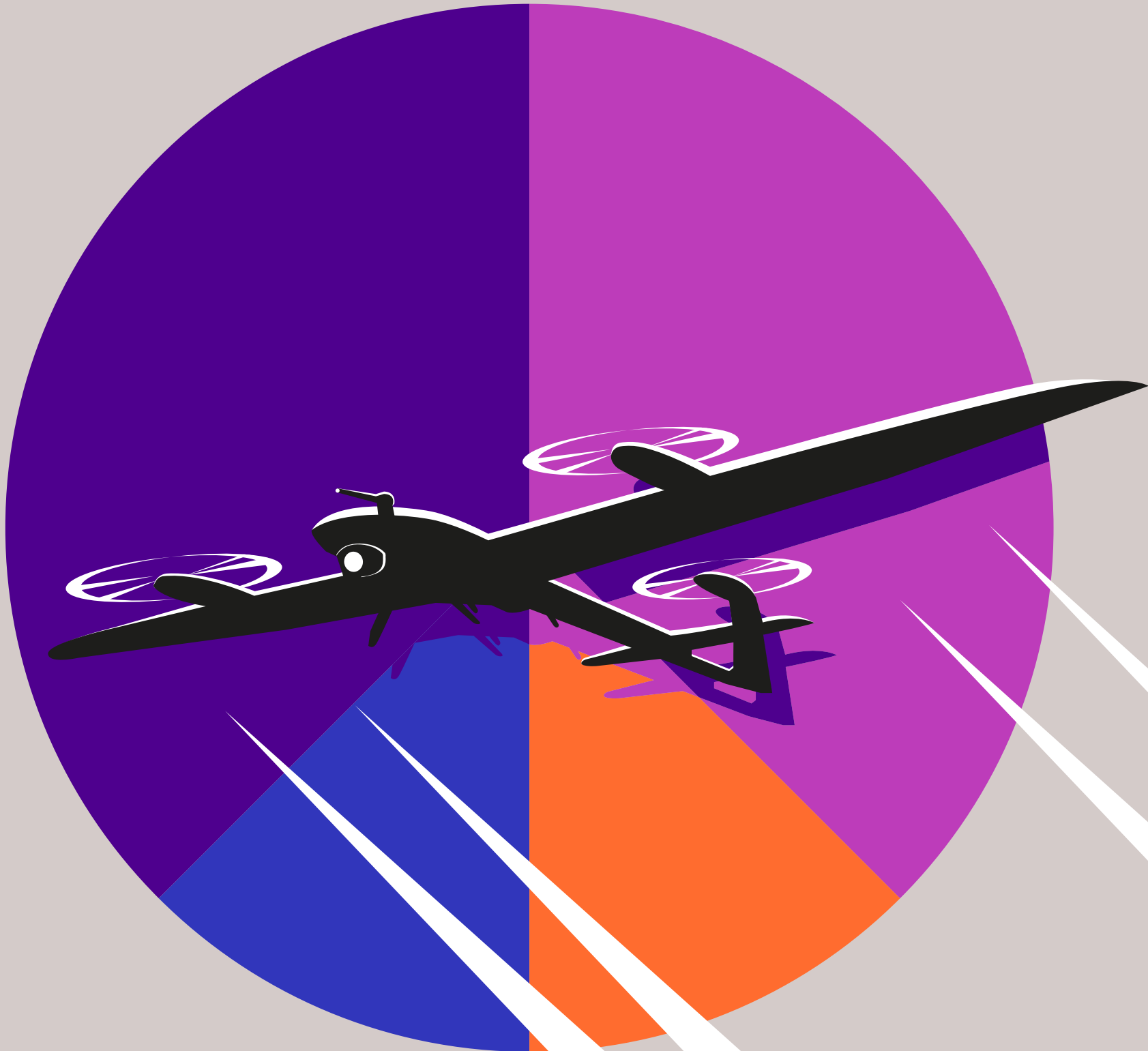
Russia’s war against Ukraine is the result of failed deterrence by the West. The Kremlin was sure that based on our unwillingness to respond with firmness to their previous aggression that we again would not respond, so they launched their large scale invasion in February 2022.

If we show weakness now, we may be inviting China to make a similar miscalculation which could lead to a far worse conflict than those now underway.▶





Florian Seibel
CEO
Quantum Systems



The Dual- use Game

We are the sum of our choices. That's true for our private lives, in business and in times of conflict. We have to take decisions all the time. And those decisions don't get easier. On the contrary, taking them becomes increasingly difficult.

A photograph showing a white Vector drone in flight against a blue sky with light clouds. Below the drone, a robotic arm is mounted on a dark structure, likely a drone port. The arm is extended upwards, and the drone is positioned above it. The structure has the text 'QUANTUM SYSTEMS' visible on its side.

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DESPITE THE
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SOCIETAL
ADVANCEMENT.
”

Seeing the bigger picture is thereby vital. Through new technology, we have more knowledge than ever, and everything is faster than it used to be. The key is getting the right data at the right time. Something satellites cannot do.

Drones have introduced a new element of aerial intelligence. They have evolved from niche to one of the main assets in gathering, understanding, and exploiting data – in civil surveying, disaster management, law enforcement, or defense.

Drones have become a mass product. However, they were limited to either commercial and recreational use, or to larger types only governments could afford for their armed forces. Neither side was flexible enough for dual-use cases. It had to be either-or.

Technology shaping the future

In an era marked by rapid technological advancement, global competitiveness, climate change, geopolitical tensions and conflicts the general concept of dual-use technology has emerged as a pivotal driver of innovation. Dual-use technology encompasses innovations and advancements that can serve both civilian and military applications, having the potential to significantly shape the future of various industries. Drone technology is just one example. However, despite the immense potential, the Western world faces a critical need to amplify its focus on leveraging and fostering innovation in dual-use technology for sustained economic growth, security, and societal advancement.

Figure 1:
The Vector drone can take-off from and land on the self-sustained Drone Port.

This duality allows for the crossover of technologies initially developed for defense or security purposes into various commercial sectors, such as healthcare, transportation, telecommunications, and many more. That works the other way around as well. The versatility of dual-use technology lies in its ability to transcend boundaries and create multifaceted solutions that cater to diverse societal needs.

Quantum Systems is fully embracing that by bringing the synergy of commercial and defense purposes to numerous industries and professional drone operators balancing both advantages: Innovation and speed from the commercial side, battle-proven and most robust systems in the military. With the perfect synthesis of hardware, software and AI we optimize commercial businesses. We increase efficiency in decision making for our customers in various verticals from farming to mining to inspection and infrastructure construction.

We serve democratic governments in times of unprecedented geopolitical tensions and conflicts, where modern data sensor driven operations matter. Aerial intelligence becomes a decisive edge.

Dual-use has become our DNA. In general, companies delivering goods or services need to be fast to be successful. Quantum Systems always requires its engineers to prioritize speed over perfection. "Fail fast and iterate quickly" is the only way to be successful as a start-up. The ability to embrace failures as an opportunity to learn, swiftly adapt, and iterate on ideas is crucial for several reasons.

Flexible thinking ensures success

Firstly, it fosters a culture of innovation and resilience. By acknowledging that failures are steppingstones toward success, individuals and organizations are empowered to take calculated risks, explore new ideas, and push boundaries without the fear of failure paralyzing progress.

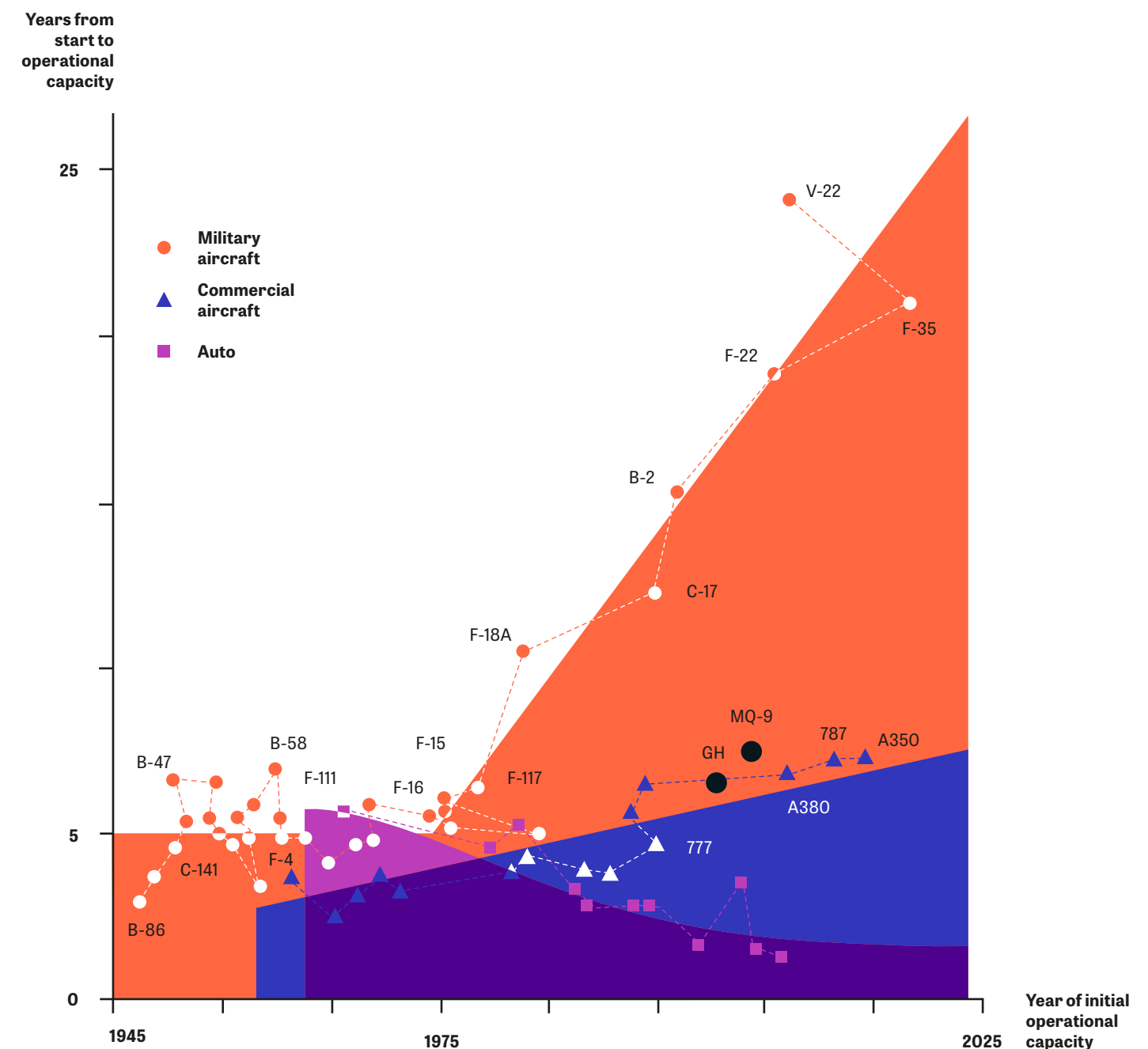
Secondly, it accelerates the learning process. Swift iterations allow for the incorporation of feedback and real-world insights into the development cycle. This iterative approach ensures that products, strategies, or innovations evolve in alignment with market demands and user needs, enhancing their relevance and efficacy.

Moreover, failing fast and iterating quickly minimizes the cost of failure. Early identification of flaws or inefficiencies enables timely course corrections, reducing the waste of resources, time, and effort in potentially unfruitful endeavors.

Ultimately, this approach fuels agility and adaptability, enabling individuals and organizations to stay ahead in a rapidly evolving landscape by consistently refining and enhancing their offerings.

This approach could and should be adopted within the defense sector as well which is not the case for the majority of the large and well-established players in that market. It demands incentivization for proactive movement. Fortunately, a feasible and proven model exists: every other industry in the world. Whether they sell automobiles, smartphones, furniture, or beverages, most companies receive payment only upon delivering a final product. Companies ought to self-finance their research and development, efficiently engineer new products, and subsequently offer them "off the shelf" to government partners. Correspondingly, the government should aptly compensate companies undertaking risk and bearing the costs of technological development. Companies like SpaceX have successfully shown how this works.

Figure 2:
Greenwalt, William & Patt, Dan,
"Competing in Time:
Ensuring Capability
Advantage and
Mission Success
through Adaptable
Resource Allocation."
Hudson Institute,
February 2021



Usually, the operation of a defense company is on sales revolving around current systems or they opt to await direct government orders for designated R&D initiatives, which they are compensated for. Why should they innovate on their own if every contract gets paid for no matter how long it takes and how expensive it gets? In the end the intended outcome is a topic of national security and must not fail, no questions asked. To illustrate, the leading technology corporations today, whose earnings significantly surpass those of the top defense firms, allocate approximately 10–20% of their revenue towards research and development. Comparatively, emerging or medium-sized technology startups invest around 60% or 70%. In contrast, major defense corporations allocate only 1–4% to research and development.¹

Innovative spirit for the defense sector

Now let's take this innovation dilemma and combine it with the primary falsehood in the discourse on defense spending, saying that we're confined to a binary choice: either achieving "more with more" or settling for "less with less." This is a fallacious dilemma; innovative technology enables achieving greater outcomes with fewer resources. The perceived standstill in the defense sector is not unavoidable, and we are not obliged to embrace it. Today's military systems and defense companies should mirror the innovative spirit of Tesla rather than the traditional approach of Ford and embody the forward-thinking ethos of Apple rather than the outdated model of Nokia.

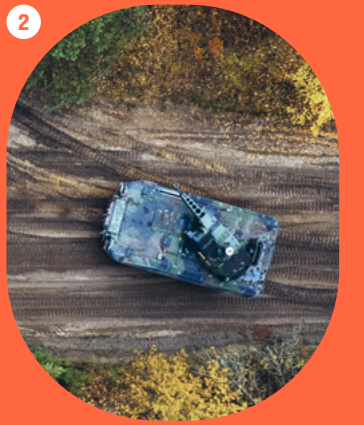
So, what is next? A drone today is a bit like what a smartphone was just over a decade ago: a well-known device but widely underestimated in terms of innovation and business potential.

The deployment of a drone will soon be automated. No more tiresome process of taking a car to the intended operations area, then physically setting up your drone, preparing and uploading a flight plan, charging and pre-heating your batteries followed by manually pressing buttons on a controller to get airborne. Upon landing the same in reverse. All to get a high-resolution, ideally real-time aerial shot. Quantum Systems is pushing to become the world leader in AI powered aerial robotics. No more operators needed, and human interaction reduced to a minimum. We call it Drone Port.

¹ Maucione, Scott. "DoD's Kendall wants more research spending from industry." Federal News Network, November 2015, <https://federalnewsnetwork.com/defense/2015/11/kendall-wants-research-spending-industry/>.

Figure 3: Drones from Quantum Systems serve a variety of use cases and scenarios already.

- ① Disaster management
- ② Defence
- ③ Precision farming
- ④ Construction industry
- ⑤ Border protection
- ⑥ Mining Industry



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 BATTLEFIELDS AND
 PROVIDE PUBLIC SAFETY
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 CUTTING-EDGE ADVANTAGE.**
 ”

We're shaping the future of automated drone deployment to provide customers aerial intelligence when it matters. Anytime and anywhere. Drones will soon be automatically deployed to monitor borderlines, battlefields and provide public safety organizations with a cutting-edge advantage. Once operational and fielded in a military and public safety context we envision to use the same core technology and bring our dual-use advantage into commercial businesses like farming, mining and linear infrastructure scenarios by providing aerial intelligence for better decision making.

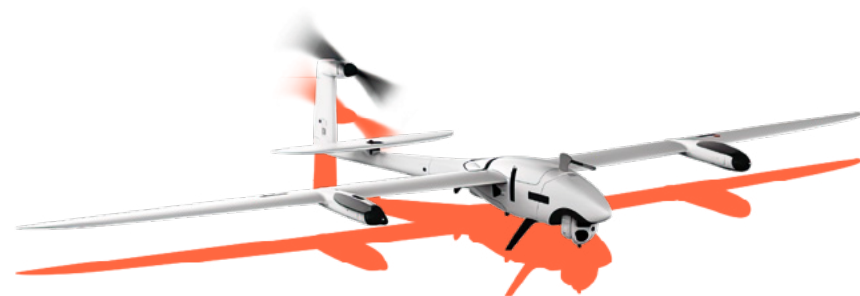
Aerial intelligence when it matters

Our aim is to bring this future into existence, nurturing safer communities globally. We strive to ensure universal access to air support, believing that safety is a fundamental right for everyone across the globe.

Our connected network of Drone Ports will turn aerial intelligence into a data as a service model. A little bit like google maps on your phone today. But real time. Aerial intelligence when it matters.

That said, Quantum Systems is one of a slew of innovative companies pioneering a new model, based on the following principles:

The convergence of military and civilian technologies fosters a fertile ground for innovation. Ideas and discoveries from defense research often have civilian applications, accelerating technological progress across industries and vice versa. Leveraging dual-use technologies promotes cost efficiency and economies of scale. Investments made in defense research can yield breakthroughs that have lucrative commercial applications, stimulating economic growth and competitiveness. Innovation in dual-use technologies will push the boundaries of what's technologically feasible. Advancements in fields like materials science, AI, energy and propulsion, driven by defense needs, have cascading effects across industries, propelling technological evolution.



It has to be the Western imperative to enhance innovation in dual-use technology. While the West has historically been at the forefront of technological innovation, the landscape is evolving rapidly. To maintain and strengthen our position, Western nations must prioritize the development and integration of dual-use technologies.

The journey towards harnessing the potential of dual-use technology is not without its challenges. Concerns regarding ethics, privacy, and misuse of technology demand thoughtful consideration and regulatory measures. Striking a balance between innovation and ethical boundaries is crucial in ensuring responsible technological advancements.

Moreover, fostering a culture of innovation requires a concerted effort to overcome bureaucratic hurdles, encourage risk-taking, and support entrepreneurs and startups working in dual-use technology domains.

In conclusion, dual-use technology stands as a cornerstone for driving innovation, economic growth, and societal progress. The Western world, with its rich history of technological innovation, holds the potential to lead this transformative journey. By investing in R&D, fostering collaborations, nurturing talent, and creating conducive regulatory environments, Western nations can harness the full potential of dual-use technologies. Embracing this future of innovation not only bolsters economic prosperity but also ensures technological advancements that positively impact global societies, security, and well-being.

The challenges ahead are gigantic, but so are the rewards if we are successful: continued peace and a prosperous free democratic world. ■



Figure 4: By building a network of Drone Ports, Quantum Systems will become the provider for realtime aerial intelligence.

What(ever) it Takes

to Decarbonize Transportation



Andreas Gorbach
Member of the Board of Management
Head of Truck Technology
Daimler Truck

Our everyday life is largely based on commercial vehicles. They have a huge impact – unfortunately also when it comes to CO₂ emissions. Decarbonizing trucks and buses is a tremendous challenge – and, at the same time, a tremendous opportunity.





Monday morning. A new week is starting. Also for Susan. She leaves home early and gets on a bus. Switches to another bus. On her way to work, she calls in at a pharmacy to pick up medication – her son caught a cold. After a short walk, she arrives at work and enters the factory. Susan leads a team of employees working at an assembly line of a global manufacturer. Parts arrive, Susan does her job. Chats with colleagues. More parts come in. After work, she stops off at a supermarket and gets food for the family dinner. Takes the bus home.

Susan is fictional, I just made her up. But for many people across the world days like this are typical for their everyday life. What we tend to oversee: Our daily routines would hardly be possible without commercial vehicles. Without them, major parts of our economy and society would stop functioning. Commercial vehicles take goods to huge shopping malls and small shops, bring supplies to construction sites and hospitals – and they take people to work, on vacation or our kids to school. Trucks and buses keep the world moving. They have a huge impact – unfortunately also when it comes to CO₂ emissions. And we are working hard to preserve the former and change the latter.

Part of the problem

Let's look at the (approximate) figures and take Europe as an example: There are about six million trucks with a gross vehicle weight above 3.5 tons on the road. Every year, these six million trucks clock up around 300 billion kilometers. Every year, these six million trucks consume about 60 million tons of diesel. Every year, these six million trucks emit around 200 megatons of CO₂ – this would translate into approximately 700 terawatt hours (TWh). Every year, these six million trucks (plus the buses on the road) are ultimately responsible for roughly seven percent of Europe's CO₂ emissions.

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Thus, when we look at the global threat of climate change, commercial vehicles are part of the problem. But they are beginning to become part of the solution as well. In fact, there are three crucial factors that determine the decarbonization of transport – and right now, zero-emission vehicles are the driving force of these three factors. The bottlenecks lie elsewhere.

Part of the solution

Today, all major manufacturers are investing massively into zero-emission vehicles (ZEVs) – the transformation in terms of vehicles is in full swing. However, compared to where we need to go, there is only a small number of ZEVs in daily customer operations today, whilst CO₂ reduction targets in Europe are ambitious. The goal is to reduce CO₂ emissions in the new fleet population by 45 percent by 2030, compared to those in 2019. This translates into more than 400,000 ZEVs on the roads of Europe by 2030. That's bold, but not impossible – so how do we get there?

To get the full picture, one thing is important to understand. The decarbonization of commercial vehicles will not rely on one, but on two propulsion technologies: Battery-electric and hydrogen-based drives. There are four main reasons for this:

① **Customers:** The transportation tasks of logistics companies are extremely diverse – from vans to street sweepers, from city buses to construction vehicles, from plannable inner-city distribution to long-haul transport with a need for high flexibility. Depending on the customer's use case and other factors like regional energy prices, either drive technology can be the more profitable business case.

② **Infrastructure:** Building up both infrastructures, one for batteries and one for hydrogen, requires actually less investment than scaling up the electricity grid alone. Because while the initial cost of electric infrastructure is fairly low – you basically need to install chargers and connect them to the existing grid – the cost of upgrading the power grid is fairly high. In contrast, as demand and utilization increase, hydrogen infrastructure decreases in relative cost. And as all economists – and this includes truck and bus customers – strive for the economic optimum, this clearly leads us to two infrastructures.

③ **Green energy availability:** Almost every country relies on energy imports. Europe alone imports about 60% of its energy today. Even in the emission-free future, a 100% local energy supply is not realistic and certainly not competitive. Therefore, a global trade in green energy will emerge, based on a molecule being able to store and transport energy around the world: Hydrogen.

④ **Efficiency balance:** There is a balanced “sun-to-wheel” efficiency for hydrogen trucks and battery trucks. Because with a solar installation in the sunny south, a hydrogen truck can travel a similar range per hour of sunshine as a battery truck with energy coming from a solar installation of the same size in Europe. In short: The higher efficiency of solar panels in sunny regions can compensate the lower efficiency due to electrolysis and drive train conversion.

But which factors are decisive to make a zero-emission truck a business case for customers?

Never change a running system

Customers do not buy trucks for fun. Unlike cars, no one takes a truck for a weekend joyride. A truck is an investment good that must earn money for its owner. Therefore, buying a truck is an investment decision. This brings me to the second factor in the equation of decarbonizing transport: Cost parity.

The formula is simple: As long as operating diesel-powered trucks and buses is more cost-efficient than operating battery-electric or hydrogen-based ones, the majority of customers will always stick to diesel. For a good reason, they will not change their running system. Well, what does it take to change it?

Buying a truck means calculating what is known as “Total Cost of Ownership” (TCO). One important cost item is the purchase of the truck – and purchasing a battery-electric truck will always be more expensive than a diesel truck. One example: For the foreseeable future, a 600kWh battery powering a long-distance truck will involve about twice the material cost compared to the main components of a diesel drivetrain. Thus, the operating cost of the ZEV will have to beat the diesel truck by far to make a viable TCO case. Besides paying the driver, the most significant cost item is fuel.

Today, one kilowatt hour (kWh) in Europe costs about 70 cents at public chargers, one kilogram of hydrogen about 10–15 euros at the pump. Truck customers can make a business case with about 40 cents per kWh and about 4–5 euros per kilogram of hydrogen. This means: Prices for green energy will be absolutely crucial in achieving cost parity between a diesel truck and a battery-electric or hydrogen-powered one.

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”

As energy prices are hard to predict, especially considering today's geopolitical tensions, we will have to make use of a second steering impulse to speed up the transformation: Making the operation of diesel trucks more expensive. The upcoming CO₂-based toll in Germany is a first step in the right direction. Increasing diesel taxation would be another political option.

In the end, green transport will become more expensive. The sustainable future will come with a price tag – to claim otherwise would be insincere. But even when cost parity between ZEVs and diesel trucks is achieved, customers still need to charge and refill their trucks. And this brings me to the third crucial factor, besides emission-free vehicles and cost parity: Infrastructure.

Chicken or egg?

Not so long ago, manufacturers reasoned not to build zero-emission vehicles due to the lack of charging and refueling infrastructure. At the same time, energy companies decided not to build up infrastructure because there were no ZEVs. That has changed. And besides the ZEVs, commercial vehicle manufacturers have also kick-started infrastructure initiatives, although it is neither their business nor their job.

Once again: Let's take a look at the numbers. A battery-electric long-haul truck needs megawatt charging – at least 700kW of charging power – to recharge sufficiently during a driving break. That equals the charging power of about 200 household sockets. In Europe today, we have less than 50 chargers above 350kW. And we have about 50 hydrogen refilling stations for trucks (most of them today not even suitable for long-haul applications). What do we need to realistically meet the 2030 CO₂ targets in Europe I mentioned above? About 35,000 megawatt

chargers and about 2,000 hydrogen stations – starting today, that is approximately 400 high power chargers and 25 hydrogen stations per month (depending on size and performance of the station).

What(ever) it takes

In order to speed up the decarbonization of road freight transport, it is now key to send out the right political signals that will enable the market uptake of battery-electric and hydrogen-based vehicles. These signals must focus on the two factors besides vehicles that are decisive for decarbonization: Infrastructure build-up and cost-parity.

The CO₂-based toll will only make a real difference if it becomes a solution for the majority of Europe. And it only becomes an effective political steering impulse if a change in customer behavior follows. This will only be possible if a dense infrastructure network is available. Thus, a significant amount – about 20 percent – of the revenue stream coming from the CO₂-based toll must be invested into battery-charging and hydrogen-refilling infrastructure. Besides that, we must speed up approval procedures, passing some kind of “bureaucracy reduction act”. But no matter which one it will be or not be, one thing is for certain: Climate change will not wait for our industry to transform to CO₂-neutrality. We need to act. Now.

And yes, decarbonizing transportation is a massive challenge. But I rather see it as a massive opportunity. The opportunity of our lifetime to make a real difference. This counts for all stakeholders involved. So that trucks and buses can operate emission-free. So that they can keep the world moving. So that people like Susan can keep their weekly routines. So that generations after Susan can still rely on trucks and buses to be the backbone of their everyday lives, of our economy and our society. ■

Private Markets' Revolution

Why private markets are surpassing public markets in building businesses at scale within traditional industry sectors



Wolf-Henning Scheider
Partner and Head Private Equity Partners Group



Private markets firms today are quite similar to large, diversified industrial firms. This was not always so, and the reason for this evolution lies in the changing roles of public and private markets.

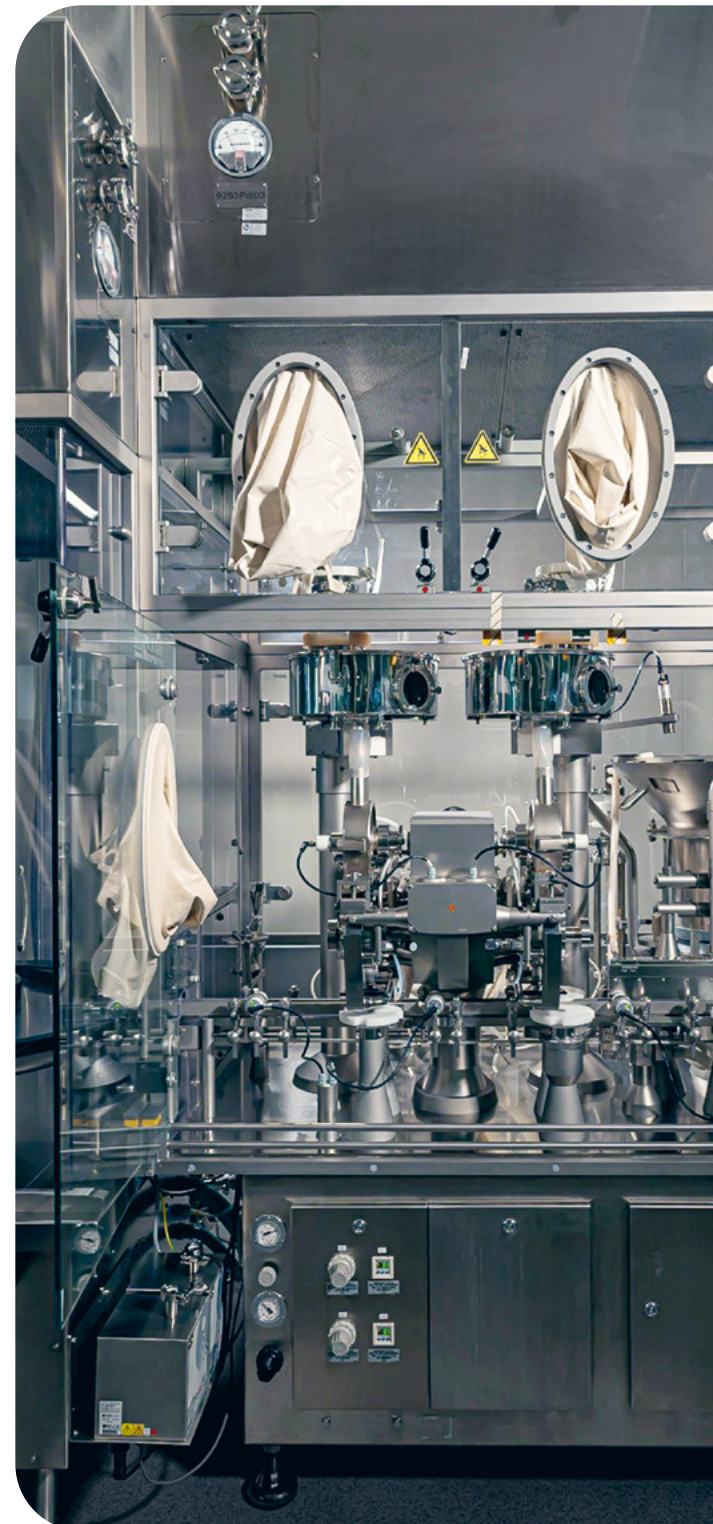
Slightly over one year ago I joined Partners Group, the global private markets firm, from ZF Group, a well-known multinational industrial company with more than 160,000 employees and multiple diverse business lines. One might ask why I would leave a successful career in the automotive industry to join a private markets firm with just 1,900 employees. In fact, Partners Group and ZF Group have more in common than one may think. Partners Group's direct control portfolio encompasses more than 60 companies and employs more than 250,000 people across a wide range of industries. Taken from that perspective, private markets firms like Partners Group today are quite similar to large, diversified industrial firms. This was not always so, and the reason for this evolution lies in the changing roles of public and private markets.

Changed focus in private markets

The way businesses get funded has changed dramatically in recent years. In the past, going public was the ultimate goal for a company – a sign that it had established its worth and reached maturity. But now, this is not necessarily true. The companies that enter the public markets are not always mature businesses. Often, they are young companies, motivated by chance, expectation, and risk. These are vital qualities for a new business, but they are not the usual domain of IPO financing. On the other hand, private markets have also changed their focus. Once known as a place for chance and event-driven strategies, generating returns by buying, breaking up, and selling assets, private markets have increasingly moved to funding mature enterprises, building businesses, and creating value through organic growth and operational excellence. And the numbers support this observation – while the share of profitable businesses undertaking an IPO has plummeted to nearly 20% in the last decade or so, private markets capital formation – raising capital for traditional business building – has outpaced global equity issuance since 2016. While examples of companies undertaking an IPO are mostly loss-making firms like Doordash, private markets are investing in established firms with a clear growth trajectory such as ROSEN Group, a provider of mission-critical inspection services for energy infrastructure assets that Partners Group acquired recently on behalf of its clients.



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As private markets become the new engine of economic growth, private markets firms need to differentiate themselves from their competitors and deliver superior value creation for their investors and portfolio companies. One way to achieve this is to adopt a business building approach, which involves actively engaging with portfolio companies and providing them with strategic guidance, operational support, and transformational capital. Business building is not a new concept. In fact, it has been practiced by some of the most successful conglomerates in history, such as Danaher, GE, and Siemens. These diversified industrial groups have built and grown multiple businesses across different sectors and geographies, leveraging their scale, resources, and expertise.

Many pitfalls along the way

Of course, the large industrial companies – often called conglomerates – do not always get things right. History is rife with such failures, and most can be attributed to several clear problems. For example, over-centralized control within conglomerates can stifle the entrepreneurial spirit and autonomy of their portfolio companies, leading to excessive bureaucracy, micro-management, and interference that can ultimately hamper innovation and agility. Additionally, there are often cases of cross-subsidizing of businesses, leading to inefficient allocation of capital, favoritism, and support of underperforming or non-core businesses at the expense of more profitable or strategic branches. Finally, conglomerates may fall prey to hubristic leadership, characterized by overconfidence and complacency often perpetuated by charismatic or dominant leaders. This can lead to issues such as empire-building, overpayment for acquisitions, and negligence of changing market conditions.

On the other hand, we must also see that there are several tactics for business building that we can learn from as we build private markets portfolios. These include shared resources, where conglomerates provide their portfolio companies access to capital, talent, technology, and shared best practices. This enables the companies to invest in growth, innovation, and efficiency. Additionally, the conglomerates foster a strategic vision that helps portfolio companies develop and execute long-term strategies aligned with the group's objectives and values, cultivating a culture of excellence and accountability. Conglomerates can leverage their established brand and reputation to attract and retain customers, partners, and talent, bolstering their credibility and influence in the market. Lastly, conglomerates can also apply their proven business-building techniques or playbooks, such as bolt-on acquisitions, digital transformation, operational improvement, or ESG integration, to their portfolio companies for enhanced success.

A culture of excellence

Active private markets firms, like Partners Group today, in many ways resemble the large industrial firms. By adopting a transformational ownership approach, successful private markets firms can leverage the positives of the conglomerate model whilst avoiding its pitfalls. This involves tailoring the level of involvement by private markets firms with their portfolio companies based on individual needs, capabilities, and potential to strike an optimal balance between empowerment and support. Moreover, they must ensure alignment of interests among all stakeholders – including investors, management, employees, customers, and society – by prioritizing value creation through sustainable growth over financial engineering or speculation.

Finally, it's of the utmost importance to foster a culture of excellence and innovation across portfolio companies by setting high standards, promoting collaboration, and rewarding commendable performance.

Perhaps the most important contribution that a private markets firm can bring to a firm are the senior executives tasked with sitting on the boards of portfolio companies. In contrast to public markets, where board members meet on a quarterly basis to approve strategy, board members in a private markets owned business are expected to contribute significantly to the day to day running of the firm. These individuals come with a high level of experience – often as former C-level executives in high performing firms – and work closely with management to drive transformational change in these companies.

The transformational ownership playbook

One concrete example of these lessons in action is PCI Pharma Services, a provider of outsourced pharmaceutical services that Partners Group acquired on behalf of our clients in 2016 and sold in 2020, and the successful transformational ownership playbook we developed during the period to successfully transform this firm into a global leader. Over the course of our ownership, we expanded the firm in high-growth, high-value capabilities, and services categories, focused on operational excellence and digital innovation, and led a talent transformation – leading to an EBITDA increase of 15% over our ownership. We remained a minority owner after our sale in 2020, as we believed in the continued potential of this firm and this field. Recognizing that this strategy would apply to other similar firms, we invested in

Athens based pharmaceutical company Pharmathen in 2021 and are applying a similar playbook to transform this firm.

At Partners Group, we have been applying this transformational ownership approach to our portfolio companies for over 25 years, creating value for our investors and society. We believe that business building is the key to unlocking the potential of private markets and shaping the future economy. So to return to the question of why I would leave a successful career in industry to join a private markets firm – I don't see this as a career switch. In fact, I see it as moving to the vanguard of business building, where experienced colleagues from various industries and I can implement all the lessons from a career in industry across a wide and diverse portfolio with all the advantages of a nimble and fast-moving active owner. Private markets today are focused on funding well-established businesses, working with management teams to develop companies, and generating value through natural expansion and outstanding performance. ■

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Viktor Prokopenya
Founder
Capital.com



How Fintech Can Aid the Transition to a Greener Planet

The human capacity for world-changing innovation is a priceless treasure. At a time of worrying change, it will inevitably define our response to the challenges our planet now faces.



Historic advancements in human health and prosperity were entirely dependent on our ability to innovate. Earth's diverse civilisations all have one thing in common: they constantly developed through problem-solving, forging new paths to explore and ideas to inspire billions.

This development brought many benefits but came at an immense cost.

The planet is warming at an unprecedented rate and human activity is the principal cause. Atmospheric gases are trapping the Sun's energy inside the life-giving bubble that protects Earth. Oceans are getting warmer. Ice sheets are shrinking. Glaciers are melting. NASA calls these statements "established fact".

Yet, global warming isn't occurring just because NASA says so. It is as a result of a verified mass of indisputable scientific evidence assembled from ice cores, tree rings, satellite surveillance and a host of precision instruments. Did I mention the benefits of innovation?

Major change must be achieved

So how do we tackle a problem of this scale and implement the changes required to rectify the climate catastrophe?

As history has shown, great change is only possible when the behaviour of a critical mass of society shifts and is sustained over time.



To see this in action, I am reminded of Henry Ford and his promotion of that new-fangled beast called the automobile. “If I had asked people what they wanted, they would have said faster horses,” he said. At the dawn of the 20th century, Ford ushered in a transport revolution and one of the most fundamental changes to human behaviour.

People were quick to spot the benefits of his new invention and adjust their habits accordingly. The affordability, comfort, speed, and freedom of movement the automobile offered led to a groundswell in consumer appetite to purchase a new vehicle, with a total of 16.5 million sold.

With benefit comes unintended consequences. Henry Ford could never have imaged that the exhaust emissions of hundreds of millions of cars that steadily replaced the simple horse-and-buggy could be so damaging.

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The cycle of human innovation is evergreen

But the cycle of human innovation is evergreen; each new problem presents a quest to develop a new solution – the electric car.

Of course, there are teething problems with the EV revolution which we are witnessing today. The range is limited compared to fossil fuel equivalents. The recharging network is barely adequate. You can only really consider electric if you can afford one, or if you have regular access to charge points.

Yet, again, people are enamoured with the latest innovation. Whilst they could buy a new fuel-based vehicle, even a better one in terms of range or affordability, a new determinant factor is driving their purchasing behaviour – sustainability, and the desire to contribute toward a greener future.

This desire is reshaping the global automotive industry. Take Tesla, growing from nothing to become the highest capitalised automotive manufacturer in the world, and the eighth most valuable company by market. As Tesla took the EV from concept to must-buy item, competitors have become motivated, or forced, to take notice and invest in electrification.

Tesla shows how ordinary people and investors clearly made their voices heard on finding solutions to the climate crisis. They can, and should be, considered as a central force driving the climate revolution.

The rise of ESG Investing

In a similar vein, the innovation of online banking was another transformative movement and the “Model T moment” of the financial services industry. The democratisation of banking, credit and investing through user-friendly platforms helped millions of people get access to cash and enter the marketplace.

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Trading and investing have always been determined along a well-established fulcrum: the pursuit of profitability and the careful balancing act towards risk. Yet, just as in the automotive sector, the established fact of climate change is causing sustainability to rise as a key decision-making factor for investors. As people look to drive the more environmentally friendly vehicle, people are increasingly choosing to back more sustainable companies when they choose to invest.

This behavioural shift has driven investors, especially younger generations, towards ESG investing to ensure their capital supports the greater environmental and social good.

After years of excitement regarding the potential of ESG investing, however, the current outlook is more muted. The green finance revolution is grappling with a wider political backlash against “wokeness” in the business community, coupled with an emerging body of evidence that suggests ESG investors see poor returns. This has led many to relegate ESG to a “niche” within the wider financial services community. Some even call for its abolition.

This is both wrong and short-sighted. The established fact and gradual behavioural changes of today's investors remain unchanged. On the contrary, this shift is accelerating with an increasing focus and clarity on the energy transition and a push for a net zero economy.

ESG rating as a decision-making tool

At Capital.com, we are following the demands of the investor community of today and tomorrow through a small innovation of our own: providing additional ESG data and information to help traders make more informed decisions about their investments.

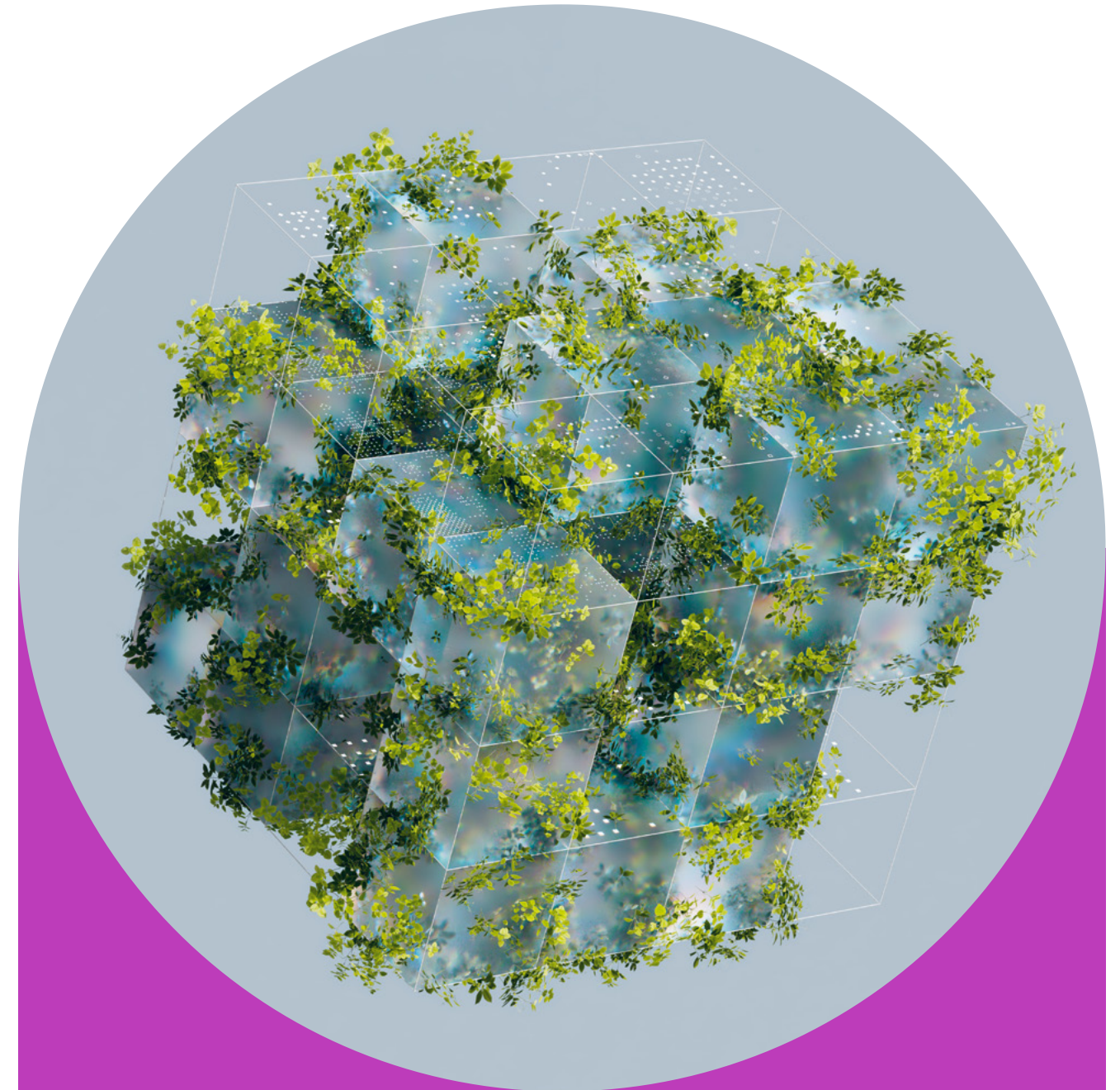
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Through these ESG ratings, investors can compare their options and craft their investment strategy to focus on the companies which are adapting and innovating to respond to address the climate crisis. In the long term, this can suggest higher value for shareholders.

The pace of innovation offers a myriad of ways to refine ESG investing strategies. Artificial intelligence will support investors in processing and assessing the immeasurable quantity of data to make more thoughtful investment decisions. New developments in blockchain also offer the ability to verify ESG data to ensure the authenticity of a corporate ESG report, or a score they are assigned.

Whilst none of these innovations are the 'silver bullet', together they further empower investors to make better decisions. The innovative spirit that permeates the digital world is today our best hope of saving the planet. ▀





Benedikt Sobotka
CEO
Eurasian Resources Group (ERG)
Co-Chair
Global Battery Alliance (GBA)

Although the pace of global mineral extraction has increased significantly since 1960, the energy transition could be imperilled by a lack of investor confidence in emerging markets.

Braving the Next Frontier for the Mining Industry



As the world looks to the policies required to achieve the green energy transition, the vital role of critical mineral exploration is under the spotlight more than ever before. All of us tasked with helping to achieve this transition needn't look too far into the past to find key learnings about the importance of environmental, social, and corporate governance (ESG) in metals exploration.

One such example occurred in Panama in 2012, when the country's then President, Ricardo Martinelli, had a difficult decision to make. Following his inauguration in 2009, Panama's economic growth was in good shape underscored by rising foreign investment, a growing trade portfolio and operative utilisation of the Panama Canal.

One year after taking office, Martinelli announced plans to spend more than US\$20bn to build ports, expand its main airports, and attract international investors to the Latin American nation¹. However, despite strong growth forecasts, by early 2011, residents were mobilising against Martinelli, looting shops, and blocking the Pan-American highway, all in protest against a new investor-friendly mining law.

Resistance against the exploration

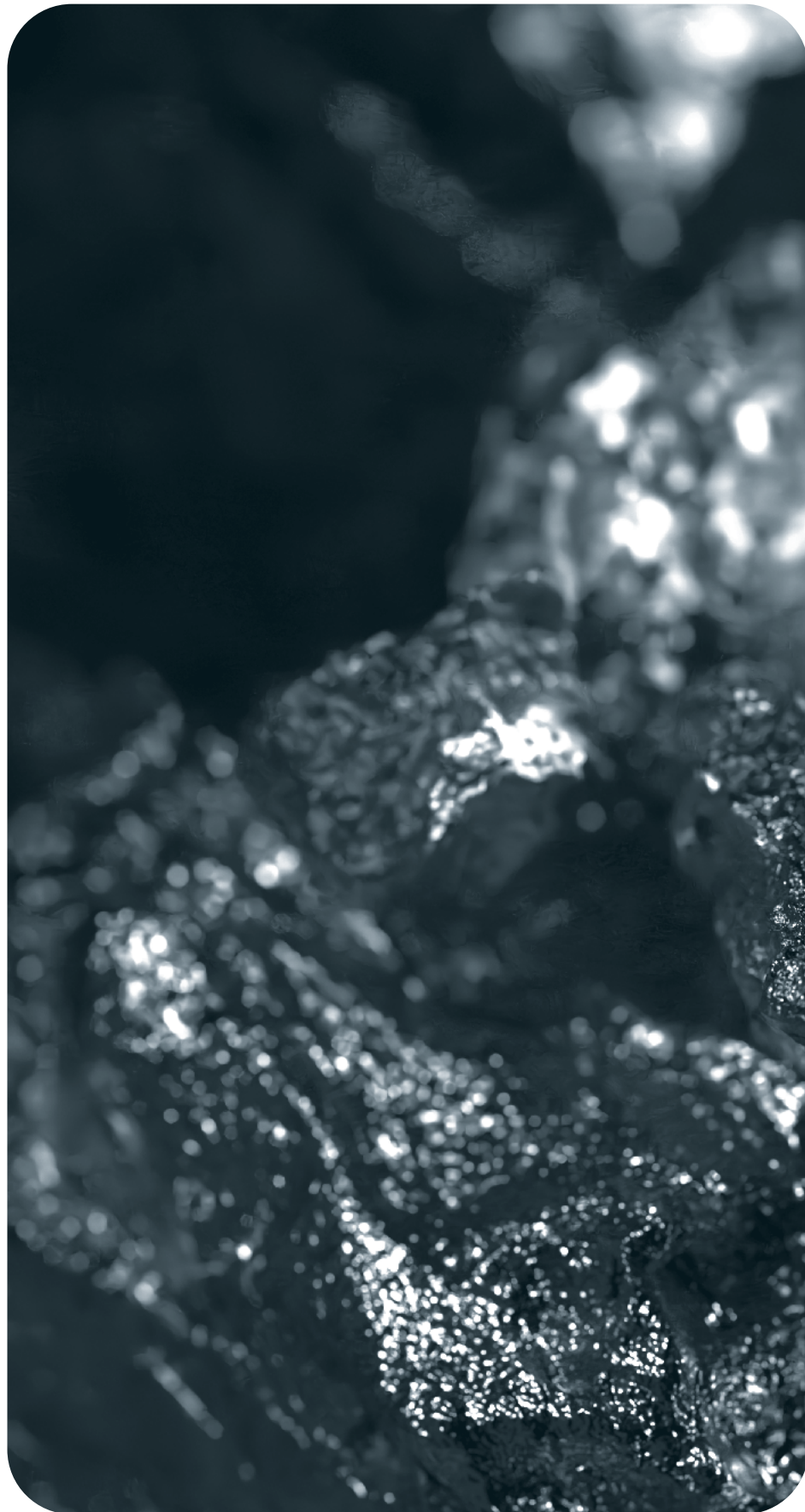
It is not widely known, but Panama is home to Cerro Colorado, one of the largest underdeveloped copper deposits on earth². Martinelli's government, keen to press home this advantage, fought a campaign extensively in favour of copper extraction, but to little effect. So how would Martinelli build consensus? Indigenous communities were deeply concerned about the social and environmental impacts of mineral exploration far more than the potential benefits this exploration could bring.

¹ "Panama to Sign Tax Agreement With U.S. Treasury" Mark Drajem and Eric Sabo, Bloomberg, November 18, 2010

² <https://mrdata.usgs.gov/sir/20105090z/show-sir/20105090z.php?id=210>

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By March 2012, following a year of resistance by indigenous communities, Panama's mining legislation passed through its congress with significant revisions. Ngobe Bugle natives – with whom Martinelli reached an accord – lobbied to ensure that new mineral exploration licences were to be struck out, and previously agreed concessions with mining companies would be cancelled. All future mining and hydroelectric projects would now require the consent of indigenous authorities. "With this law, we guarantee the security of our natural resources; the Ngobe Bugle people will be the ones who decide what will be done with these resources," stated Rogelio Montezuma, a Ngobe Bugle leader central to the negotiations³. To this day, Panama's Cerro Colorado deposit remains untouched – any exploration licence will require the consent of the Ngobe Bugle leadership.

A cautionary tale

This experience still resonates, many Panamanians remain opposed to the mining industry. In November 2023, Panama's High Court ruled that a 20-year concession granted to a Canadian mining firm was unconstitutional, citing fears from the local population who said the open-pit mine threatened water supplies.

The tale of Panama's mining industry is a cautionary one – it illustrates how failure to engage and address all stakeholder requirements and concerns right from the get-go risks projects failing all together. Indeed, the consent and buy-in of host communities is vital for successful mineral exploration, and no project can or should proceed without it. The tension between growing mineral demand and the

³ International Forestry Review, 2017, "The hidden layer of indigenous land tenure: informal forest ownership and its implications for forest use and conservation in Panama's largest collective territory"; D.A Smith, N.B Holland et al

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uncertainty of being able to supply the minerals required for key energy transition technologies is growing. And with unexplored or underexplored regions being the most likely viable source of the minerals, we must ensure that the concerns and priorities of local people are addressed. Host communities should be profiting partners in any new mining endeavour and mining companies must commit to truly responsible and sustainable practices. Yes, responsible mining is comparatively expensive. However, stalemates are far more costly in a world that is running out of time to meet the demand for critical raw materials and no longer tolerates unjust, unethical, and unsustainable practices.

New frontiers

According to a 2022 World Bank report, the energy transition will require an estimated USD1.7 trillion in global mining investment, amounting to the largest purchase order in history for responsibly produced metals⁴. In this regard, in October 2023, Evy Hambro, global head of thematic and sector-based investing at Blackrock (the world's largest asset manager) railed against the reticence towards mining from asset managers and investors: "If people don't give this sector a chance, then the energy transition is going to be impeded by the scarcity of materials to build everything required; this energy transition is starting to expose some weaknesses in that kind of complacent attitude."⁵

⁴ "Mineral-Rich Developing Countries Can Drive a Net-Zero Future", The World Bank, June 6, 2022

⁵ BlackRock warns investor disdain for mining threatens green transition" – Harry Dempsey, the Financial Times, print edition, Monday October 30th, 2023

At present, there is a dangerous disconnect between metals appetite and the pace of new mining projects. Despite promising news from the International Energy Agency (IEA) that investments in critical minerals development rose by 30% and exploration spending by 20% in 2022⁶, investments mostly occurred in low-risk, developed economies, such as Canada and Australia. And here lies a critical problem. While we must welcome investors to the mining industry, they must also be encouraged to be bolder, to be braver, and to look further afield to developing, 'frontier' nations around the world.

Of course, there are very natural concerns for investors when considering their support for new exploration ventures in emerging economies. On many occasions, frontier countries suffer from social inequalities, antiquated infrastructure networks, and unstable business climates. While it is impossible to tackle all these problems at once, with the right approach it is possible to drive forward social and legislative change, ensure the socio-economic upliftment of local populations, and foster economic growth, FDI and job creation.

Take, for example, our company, Eurasian Resources Group (ERG), which has brought significant investment to the Democratic Republic of the Congo (DRC) – a frontier economy.

Short- and long-term needs

Since its incorporation in 2013, ERG has invested more than US\$9bn in the country, generated more than US\$2bn in taxes, and created around 10,000 jobs. Our CSR

⁶ IEA (2023), World Energy Outlook 2023, IEA, Paris <https://www.iea.org/reports/world-energy-outlook-2023>, License: CC BY 4.0 (report); CC BY NC SA 4.0 (Annex A)

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contributions in 2022 totalled US\$7.8mn, including projects under our Community Development Plan Agreements [Cahier des Charges]. These projects are developed and agreed upon in active consultation with our host communities, to address their short- and long-term needs. Depending on the priorities and maturity of the community, the projects range from infrastructure development, health care, education and agriculture, to job creation, protecting human rights, and interconnected initiatives which stimulate the local business ecosystem. ERG intends to invest a further US\$2bn in the country within the next two years knowing that our efforts are helping to change the lives of thousands of people. According to data from the World Bank, real GDP growth in the DRC is expected to reach 6.8% in 2023 – thanks to the investment and commitment of responsible partners like ERG.⁷

Mobilising investment in clean energy in emerging economies is never easy. Importantly though, we must remember not to look at this challenge through the prism of a 'saviour complex'. No one party can enable the energy transition without strategic global partnerships. Investors should be working with a broad range of local and international stakeholders, to install frameworks that not only foster the development of mining and metals projects in frontier regions, but also to ensure that these initiatives align with the ESG standards of developed nations. By taking joint responsibility, investors and governments can transform challenges into opportunities, turning potentially high-risk investments into sustainable, compliant, and profitable ventures. At ERG, we are staunch believers in collaboration and partnerships that ensure the material demands for critical raw materials to support the green energy transition are met in a sustainable manner.

⁷ [worldbank.org/en/country/drc/overview](https://www.worldbank.org/en/country/drc/overview), Sep 25, 2023



Mining is the future

The mining industry today has never been more important. You might be reading this on your phone, or on a laptop – only possible thanks to the mining sector. Almost everyone these days has a little bit of cobalt, lithium, copper, or zinc in their pockets or at their fingertips. Modern technologies, from critically important electric vehicles to wind turbines and battery storage systems, are entirely reliant on the production of critical metals by the mining industry. In this respect, our industry is one of the most important on planet. And while our industry still suffers a bad reputation due to its legacy, it is central to the long-term vitality of the global economy and clean energy production.

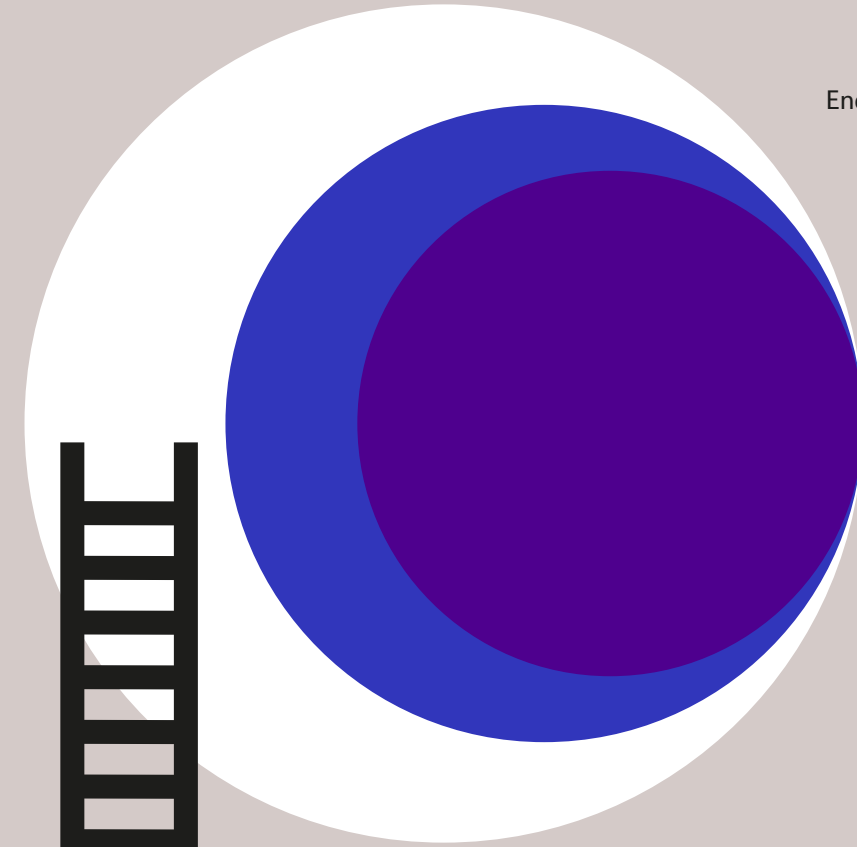
When we think about the lessons from Panama, what conclusions do we draw? My experience from being both the CEO of ERG and co-chairing the Global Battery Alliance – the largest multi-stakeholder consortium in the energy storage space – has taught me that only by joining forces can we achieve the policy aims of the Paris Climate Accords. There is no longer room for inaction, nor is there time for prolonged deliberation. We must do whatever we can – working in lock-step with governments, business, local communities, NGOs and other actors – to ensure that no frontier is left unexplored, and no opportunity is missed. Local people must benefit financially and socially from mining projects, and every effort must be made to significantly reduce the impact on the environment. The platforms to enable this exist and continue to evolve and become more efficient through ongoing innovation and collaboration.

Now is the time for investors to realise that supporting responsible mining companies, and injecting capital into developing the source industry (without which the downstream value chain of the energy transition and modern living cannot exist) is the only way build an equitable and better future for all. It can be done, but it requires a mind-set shift, and trading in short-term gains for sustainable, long-term value – monetarily...and otherwise. ■

Catalyzing Energy Sector Excellence Through Cultural Evolution in Türkiye



Kıvanç Zaimler
Energy Group President
Sabancı Holding



Embarking on my journey with Stern Stewart, I am immersed in a riveting exploration of how cultural transformation profoundly influences the performance of energy companies in Türkiye.



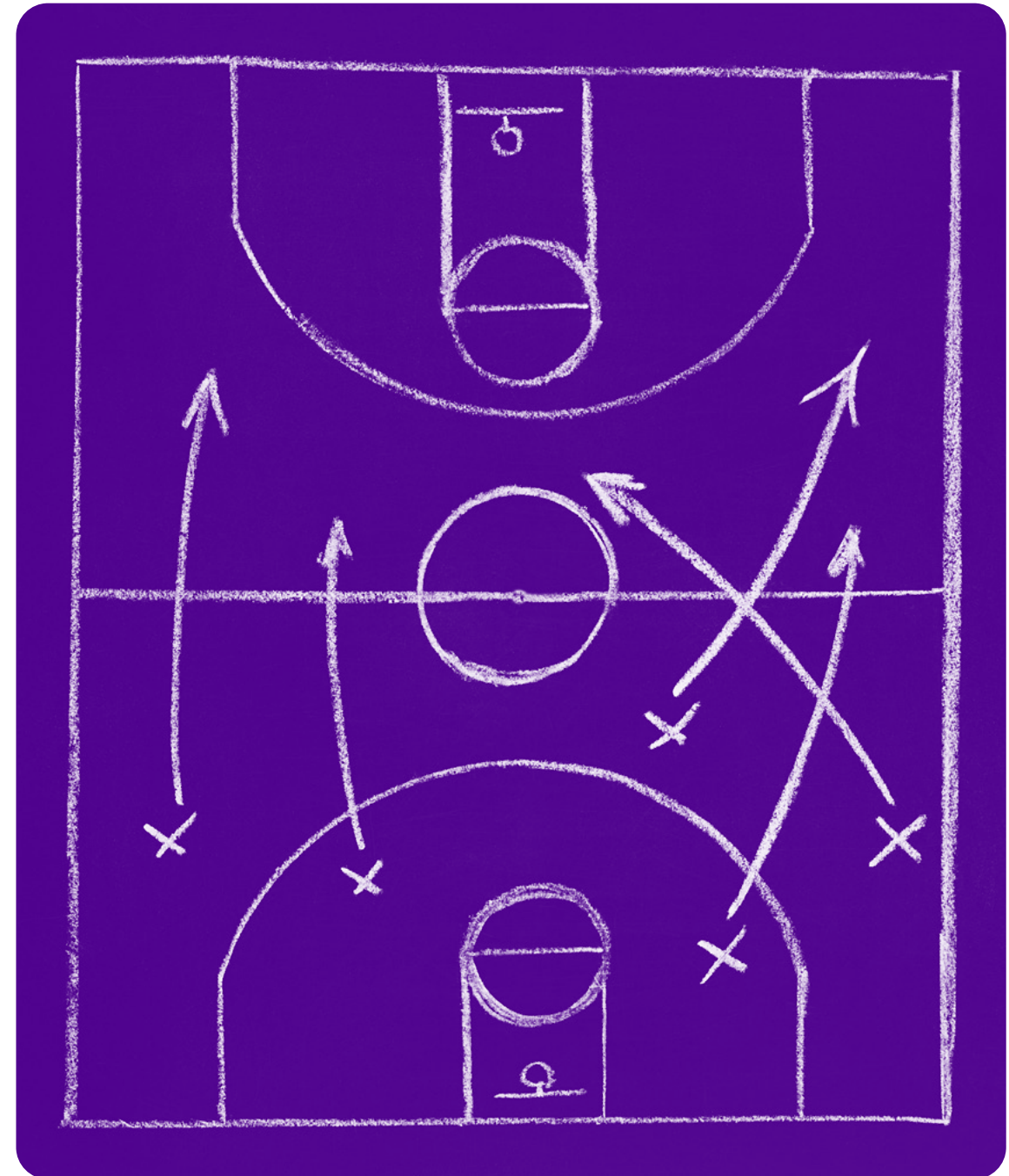
This journey is not just about business metrics; it's a narrative of how these companies are navigating and adapting to the seismic shifts in the global energy landscape. Let's unravel the intricate layers of innovation, sustainability, and team dynamics propelling remarkable progress in Türkiye's energy sector.

In the context of Türkiye's energy sector, the transformation of the market has been crucial. Over the past two decades, Türkiye has transitioned from a state-dominated energy market to a more liberalized and competitive landscape. This shift began with the Electricity Market Law in 2001, initiating the privatization of electricity distribution and generation. The establishment of the Energy Market Regulatory Authority was a significant step, overseeing market operations and ensuring regulatory compliance. The liberalization process accelerated with the introduction of a day-ahead market, facilitating more dynamic pricing and investment in diverse energy sources. This transition has not only increased the efficiency and reliability of energy supply but also catalyzed private sector involvement, fostering innovation and competitiveness. As a result, Türkiye's energy market now showcases a blend of state and private entities, with an increasing focus on renewable energy sources, in line with global sustainability trends. This evolution represents a broader narrative of the country's economic and industrial maturation, reflecting its strategic position as a bridge between Europe and Asia in the energy sector.

As Türkiye's energy sector evolved towards a more liberalized market, Enerjisa companies have been the key players in driving this transformation. Our proactive approach in adopting new technologies and business models has not only aligned with the changing market dynamics but also set new standards in the industry. This strategic positioning reflects our commitment to innovation, sustainability, and customer-centricity, marking Enerjisa brand as a leader in Türkiye's journey towards a modern, sustainable energy landscape. This success comes from our cohesive management style inspired by a successful sports team approach.

Sports-inspired management in energy

A decade ago, as a former professional basketball player, I engaged in a thought-provoking dialogue with the coach of the Turkish national team. His insights into the parallels between sports and business management were enlightening. He emphasized the importance of harmony and strategic adaptability, akin to a well-rehearsed basketball team facing diverse opponents. This perspective has been instrumental in shaping our approach at Sabancı Holding, especially in our energy investments through Enerjisa companies. We manage one of Türkiye's largest electricity distribution and retail companies,





serving nearly a quarter of the country's population, and a major electricity generation company with a formidable installed power capacity. Our recent venture into the U.S. renewable energy market signifies our strategic portfolio diversification. Despite outward similarities with other companies in the sector, our management style, akin to a cohesive sports team, sets us apart, fostering a culture of innovation and efficiency.

Foundational success principles

Our corporate ethos is built on two unwavering principles. First, we maintain strict compliance with legal, regulatory, and ethical standards, ensuring our operations are transparent and responsible. Second, we are relentless in our pursuit of improvement. Believing in the endless potential for better performance, we continually challenge the status quo, propelling our companies to new heights.

Digitalization as a strategic lever

In an industry traditionally not associated with technological agility, our approach mirrors that of a cutting-edge technology firm. Digitalization is central to our success story. By pioneering digital solutions in areas beyond regulatory mandates, we have not only streamlined our operations but also created alternative revenue streams. Our initiatives range from enhancing customer experiences to optimizing grid management and generation. The culmination of these efforts is a portfolio of digital services, some already enhancing global energy markets, with others poised for imminent launch. This digital-first mindset has yielded a new business paradigm, augmenting our traditional energy operations.

Agility and team dynamics

Our organizational structure is distinctly agile, enabling swift decision-making and goal achievement. This agility is complemented by a culture that celebrates successes, reinforcing team bonds and acknowledging collective accomplishments. Over the past five years, our unwavering focus on transformation and innovation has led to a consistent upward trajectory in our performance metrics, cementing our status as Türkiye's most significant renewable energy investor.



Shaping the Turkish energy market

The Turkish energy market, characterized by its intricate dynamics and diverse stakeholders, requires a nuanced understanding to navigate successfully. Recognizing the occasional convergence of differing stakeholder interests is key to sustainable growth. Our companies carry a significant responsibility in shaping the nation's energy future. We balance Türkiye's energy security needs with our commitment to economic efficiency and environmental sustainability. Our operations stand as a testament to our dedication to the global energy transition, ensuring that our progress aligns with broader efforts to combat climate change.

A young, dynamic workforce

Our workforce, with an average age below 35, embodies our commitment to innovation and digital solutions. In an era marked by rapid technological advances, our team is well-equipped to tackle the challenges and seize the opportunities of the energy transition. Addressing the potential brain drain to Europe is a priority. We have commercialized our in-house digital solutions, successfully entering international markets and fortifying our position in the competitive U.S. market. This strategic move not only retains talent but also showcases our confidence in Türkiye's potential.

In the wake of the pandemic, we ensured a secure environment for our workforce, adapting to their needs both during and post-crisis. Our approach to remote work eschews rigid structures, instead granting employees the autonomy to balance between office and remote settings at their discretion. This level of flexibility is a testament to the trust we place in our team. Moreover, the company's growth post-pandemic is a clear indicator of our employees' reliability and commitment to their roles and responsibilities.

Proactive talent development

Our commitment to nurturing young talent is unwavering. Our retail, distribution, generation and trading companies each have tailored new graduate hiring programs, providing structured development journeys for our young professionals. This approach ensures a continuous infusion of vibrant, innovative minds into our talent pool, invigorating our workforce and reinforcing our future-readiness.



THE TURKISH ENERGY MARKET, CHARACTERIZED BY ITS INTRICATE DYNAMICS AND DIVERSE STAKEHOLDERS, REQUIRES A NUANCED UNDERSTANDING TO NAVIGATE SUCCESSFULLY.



Renewable energy strategy

In the U.S. renewable energy market, we employ an underdog strategy, rapidly expanding our footprint and exploring cutting-edge energy and climate technologies. Our generation company in Türkiye boasts a substantial renewable energy capacity, with several more projects in the pipeline. Our energy retail company is committed to providing renewable energy solutions, aligning our corporate trajectory exclusively with renewable energy. This focus not only enhances our operational efficiency but also aligns our goals with global sustainability efforts.

Venture capital for clean energy innovation

Beyond our direct operations, we have established a venture capital firm to invest in technology-driven clean energy startups. This initiative provides these startups with much-needed capital and strategic guidance. By fostering a supportive ecosystem for clean energy innovation, we contribute to their growth and development, facilitating the adoption of new technologies in Türkiye and beyond, thereby contributing to the nation's sustainable future.

Conclusion

Our journey transcends traditional business paradigms, uniting Türkiye and the global community in the pursuit of a sustainable future. At the core of our endeavor is our exceptional team, driving our success and thriving in an environment that fosters innovation and growth. As we navigate the evolving energy landscape, our cultural transformation and adaptability have not only propelled us to a leading position in Türkiye's energy sector but also garnered global recognition. Our unwavering commitment to excellence and compliance, coupled with our innovative spirit, has reshaped our companies and Türkiye's energy future. In this era of energy transformation, we stand as a testament to the power of innovation, teamwork, and a commitment to a sustainable, prosperous future. ■

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TRADITIONAL BUSINESS
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The Power of Infrastructure

Embracing e-Mobility

We have the infrastructure to charge electric cars. Now we need electric cars on the road...

Andreas Schell
CEO
EnBW



At EnBW, one of Germany's leading energy companies, we see firsthand the transformative power of technology and innovation in the energy sector. One of the most significant changes we are seeing is the rise of e-mobility. This is not just a trend, but a fundamental shift in the way we think about transport, mobility and energy use. The electrification of private transport is one of the most important levers for effective climate protection and long-term independence from fossil fuels. If everyone can not only consume energy, but also produce and feed it back into the grid, consumers will become prosumers and we will become less dependent. In this way, consumers are actively driving the energy transition.

E-mobility is already part of our daily lives

When you run a marathon, the last third is the part where you really get going. You have found your own rhythm, you have run a good part of the race, but there is still a long way to go. This also applies to the state of the energy transition in Germany. We are in the middle of it. But when we talk about energy system transformation, politics, business and society tend to think and talk about it as a necessary but distant futuristic aspect of our lives – as if we were still at the very beginning of this marathon or still standing at the starting line. But the energy transition is not just in the future, it is happening now.

This is especially true of e-mobility. For example: Let's think about children who are now about 10 years old. Yes, they know about petrol cars. Yes, they may have sat in one. But when they are old enough to learn to drive, they will learn to drive in an electric car, not a combustion car. There is no way around it. Energy-powered mobility is the only option we have to ensure mobility beyond the car and at the same time achieve the necessary reduction in CO₂ emissions in the mobility sector. So the overarching question is not whether, but how and how fast we get e-mobility across the finish line.

E-Mobility must become mainstream

Two key aspects are crucial:
1) an international charging infrastructure and
2) electric cars on the road.

In Germany, we already have a powerful charging network that can easily serve the more than one million electric cars currently registered in Germany. In fact, it could serve many more, but there are not enough cars using it.

As part of the energy industry, energy companies and car manufacturers need to help people understand that e-mobility is already suitable for everyday use. Numerous studies have shown that once people have an electric car, most of them are very happy with it. But there are still many reservations about buying an electric car. This is where we have to start. The first step is to consistently demonstrate that we have the right, high-performance infrastructure in place. In September, we were the first company in the German market to reach the target of 1,000 EnBW fast-charging stations across the country. This is a great and necessary achievement.

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SCEPTICISM AND
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BETWEEN ALL
STAKEHOLDERS AND
SPEEDY PROCESSES.

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We also need to show that charging an electric car is a simple part of everyday life. Charging needs to be tailored to everyone's needs. This means that customers will find charging facilities in public places such as motorways, supermarkets and DIY stores, in cities as well as at work or at home. Charging comes to the customer, not the other way around. With more than 3,500 fast-charging points in public areas, EnBW has already installed Germany's largest fast-charging network and we are continuing to build more. Our goal is to increase this number almost tenfold by 2030.

Targets need to be revised and approval hurdles lowered

All these figures are important, and we must continue to develop our infrastructure to fill in the remaining "white spots" on the map and boost people's confidence in e-mobility. But one thing is clear: in the long term, the number of charging points will not be the decisive factor for widespread e-mobility throughout Germany. What is important is the performance of the charging points. We need fast

charging points with high performance. We are aiming for up to 400kW per charging point, which will allow a range of up to 400km to be recharged in fifteen minutes. By focusing on high-performance charging across the board, the still-discussed target of one million charging points in Germany by 2030 becomes obsolete. In fact, it is just over a tenth of that.

Beyond consumer scepticism and outdated discussions, building the infrastructure for an e-mobile future worth living for everyone also requires close cooperation between all stakeholders and speedy processes. But all too often, approval processes still take a lot of time and effort. On average, it takes a year from application to completion to build a fast-charging station. At any one time, we have around 100 fully equipped sites waiting to be commissioned by the network operator. It is clear that we need to speed things up considerably.

Let's get e-mobility across the finish line and into the mainstream

E-mobility represents a paradigm shift in transport, signalling a move away from fossil fuels to more sustainable energy sources. As an energy company, our role at EnBW is no longer limited to the generation and supply of electricity. When it comes to more sustainable mobility, we are part of a larger ecosystem that includes car manufacturers, technology companies, city planners, retailers and, most importantly, consumers. This is exciting, and we should start to recognise and embrace it as such - especially when it comes to aspects as personal and liberating as our own mobility.

So let's keep three things in mind when we talk about e-mobility:

- 1) e-mobility is the key to achieving climate goals in the transport sector,
- 2) there is no alternative to e-mobility, and
- 3) e-mobility is ready for everyday use.

Let's accelerate towards the finish line. ▶

Europe's Relationship with Africa:

Much of the world is in a moment of geopolitical realignment and transition. The arrival of the middle powers in the Gulf; the increased influence of China across the South East Asia and Pacific regions; a more divided United States; and a decoupled Europe from a dependence on Russia have caused political and corporate leaders to reexamine their long term strategic alliances and relationships.



Brad Staples
CEO
APCO Worldwide

A Shift in Mindset is Needed



New partnerships are being sought after making fresh opportunities for deeper investment and for establishing trusted trade relations a premium. Within that upheaval and realignment lies a moment for European businesses to reexamine the opportunities now existing in a diverse range of stable, democratic minded economies in sub-Saharan Africa. And European industry needs to move fast.

Since antiquity, Africa and Europe have held an interdependent relationship – one which at times has been deeply troubled, complex, and driven by exploitation. But the importance of Africa to Europe has never been doubted.

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THE DEPTH OF RESOURCES
ACROSS AFRICA – FROM
RAW MATERIALS TO HUMAN
CAPITAL – MEANS IT
IS EXTREMELY WELL
POSITIONED TO ATTRACT
FOREIGN INVESTORS FROM
STATE BODIES AND
CORPORATIONS.
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Today we see the growth of opportunities in energy, next gen renewables, health-care, extractives, as well as new frontiers in technology and innovation, creative industries, consumer goods, and telecommunications. The depth of resources across Africa – from raw materials to human capital – means it is extremely well positioned to attract foreign investors from state bodies and corporations.

Progress makes investments attractive

Several factors are causing many global businesses and state enterprises to rethink their investment strategy and approach to Africa. The increased stability in many economies has been supported by significant improvement in good governance; successes in the ongoing fight against corruption; and improvements in the rule of law and public transparency all create an attractive environment, especially for Western business. Improvements in these areas and the resulting growth in GDP attract foreign businesses which crave stability, regulatory certainty, and transparent governance. It is by no means perfect, but progress has been rapid and consistent.

Several sub-Saharan states are already creating a vibrant and attractive economic landscape for those foreign investors. Botswana, the Seychelles, and Cabo Verde lead the way with anti-corruption scores which rival EU member states. Established democracies in Ghana and Namibia combined with impressive economic growth in Rwanda and Cote d'Ivoire all create strong fundamentals for greater investment and potential partnerships. The traditional African powerhouse economies of Nigeria and South Africa continue to drive forward opportunities for consumer and manufacturing growth, while investing in technological and innovation hubs.

Europe needs to up its game

We are seeing companies search for the new clusters in next generation technology, education, and innovation which are springing up across the continent. Rwanda's Kigali Innovation City, Kenya's Konza Technopolis and the thriving fintech landscape in Nigeria show the potential being unlocked. Regional forward thinking policies like visa free travel as part of the African Union 2063 Vision will lead to greater interconnectivity and opportunities for businesses in multiples market.

The strategic position of the continent in providing key raw materials for a host of critical international industries remains a core attraction for investors, especially for China, Russia, and soon India which is deepening its own ties on the continent. Europe needs to up its game.

With the fragmentation and realignment of global trade, Africa has more leverage than ever to choose its partners. Increasingly turning from Western and international institutions' conditionality for financial assistance and partnerships, in the last decade African economies have turned to others, notably Chinese suitors, who have been more than happy to supplant Western investors. Although dropping to its lowest level in years, China's Belt and Road Initiative has injected \$155 billion into African infrastructure projects over the past decade. The Asian Infrastructure Investment Bank has recently begun financing projects in Egypt and Rwanda, in lieu of the World Bank/IMF.

Turning away from Europe to Russia

This year Indian corporates have pledged \$14 billion in new investments targeted at petrochemicals, renewables, steel, and telecommunications sectors. Financing from the GCC is focused on energy, finance, telecommunications, and infrastructure tapping into growing opportunities in sectors it knows well.

A more assertive African continent has changed the narrative where it can, seizing on the multipolar world to its advantage.

Mali, Chad, Central African Republic, and Niger have ended their often decades long European security partnerships. Those states have turned instead towards Russia and its mercenary groups, providing swift and more violent solutions to internal and regional security threats. In stealing a geopolitical march on Europe and the West, the Russians, Chinese, and Middle East economies have sparked a race for economic favour in capitals across Africa and access to many burgeoning economies.





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SURGING INNOVATION AND
KNOWLEDGE CAPITAL
AMONGST YOUNG AFRICAN
GENERATIONS, SUPPORTED
BY STABLE AND MORE OPEN
SOCIETIES FROM COTE
D’IVOIRE TO KENYA, AND
FROM ZAMBIA TO MOROCCO
MEANS INVESTORS CAN
DRAW ON EDUCATED AND
CREATIVE WORKFORCES.
”

Africa has taken a place at the centre of many Western and Asian economies through the provision of raw materials and precious minerals – Congo alone supplies 70% of the world’s cobalt supply, while Namibia is the third largest supplier of uranium in the world. But the opportunities today and in the future extend far beyond raw materials and extractives as the only drivers of economic growth.

Africa’s emerging generation

While further oil and gas discoveries help Botswana, Namibia, and Mozambique to attract established Western and prospective Gulf business partners, renewable energy powered by new technologies has the potential to reshape global energy strategies. Development and investment in agriscience could change the face of food production. Surging innovation and knowledge capital amongst young African generations, supported by stable and more open societies from Cote d’Ivoire to Kenya, and from Zambia to Morocco means investors can draw on educated and creative workforces.

There is a vibrancy and energy across African business development which a new multipolar world is engaging with, and what African businesses need are partners not benefactors. This is the opportunity Europe and its investors need to take.

A shift in mindset in engaging with Africa is already taking place, but Europe needs to accelerate its thinking. It must shape its vision to accommodate this new Africa and secure licenses to operate for its own investors and businesses. Or Europe risks being permanently left behind. ■

...On a Multi-dimensional Path to Net-Zero

In this interview conducted by John Deferios at the MENA Climate Week 2023, Amin Nasser, CEO of Saudi Aramco, shares insights on the company's role in the global energy transition. The discussion focuses on the transformation of the transportation sector and the need for integrative strategies to achieve sustainable energy goals. Nasser sheds light on decarbonization efforts, the challenges of introducing hydrogen and the importance of a balanced approach.





John Defterios
Award-winning Journalist



Amin Nasser
CEO
Aramco

J.D.: One of the things that I think has changed dramatically Mr. Nasser, is that there has been a shift in the recognition of how energy needs to be supplied. Do we have an overshoot post-pandemic and in the rush to renewables? And how do you see the role of oil and gas in the energy transition?

A.N.: The renewable energy sector is showing significant growth, but from a low base. Today, it accounts for almost 5% of primary energy. As we came out of COVID, it wasn't enough to handle the growth in demand so prices started going up. Conventional energy continues to be the primary product. It constitutes almost 95% of what's available. The oil and gas industry, while growing, continues to decarbonize its existing resources while building new ones. In the last 15 years alone, the industry has been able to save about 80–90 million barrels of oil equivalent due to efficiency improvements. Additionally, solar and wind has introduced almost 15 million barrels of oil equivalent.

J.D.: Dr. Sultan Al Jaber, COP28 President, has said that we need to decarbonize by over 43% by 2030. What does that mean for Aramco and how are you trying to decarbonize?

A.N.: Today, at Aramco, our upstream methane intensity is around 0.05%, while the global average is around 0.36%. In CO₂ equivalent per barrel, we're about 10.3 kilograms per barrel of oil equivalent, while the industry average is around 38. Looking ahead to 2030, we're involved in hydrogen (currently blue hydrogen), renewables, carbon capture and storage, and eFuel. We have also launched a sustainability fund of about \$1.5 billion. In our 2022 sustainability report, we announced that by 2035, we will lower the carbon intensity in methane and CO₂ down by a further 15%, eliminating around 52 million tons of carbon emissions, while also reaching net-zero in Scope 1 and 2 by 2050.

J.D.: In the energy trilemma between security of supply, affordability, and climate mitigation, do we have the balance about right? Do you think the narrative has changed on oil and gas?

A.N.: I think we're seeing a much more balanced approach from certain world leaders on the transition, a recognition that we need to build the new before we discard the old. You need to continue to invest and make sure you have reliable supply. Developing and developed countries have different priorities, requirements, and needs. Developing countries haven't met their basic needs yet, while the developed world has. Without affordability and security of supply, we cannot achieve sustainability.

J.D.: Are you concerned about the divide between the Global North, which wants to aggressively pursue a climate agenda – and rightfully so – and the Global South? With over 2 billion people in the Global South that don't have access to energy on a daily basis, are you concerned about the energy exclusion narrative that's emerging?

A.N.: A one-size-fits-all approach will not work. The transition will be multi-speed, depending on the economic maturity of each country. The priority in the Global South is to ensure that the basic needs of the population are met. Support from developed and rich countries to developing countries is a must in order to ensure a just transition that meets global needs.

J.D.: What are your thoughts on hydrogen?

A.N.: Hydrogen is very important. It will be part of the energy mix over the long term. The issue with hydrogen currently is that it requires incentives, and it's very difficult to sign offtake agreements given the high price. Blue hydrogen is about \$200 to \$250 per barrel of oil equivalent. Green hydrogen is about \$400. Customers can't absorb that cost. They need government incentives. At the same time, you can't scale up until demand materializes because the existing infrastructure is costly. Some customers are saying: We'll wait for 2030, because by then it'll be less. Well, it's not going to be less until you scale up first.

The bottom line is: I think hydrogen will be part of the energy mix in the future. It's a clean energy that needs to be available for the world. However, it's going to take longer for full deployment.

J.D.: What market signals are auto-makers getting today, and how does that affect your decision making?

A.N.: Certain countries have announced planned shifts to electric vehicles by 2035, however there will still be a lot of internal combustion engine vehicles. Our Aramco Research Center in Detroit is dedicated to improving the efficiency of internal combustion engines and advancing game-changing transportation technologies. We're also working with auto manufacturers. Everybody talks about the 30% share of electric vehicles in China this year [in 2023], but that still leaves a remaining 70% of internal combustion engine vehicles entering the market. We need to focus on improving the performance and efficiency of these engines to make them able to compete with electric vehicles on emissions, over the full life cycle.





Don't forget, a lot of electric vehicle growth is in areas dependent on coal. So 70% of the power generation that's feeding these electric vehicles is coming from coal. We need to be balanced; we need more electric vehicles but we also shouldn't let go of internal combustion engines. We need to improve their efficiency until they are phased out.

J.D.: Are we making a mistake by not looking at the totality of emissions today, and abatement in the farming or building sectors?

A.N.: There is no doubt that a lot of other sectors aren't receiving the right attention in terms of their emissions and what needs to be done. The hard-to-abate sectors of aluminum, steel, and cement, for example, account for about 20% of total emissions. You can't really solve the problem there without carbon capture and storage. So CCS isn't for our industry alone. It's for the power plants that use coal, oil, and gas. The hard-to-abate sectors need CCS. You can't do blue hydrogen without CCS.

J.D.: Do you think direct air capture has potential?

A.N.: Direct air capture right now is very expensive. However, we believe it has a lot of potential in the future. You can extract CO₂ from the air, but you also need CCS to store it. We believe direct air capture will work, but it'll take more time and more research, innovation, and technologies to bring the cost down. Today, the cost is prohibitive, unless you have huge incentives as some companies in the US do, due to the Inflation Reduction Act.

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WE BELIEVE DIRECT AIR
CAPTURE WILL WORK,
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J.D.: According to the latest IRENA (International Renewable Energy Association) report, maintaining the 1.5°C target will require investment of \$5 trillion a year. Where is that money going to come from?

A.N.: We need to be realistic about the timeframe and funding. We're willing to build the infrastructure, but we need the offtake, the buyers. We've tested the market with blue hydrogen, which is half the cost of green hydrogen. It's very difficult to secure offtake. We're doing the engineering for the project, so the project is going to happen, hopefully, but it's very difficult. We're talking about a limited amount – 150,000 barrels of oil equivalent of blue hydrogen – and it's proving difficult to find an offtake for that.

Countries will have to determine by how much they can afford to make this happen. That's where setting a realistic time-frame is critically important. Unless you're willing to wait for innovation technologies to kick in and reduce the cost, this is how much it costs today.

J.D.: This industry has had a lot to contend with. You have been hit by attacks, such as in 2019 at the Aramco Abqaiq processing facility, we had a pandemic, the Russia-Ukraine conflict, inflation, and the energy transition. What is it like as a CEO today trying to manage these extreme complexities?

A.N.: You need to ensure you have a good team and the right talent to manage these types of situations. But ultimately, you need to always focus on the long term. Things in the early years might sound difficult, but if you look at the long term, you'll find out it makes sense.

This is a 90-year-old company. We've been through so many things, but we've built the systems and the reliability. We're proud that during COVID we maintained 99.9% or 99.8% reliability. During the attacks, we had 6,000 people ready and available the next day, knowing exactly what to do. You can't do that if you wait for something to happen and then say: "What do I need to do now?". You have to identify vulnerability in your systems, address them, and execute accordingly.

J.D.: How would you apply that to ensuring a just energy transition?

A.N.: You need to make sure you have the resources, the funding, and the people who can execute it. Otherwise, you end up with a lot of difficulties and bumps along the way. If you want to do it right, you need to make sure it's a realistic timeframe. You need to take into consideration the emerging economies and their needs, this must be a multispeed transition.

The energy transition needs to happen right across the world because otherwise you end up doing the right things for some regions but not for others. Affordability, lack of resources, and lack of funding need to be considered.

This is what happened with coal. Over the last 15 years, coal has grown by 13%. If we want to do the right thing, we need to put in place the right plans. That is why you need industries that have experience and expertise to have a seat at the table, otherwise it's going to be difficult to implement the energy transition and successful measures to ensure we maintain the 1.5°C target. ▀



The Stern Stewart Institute Annual Summit 2023 Review

2023 was dominated by many worries and fears. And even if no one could have hoped that the many crises and armed conflicts that the world faced in the previous year would suddenly disappear, many may at least have hoped that no more would be added.



Instead, in 2023, the world faced multifaceted global challenges spanning geopolitical tensions, ongoing conflicts, and the lingering impacts of the COVID-19 pandemic. The Ukraine crisis keeps straining relations between Russia and the West, while the South China Sea remains a geopolitical flashpoint. The Middle East contends with persistent conflicts, notably the Syrian war, the brutal attack on Israel by the Hamas, and the resulting fighting for the Gaza Strip.

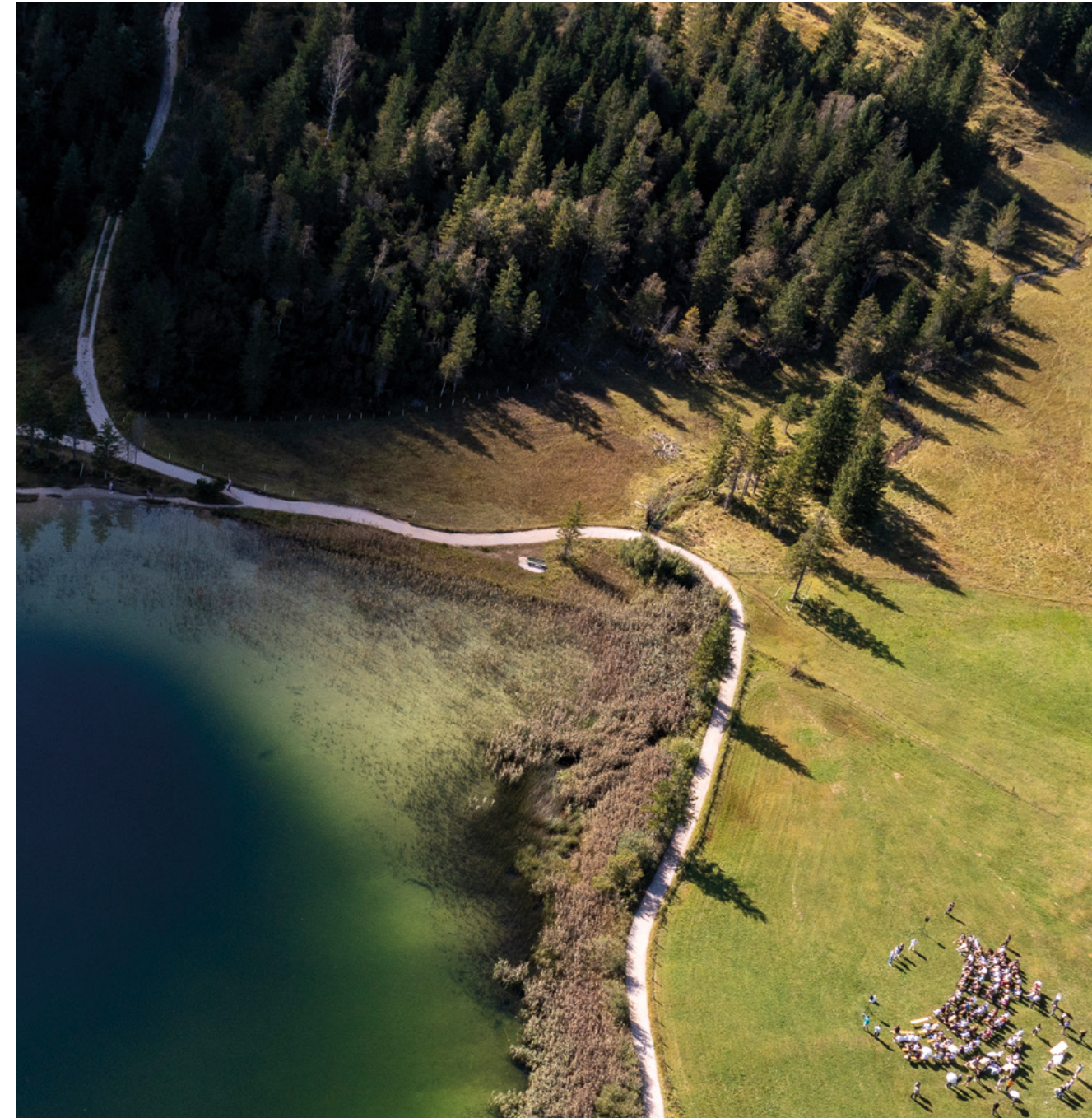
Economically, the aftermath of the pandemic reverberates globally, with supply chain disruptions and inflation affecting nations' economic recovery. Cyber threats and disinformation campaigns underscore the evolving nature of security, demanding international cooperation. A series of natural disasters, such as several severe earthquakes, floods, and hurricanes, also claimed tens of thousands of lives. And quite a few of these disasters have been linked by science to the climate crisis, which has also lost none of its urgency.

The following selection of just a few of these topics is intended to be representative of the enormous variety of subjects that was discussed at the Summit. The open discussion between so many brilliant minds has perhaps never been as important as it is today. The Stern Stewart Institute is once again honored to have been able to provide a stage for discussions on all these issues and many more with its Annual Summit.

No risk, no fun – How to do business with our Asian frenemies?

The discussion about how to deal with the West's Asian trading partners – among which China undoubtedly plays a special role – is nothing new. However, the war in Ukraine and the closer military and economic bonds between Putin and Xi make the question of how to deal with them even more urgent. It seems clear to all involved that the west doesn't want to repeat the same mistakes they made with Russia – a far too strong dependence on Russian raw materials. Even if Chinese policy may appear more predictable and less aggressive than Russian policy on the surface, the expansive nature of Chinese investments in the Global South and in key areas of European infrastructure cannot be overlooked.

The resulting conclusions put forward by our discussion participants ranged from pointing out the major changes within the Chinese economy in recent years (centralization of decisions, bureaucratization, even more state control); the recommendation not to disregard other Asian countries, as some of them are growing faster than China – Thailand and Vietnam in particular were mentioned; and finally, the shared acknowledgement that it will not work without China. Dealing with the superpower will increasingly become a balancing act: Or, as one of the panelists aptly put it, not whether to deal with China but “how” to deal with China.

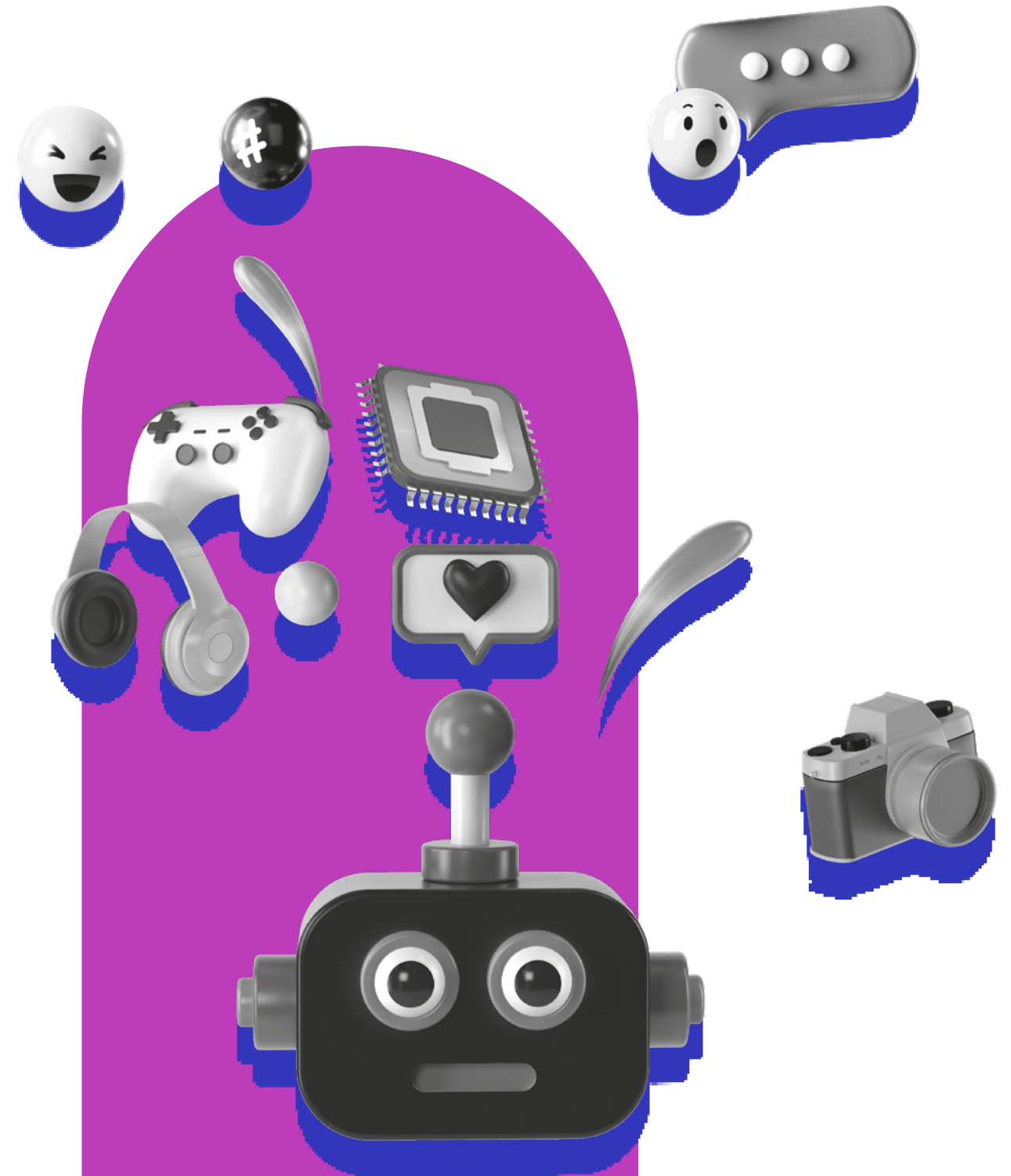
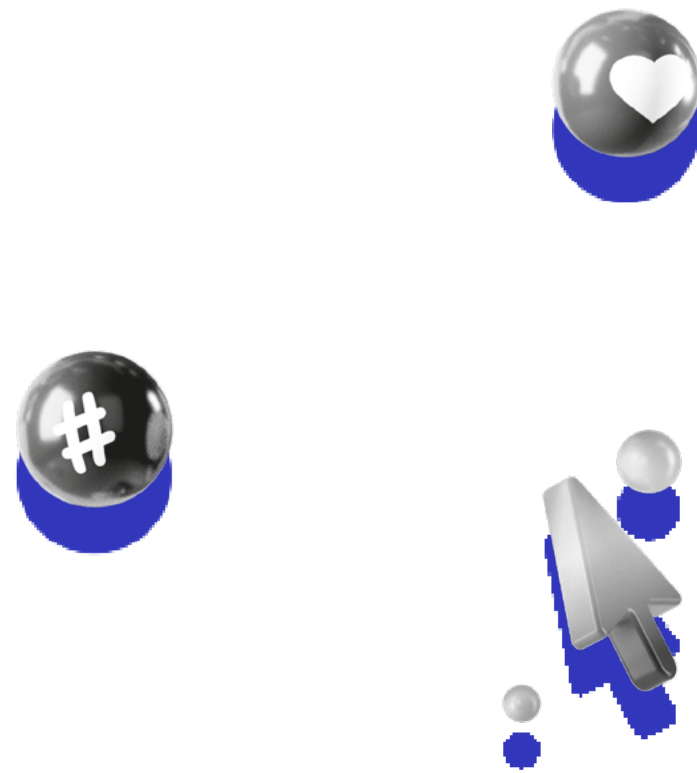


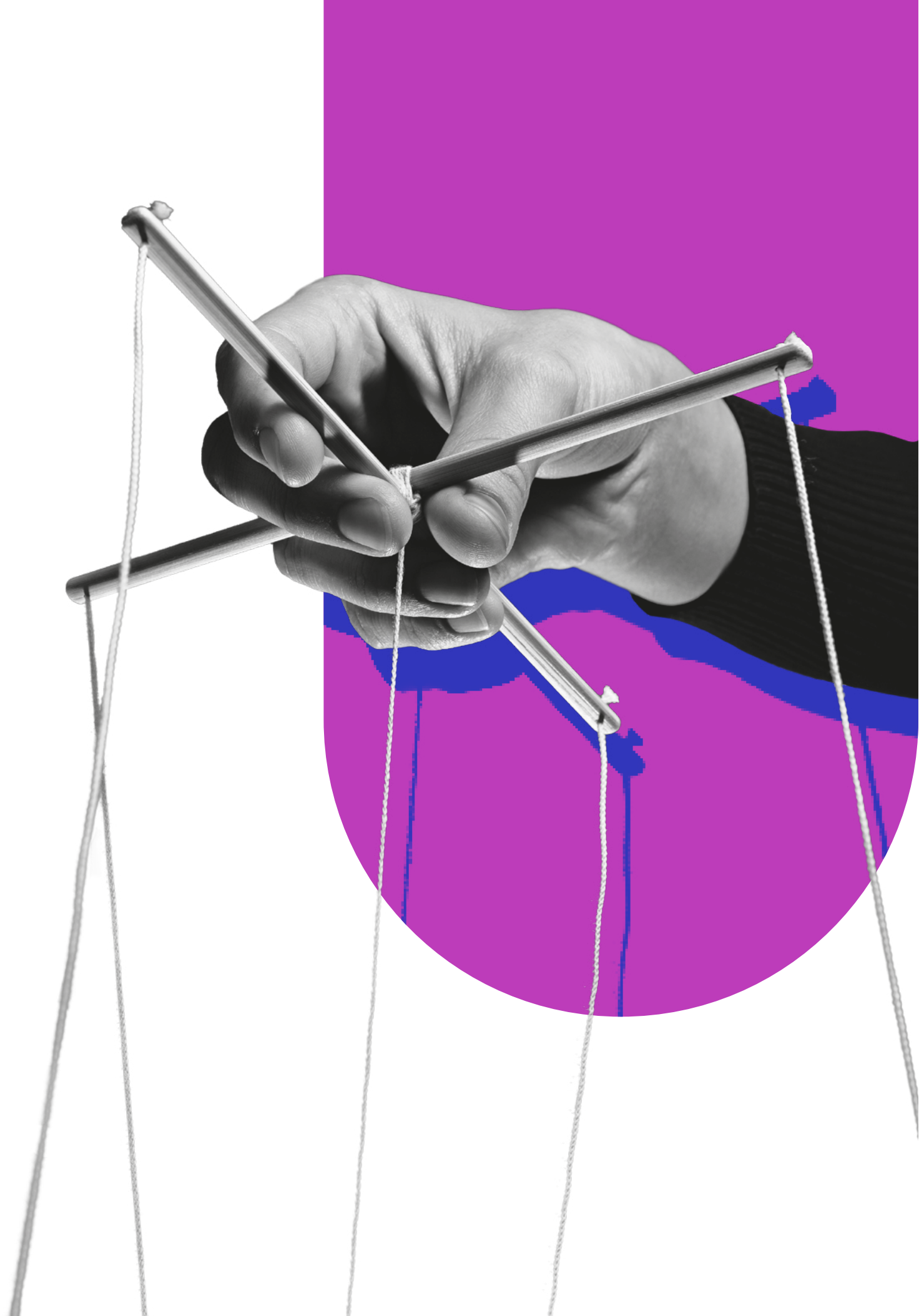
TikTok, Meta, ChatGPT... What are the skills our children need to survive in all worlds?

Ever since the first PISA study almost a quarter of a century ago, people have been arguing about how to counter the at best average to poor performance of German pupils in international comparison: is the federal fragmentation of competencies in the education sector responsible? Is there a need for greater centralization?

All of these debates have been enriched by new questions in recent years, particularly those relating to the correct use of the internet in general and social media in particular. And what conclusions can be drawn from the arrival of artificial intelligence in the classroom? What will the exams of the future look like?

Above all, the discussion showed that these are questions that arise in all countries. The fascination with social media is already leading to drastic personality changes in young people and is associated with phenomena ranging from a lack of empathy to addictive media use. It therefore seems logical that not only the school system, and therefore politicians, must be held accountable, but also that all parents must become even more aware of their responsibility not to let their children mutate into digital zombies. The key concepts of the future are creativity and authenticity. Only if society as a whole succeeds in giving the new media and all the great technologies associated with them the place they deserve – that of useful and helpful tools in both the private and professional spheres – can children and young people once again be taught vital values and skills without which they will not be able to meet the challenges of the coming decades: Attention, empathy, creativity and media literacy.





The age of revisionism – Why are democratic institutions and even facts so vulnerable?

The rise of radical ideologies in almost all Western democracies is part of a trend that can be observed worldwide: the apparent strength of autocratic systems serves many opponents of Western liberalism as justification for their attacks on democracy. After all, if billions of people live in totalitarian systems, can everything about these governments be bad and wrong? However, it is not only the growing interdependence of all states on each other that makes the democratic deficits in distant countries more noticeable to the West and requires companies to react ever more quickly and consistently. Pressure from environmental and democracy activists and the omnipresence of social media are demanding a new sense of responsibility, even for issues that have long been avoided.

Several participants in the discussion pointed out that the core issue is a crisis of confidence in democratic institutions. The once respected political office has suffered and is increasingly reviled. Social media acts as an echo chamber for a multitude of anti-democratic voices; fake news emanating from Russia and China further contributes to this destabilization; however, the softening of traditional categories of scientific truth is also facilitated by advances in artificial intelligence. In a keynote speech, the speaker pointed out that it is ultimately up to the people themselves to better equip themselves to deal with AI. The more sophisticated the technical possibilities for creating new realities in text and images become, the more people must learn not to accept everything as true and authentic. Several participants also encouraged those responsible in politics and business to take responsibility and pay more attention to the issue, including a willingness not to accept hate messages and distorting lies and to clearly commit to a fact- and science-based approach to research findings.

Taiwanese blackout – How to prepare for the biggest single risk event to industry?

It seems that the coronavirus pandemic, with its catastrophic consequences for the global economy, has not only shown mankind the dark side of globalization with its high degree of interdependence, but also how ill-prepared the world is for such events, which can mutate from an initially local phenomenon to a global catastrophe in no time at all.

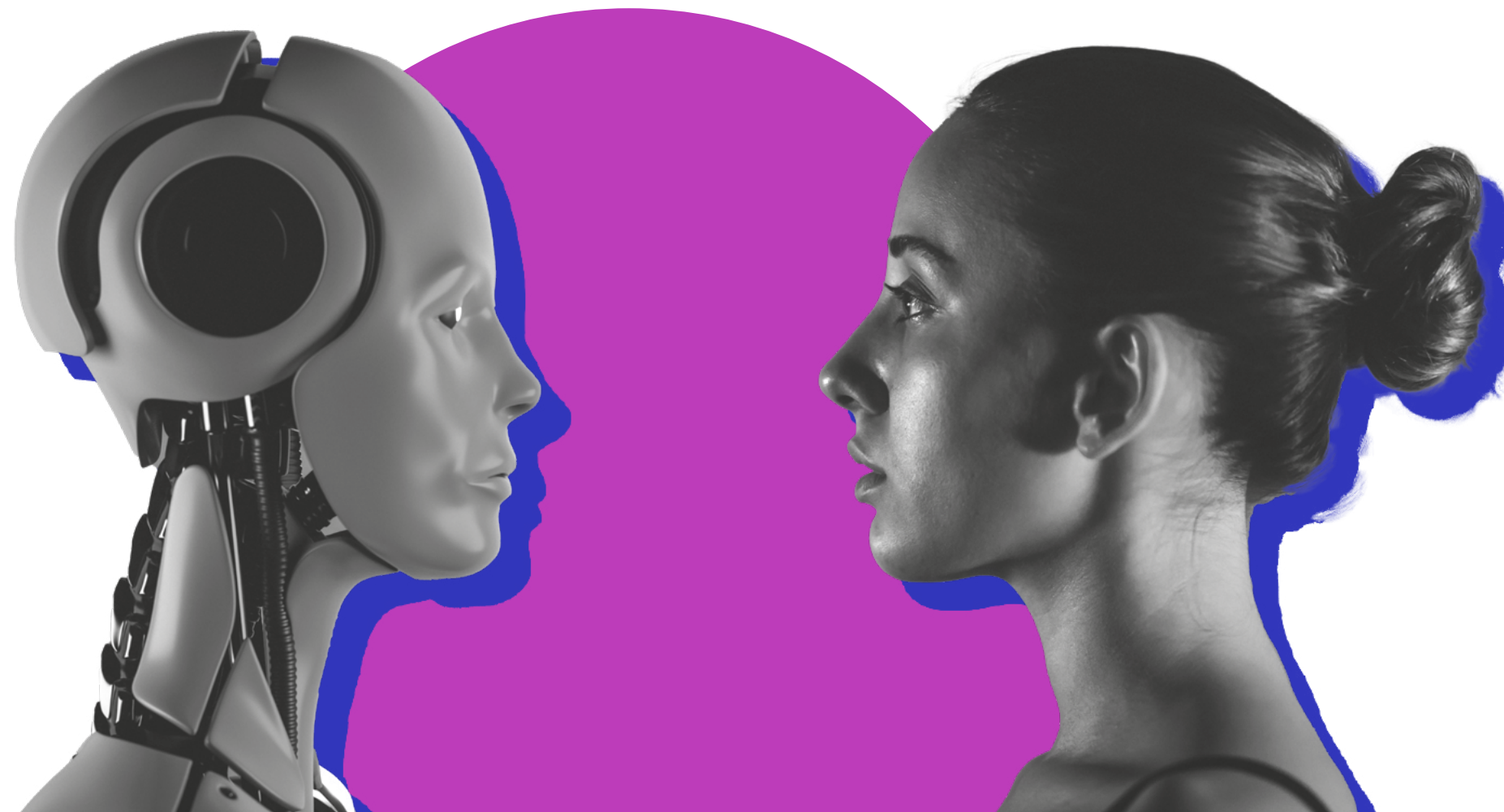
One of the disaster scenarios that has been discussed more frequently recently is the possible collapse of the Taiwanese semiconductor industry. Its share of the global market is estimated to be at least 70 percent, with the giant TSMC alone producing more than half of all semiconductors installed worldwide. It is easy to imagine how far-reaching the consequences for the global economy would be if this much-needed “raw material” were to disappear because of an attack by China on Taiwan (or even just a blockade of the island).

There was a consensus that every conceivable effort would be needed to prepare for a Taiwanese default. In the opinion of several participants, this included above all greater efforts by all countries to become more independent in the long term through their own innovations and deregulation. In contrast, further decoupling from China alone would hardly be effective. In this context, it was also noted that China is also interested in good cooperation with its sales markets in the West.

AI out of the bottle – What does it mean to be human in tomorrow’s corporate world?

It is difficult to say exactly when artificial intelligence went from being the topic of science fiction movies to a real technology that might far from shaping everyone’s lives, but which realistically will do so in the foreseeable future. The most visible moment for the public that AI will be a force to be reckoned with, was the launch of ChatGPT by Open AI. Capital infusions from Microsoft and access to the group’s infrastructure turned Open AI from a barely known nerd lab into an 86-billion-dollar start-up in just a few months. Suddenly everyone was talking about AI, and everyone knew that everything would be different from now on. As early as May 2023, a group of scientists and managers – including ChatGPT inventor Sam Altman – compared the risks of AI with those of nuclear war.

It therefore comes as no surprise that the call heard most frequently on the panel was for international regulation of AI in the near future. This is even though there seemed to be a consensus that it is difficult to predict when and how exactly AI will affect the economy and people’s lives. However, one participant pointed out in his contribution that AI will ensure that authentic human communication will find it increasingly difficult to prevail over artificially generated communication. It is possible that this will lead to a renaissance of direct personal interaction. And that might not be the worst prospect. ▀



About this publication

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