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FINANCE AND TECHNOLOGY UNPACKED

MODERNA
What's next,
post-COVID?
Interview with
the CEO

SUPPLY CHAINS
China falters

SMALL CAPS
Opportunities
up for grabs

DOSSIER

2023 TECH READY TO ROCK

These firms remain attractive
despite tumultuous markets
+++ Interview with Bracken Darrell,
CEO of Logitech



> DATADOG > NICE SYSTEMS > CLOUDFLARE > TWILIO > ZSCALER > ASML > INFINEON

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Let there be rock



By Marc Bürki,
CEO of Swissquote

Does it make any sense? We have built a feature story around technology firms, while the sector this year has experienced one of the most spectacular stock market downturns in its history, and giants such as Amazon and Meta are making thousands of employees redundant. Investors who survived the dot-com crash in the early 2000s might, understandably, be worried that an even more violent collapse is to come.

But as one interviewee quoted in our feature correctly notes: that was then; this is now. The stocks that sank in 2022 are hardly debt-laden startups with shaky business models. They are firmly grounded, high-growth companies that are otherwise sitting on a mountain of cash.

The decline in tech stocks should be interpreted in the broader context of the economic crisis, as the rise in central bank interest rates has hit the sector particularly hard. However, we mustn't forget that prices shot up in 2021 and that they could only inevitably come tumbling back down.

This is another episode that may feel to investors like a déjà vu of the 2008 crisis. But again, the economic context is not that of those days. One noteworthy argument suggesting that the current crisis will be less severe is that corporate balance sheets are considerably cleaner, especially at banks. For example, today the cash flow per share of S&P 500 companies (the index of large US listed companies) is about three times higher.

At the same time, debt levels in many countries have risen significantly, leaving less fiscal leeway should a severe recession occur. Geopolitical risks are also more acute.

There is no guarantee that the worst is behind us, but our selection of **companies** has the credentials to endure, and to shine. Many of them operate in cloud services and cybersecurity, two sectors that are likely to grow dramatically over the next 5 to 10 years. There is no stopping progress. May the adage serve as a compass in these troubled times.

Let's rock 2023!

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HAPPY SPORT
Handcrafted in Ethical Gold

Chopard

THE ARTISAN OF EMOTIONS – SINCE 1860

SCANS



INTERVIEW



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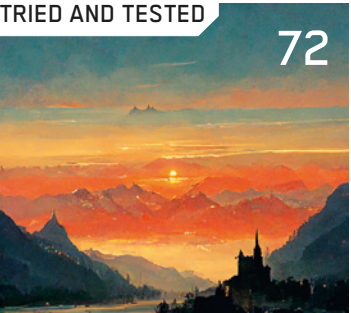
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TRAVEL



TRIED AND TESTED



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SCANS

regulation

BRUSSELS BOOSTS SUPPORT FOR DRONES

The European Commission adopted its Drone Strategy 2.0 on 29 November. Its aim is to develop drone services (deliveries, transport, rescue, surveillance), while supporting synergies between civilian and military industries. Unmanned aircraft systems are currently proving so effective in military operations in Ukraine that one might forget that the drone services market is also booming. For example, Wing (owned by Google's parent) began testing drone delivery in Dublin in October. Although available on a limited scale, Wing's drone delivery service has already been used to deliver more than 300,000 parcels in the United States, Australia and Finland.



GIORGIO VIERA / AFP

Hurricane Ian leveled entire neighbourhoods, and destroyed power lines and bridges when it hit the southwest coast of Florida in late September. Here, the damage on the island of Matlacha.

reinsurance

SWISS RE AT THE MERCY OF CLIMATE CHANGE

Natural disasters caused or exacerbated by climate change have unleashed a record number of claims against the reinsurer Swiss Re this year. Over the first nine months of the year, \$2.7 billion in natural catastrophe claims were filed with the Zurich-based group, which ended up in net losses of \$285 million. This colossal amount covered disasters such as Hurricane Ian, which destroyed sections of Florida at the end of September. Other weather events include flooding in Australia and hailstorms in France. Climate change is now a top concern for insurers, according to a survey published by Axa. — SREN

ecology

THE MOST AERODYNAMIC AIRLINER



SWISS employees install AeroSHARK film on a Boeing 777.

SWISS has installed a new energy-efficient feature on one of its Boeing 770-300s. The technology, called AeroSHARK, is a film with ultra-thin ribs designed to cover the aircraft's fuselage. This will reduce aerodynamic drag and therefore the amount of fuel used. The coating was developed

by Lufthansa Technik in collaboration with the German chemicals giant BASF. The first aircraft fitted with the film completed its maiden flight from Zurich to Miami on 14 October. Owned by Lufthansa, the Swiss airline plans to deploy it to its entire fleet of 12 Boeing 777s. — LHA



85%

The high proportion of British homes with gas heating. Due to the poorly insulated homes, this situation makes the country vulnerable to rising gas prices.

pharma

ZUR ROSE LOSES A ROUND IN GERMANY

Online pharmacy Zur Rose has suffered a major setback in its main market, Germany. The district of Westfalen-Lippe in North Rhine-Westphalia has suspended an electronic prescription project because it threatens data protection. The plan was to extend the test to the rest of the country in 2023. This would have opened up an important new market for the struggling Thurgau-based group. Now it will have to make do with its current customers, mainly located in Germany, Switzerland and France. Last quarter, this customer base shrank, decreasing revenue by 11% to 440 million Swiss francs. Zur Rose will also face increasing competition from German company Shop Apotheke, whose revenues rose 20% in the last quarter.

— ROSE



“We will never resort to ‘flood-like’ stimulus”

Chinese Premier **Li Keqiang**, on China's slowing economy.

RANKING

THE FIVE EUROPEAN COUNTRIES WHOSE CITIZENS ARE HARDEST HIT BY INFLATION

(based on the decrease in household spending power in 2022)

UNITED KINGDOM

-8.27%

THE NETHERLANDS

-8.25%

MALTA

-7.44%

DENMARK

-6.52%

GREECE

-6.51%

Source: IMF

TOP FIVE GENERIC DRUG MAKERS (based on their 2021 revenue)

TEVA PHARMACEUTICAL IND. (ISRAEL)

\$16.7 BN

SUN PHARMACEUTICAL IND. (INDIA)

\$4.5 BN

CIPLA (INDIA)

\$2.59 BN

DR. REDDY'S LABORATORIES (INDIA)

\$2.58 BN

LUPIN (INDIA)

\$2 BN

Source: Global Data

THE WORLD'S FIVE LARGEST COSMETICS COMPANIES (based on industry sales in 2021)

L'ORÉAL

\$27.2 BN

UNILEVER

\$21.3 BN

ESTÉE LAUDER

\$11.8 BN

P&G

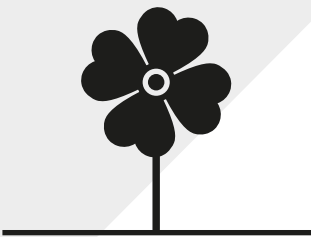
\$11.8 BN

COTY

\$7.7 BN

Source: Beauty Packaging magazine

SCANS



31%

The share of Ireland's energy consumption in 2021 supplied by wind power. In 2022, this proportion has risen to 36%. Lying in the course of Atlantic winds, the small island country aims to generate 80% of its energy from renewable sources by 2030. Ireland then hopes to export some of the power to the rest of Europe.

transport

AUTONOMOUS TRAINS ON THE RIGHT TRACK



Deutsche Bahn (DB) and Siemens' autonomous train during a demonstration in Hamburg, 11 October, 2021.

First there were metros and trams. Now trains are starting to run without drivers. In November, the French manufacturer Alstom announced that it had successfully operated a fully autonomous shunting locomotive during a test in the Netherlands. No human involvement was required in starting, driving, stopping, or managing unforeseen obstacles and events. All actions were fully automated by combining obstacle detection and recognition technology with Alstom's Automatic Train Operation system. SNCF, France's national state-owned railway

company, plans to run two prototypes starting in 2023: a freight train, developed by Alstom, Altran, Hitachi and Apsys, and another for passenger transport, developed by Bombardier, Bosch, Spirops and Thales. In 2021, Deutsche Bahn and German manufacturer Siemens held a demonstration of an autonomous train in Hamburg. Siemens says the benefits of automation are considerable: "With our technology, our customers can transport up to 30% more passengers, significantly improve punctuality and save more than 30% energy."



"I didn't do it to make more money. I did it to try to help humanity"

Elon Musk on his Twitter takeover.

e-commerce

WAR OF INFLUENCE IN SUPER-FAST FASHION



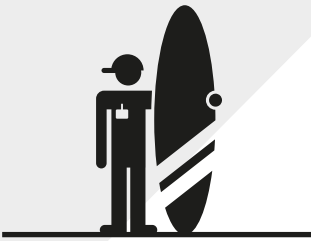
Newcomers modelled after the Shein concept have hit the market. The Chinese ultra-fast fashion platform

uses artificial intelligence algorithms to predict trends. Its products are then promoted by an army of influencers on TikTok. In 2022, Shein is expected to achieve \$30 billion in sales, ahead of Zara's operator, the giant Inditex. This success has encouraged Chinese e-commerce group Pinduoduo to launch the Temu platform, which is trying to woo Shein's suppliers with grants and has promised to invest 10 billion yuan (1.3 billion Swiss francs) to promote their products abroad. ByteDance, the owner of TikTok, has created Yooou, a website targeting European consumers.



"Every indicator we are looking at is flashing dark red"

Søren Skou, CEO of Maersk, about the global economic slowdown.



4

The number of days per week worked by 500 Unilever employees in Australia this autumn. The experiment had already been conducted in New Zealand and found that workers spend less time in meetings and are absent less often.

THE FLOP

Kanye West and Yeezy trainers

For sneaker collectors, the Yeezy line launched in 2015 by Adidas and rapper Kanye West – who now goes by Ye – was legendary. It was also lucrative, generating \$1.7 billion in revenue by 2021, nearly 7% of the German company's sales. But the collaboration came to an abrupt end in October, after the artist made a series of anti-Semitic remarks. Adidas immediately recalled Yeezy products from its stores, halted their production, asked its sales partners to remove them from their selections, and stopped paying royalties to Kanye West. The brand will continue to sell the goods under a different name but will struggle to find an audience without the star rapper.



KICKSTARTER



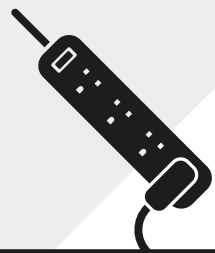
TURNING YOUR BIKE INTO AN E-BIKE

Want to boost your pedalling power? PikaBoost is trying to help you do that. This elongated contraption with its mini wheel clamps onto the back of the seat post and rests on the bike's rear wheel. Fitted with a motor and a lithium battery, the assist system helps you pedal faster. Sold for \$299, this system developed by the Hong Kong startup Livall is considerably cheaper than a conventional e-bike. The kit is easy to install and uninstall and can be adapted to different wheel sizes, meaning it can be used on a bike-sharing bike. Featuring sensors to detect speed and measure the gradient and type of terrain in real time, PikaBoost can automatically adjust the power output to the needs of the cyclist.

FUNDS RAISED
CHF 1.06 M

AVAILABLE FROM
MARCH 2023

SCANS



71%

The percentage of workstations currently occupied at WeWork's co-working spaces. That figure had fallen to 47% during the COVID-19 pandemic. Yet the recovery is not enough. The firm plans to close some 40 branches in the United States, representing 5% of its office space.



“A shock, a disappointment, a feeling of desperation and a mess”

Lionel Maitre,

mayor of Boncourt, reacting to British American Tobacco's decision to close its factory in the canton of Jura.

automobile

CHINESE ELECTRIC VEHICLES ADVANCE IN EUROPE



At the last Paris Motor Show in October 2022, half of the cars on display were Chinese. Here, the Han electric sedan, from the Chinese manufacturer BYD.

MUSTAFA YALCIN/ AFP

Over the first eight months of the year, one in 20 electric cars sold in Europe was Chinese. These eco-friendly vehicle manufacturers enjoy state subsidies and protection from foreign competition. Operating on a vast domestic market, in recent years they have been able to develop low-cost, high-quality models. And now, they are moving beyond their borders. With its generous

tax rebates encouraging drivers to buy electric cars, Norway has served as a bridgehead into Europe. This autumn, Nio, Geely and Great Wall Motors all unveiled models for the European market, which still lacks options in terms of cheap green cars. Meanwhile, BYD has formed a partnership with the German company Sixt, which will offer its vehicles for hire.

business model

DIRECT SALES STRUGGLE IN THE FACE OF COMPETITION

Independent Direct-to-Consumer (DTC) brands looked as though they had a bright future. With their business model based on selling to individuals through a website, these brands cut out costly intermediaries and physical stores and pass on the lower prices to customers. Warby Parker did it for glasses, Allbirds for trainers and Casper for mattresses. But they never became profitable and now face fierce competition. Casper now has over 175 competitors online. Giant conglomerates have also launched their own DTC products. Between 2015 and 2019, Unilever bought up 29 DTC brands. — WRBY — BIRD

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GRAFF

THE MOST FABULOUS JEWELS IN THE WORLD

SCANS

IPO

ITHACA ENERGY TO LIST IN LONDON
IN UNCERTAIN CLIMATE

The oil and gas group Ithaca Energy listed on the London Stock Exchange in early November. The IPO valued the firm at £2.45 billion, making it the largest listing in the UK this year. Founded in 2004, the group has drilling rights to six basins in the North Sea and produces the equivalent of about 70,000 barrels of oil per day. Ithaca also has stakes in the Rosebank

and Cambo fields, where production has not yet started. Oil and gas exploration in the North Sea, an expensive basin to develop, has recently become profitable again, on the back of rising prices. However, the UK government's 25% levy, slapped on oil and gas company profits in May, appears to have dampened investors' interest in Ithaca Energy. — ITH



“We will act decisively when investments threaten our national security”

François-Philippe Champagne, Canada's Minister of Innovation, Science and Industry, calling on China to divest from the country's lithium mines.

food

OCADO INSTALLS ITS ROBOTS IN SOUTH KOREA



Ocado company robots pictured in October 2021 at a company warehouse near London.

PAUL CHILDS / REUTERS

UK-based Ocado, the world's leading online food retailer, has partnered with South Korean conglomerate Lotte to provide a network of warehouses with fully automated sorting and packaging systems. The first of these is planned for completion in 2025, and five more will be built by 2028. The agreement represents a significant opportunity for

Ocado, adding to its list of big-name partnerships with the likes of Kroger in the US and Aeon in Japan. Lotte's food division generates annual revenues of 15.6 trillion won (11 billion Swiss francs) and operates over 1,000 supermarkets nationwide. In South Korea, 20% of supermarket sales are already online, compared to 11% in the UK. — OCDO



\$30 million

The value of liquorice exports from Uzbekistan, the world's largest producer. Exports have increased by 25% since 2017, thanks to tax rebates that have helped attract Chinese investment. The Central Asian country has also started processing the raw material into finished products, increasing its margins.

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THE MOST FABULOUS JEWELS IN THE WORLD

TRENDS



the figure

LAXMAN NARASIMHAN

Upgrading Starbucks

Position
CEOAge
55Nationality
American

After spending 40 hours learning how to make coffee, Laxman Narasimhan has become a certified barista. The Indian-born American business veteran, 55, wants to understand every minute detail about his new employer, Starbucks. Early next April, he will be taking over as CEO from the coffee giant's founder Howard Schultz, who has served as interim CEO since April 2022.

Having started his career at McKinsey, Narasimhan joined PepsiCo in 2012 and rose to the rank of chief commercial officer before being offered the position of CEO of the British hygiene, health and nutrition group Reckitt. At Starbucks, he will be responsible for executing an ambitious plan introduced this autumn. The goal is to reinvent the spirit of the brand by trading in its communitarian aspirations – symbolised by its role as “third place” between home and office – for speed and convenience. The new roadmap includes switching to machines that will automatically prepare certain drinks and opening additional drive-thru locations. Also on his agenda, Laxman Narasimhan will have to contend with the union disputes that are wreaking havoc in the company's US workforce and its sputtering sales in China. Starbucks' second-largest market is suffering from the government's zero-COVID policy.

the country
GERMANY

Ailing industry

Until now, Germany has had a clear-cut economic model. Abundant energy, supplied by Russia, powered the industrial economy, which produced goods – namely cars, chemicals and medical equipment – primarily sold to China, the country's largest trading partner. But since the summer, the situation has gone from bad to worse. Moscow has cut off gas supplies to Germany, while China's ultra-strict COVID-19 policy has plunged the country into an unprecedented economic downturn. The DAX, the stock market index of leading German companies, fell 27% in the first six months of 2022. Furthermore, the rise in electricity and gas prices has pummelled the “Mittelstand”, a collective term for Germany's small and medium-sized companies. A survey by the consulting firm FTI reported that one-quarter

of them have cancelled or refused orders this year. Energy-intensive industries such as chemicals and steel are also struggling. BASF has been forced to scale back production, Thyssenkrupp has lost almost half of its value since January, and Stickstoffwerke Piesteritz, an ammonia manufacturer, has had to close its plants in Saxony-Anhalt. Forecasts say that in 2023 the country's economy will shrink by 0.4%.

Population
84.4 millionGDP per capita
\$48,398Growth
+2.9% (2021)Main economic
sectors
automotive,
chemicals,
machinery,
electronics,
finance

ELETRE

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LOTUSCARS.COM

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ANALYSIS

SPECIALISTS' VIEWPOINT

INTERVIEW

Tempted by small caps

As a whole, European small caps underperformed the market in 2022. This could possibly be a great opportunity for investors.

BY BERTRAND BEAUTÉ

The year 2022 will go down in history as a terrible one for small caps. In the first six months of the year, the MSCI Europe Small Cap index, which includes European small caps usually valued at under \$2 billion, plummeted nearly 35%. The MSCI Europe Large Cap index for larger companies fell by less than 10% over the same period. The difference is not as unusual as it might appear. As *Swissquote Magazine* explained in July 2022, small caps tend to underperform in times of crisis and then significantly overperform during economic recoveries. This phenomenon could be of interest to investors, according to Franck Sabbah, head of asset management sales at Berenberg. We spoke to him to find out more...

Given the decline we saw in 2022, is now the right time to invest in small caps?

After excellent years in 2020 and 2021, 2022 was one of the worst years in terms of performance over the last 25 years. The financial markets as a whole, and the small caps sector in particular, have experienced historic losses. In this context, it could be tempting for long-term investors to seek small caps whose shares lost a lot of value in 2022.

Indeed, the recession is probably already mostly factored into market prices, which could suggest that we have already reached the lowest levels. It's also interesting to note that after such a correction, some pension funds are starting to look at market opportunities again, with increased interest in small caps. Nevertheless, it is impossible to say if the current period is a good entry point. The geopolitical situation is unpredictable.

Especially since small caps are more sensitive to the economic situation...

Yes, it is more "challenging" to invest in small caps rather than large caps. But investors need to remember that this segment is incredibly diverse. In total, there are approximately 8,000 companies listed in Europe. That's about twice as many as in the US. Most of them are micro or very small caps that aren't widely covered by analysts. The goal is to pick out the "hidden gems" in this wide variety of companies, looking for the ones which will perform in spite of the current context and whose shares will rebound accordingly. Not all small caps are affected in the same way by the economic situation.

How can you identify which small caps will perform the best?

Almost all of the small caps that performed in 2021 suffered a severe correction this year, including those which had a very healthy balance sheet. But I think that not all companies will recover in the same way. For example, a small tech company with a chronic deficit that is heavily in debt will struggle to perform. Conversely, a company with a healthy balance sheet (low debt, regular profits and strong growth) currently does have a competitive advantage. Why is that? Companies with little debt are less affected by rising interest rates. Those with strong pricing power can maintain their margins in an inflationist environment. For these reasons, I expect in the coming months to see a flight to quality, that is, a reallocation towards companies with the least amount of debt, along with strong profits and solid growth.

European small caps largely underperformed compared to their counterparts in other regions of the world in 2022. The MSCI Europe Small Caps index, for example, fell 35% in the first 10 months of the year, compared to -20% for the MSCI World Small Caps. Is it time to look beyond the European market?

European small caps performed twice as poorly this year than other small caps. And let's not sugarcoat it: the European benchmark is not ideal if we look at long-term performance. But Europe is home to some wonderful companies, with gems that could be interesting to invest in. Especially since the contraction in 2022, European small caps have become a market segment offering a very good risk/yield profile. Europe is suffering significantly from the situation in Ukraine, but it seems that the decline in share prices is more the result of an economic problem than a structural one.

How have you reorganised your portfolio in this difficult year?

The companies we invest in generally have little debt and are profitable and growing. In this difficult year, the biggest mistake would have been to protect ourselves by overhauling our portfolio and changing our approach based solely on a short-term perspective. Of course, we made a few adjustments to our Small Caps fund, but not much more than we have in other years. We maintain a long-term vision: over approximately 10 years, the small caps that we choose have solid growth.



FRANCK SABBABH
ASSET MANAGEMENT
BERENBERG

Small caps
Sales Items

Crypto Chronicles

The ECB lashes out against BTC

The European Central Bank came down hard on bitcoin in a blog post, saying the token is on the “road to irrelevance”. That gave rise to a string of sarcastic remarks among fans of the digital currency.

BY LUDOVIC CHAPPEX

The cryptocurrency market is in an indescribable mess. In short, the situation came about on 8 November with the collapse of FTX – then the second-largest crypto exchange platform – and the revelation of its chief Sam Bankman-Fried’s outlandish antics. A few days later, the announcement came that the Bahamas-based company was bankrupt. The news rippled through the industry, clawing down other players linked in one way or another to FTX or its FTT token with it. Other exchange platforms have even filed for bankruptcy.

It was amid this somewhat chaotic environment that the European Central Bank (ECB) decided to publish a harsh critique of bitcoin on its blog on 30 November. The title – Bitcoin’s last stand – sets the tone. The authors, Ulrich Bindseil and Jürgen Schaaf, respectively director general and Adviser to the ECB, open with an attack: “For bitcoin proponents, the seeming stabilisation signals a breather on the way to new heights. More likely, however, it is an artificially induced last gasp before the road to irrelevance – and this was already

foreseeable before FTX went bust and sent the bitcoin price to well below \$16,000.”

The tweet generated more than 5,000 comments

The post goes on to highlight bitcoin’s technological and legal shortcomings – which would make it an ineffective means of payment – the pollution it causes, as well as its unsuitability as an investment. “Bitcoin does not generate cash flow (like real estate) or dividends (like equities), cannot be used productively (like commodities) or provide social benefits (like gold). The market valuation of Bitcoin is therefore based purely on speculation,” the authors state.

Posted on the ECB’s Twitter feed, their article met with an unprecedented response for the institution, quickly making the rounds on the web and social networks. The tweet alone generated more than 5,000 comments on 2 December.

The tidal wave of reactions is worth a look... regardless of what you think of Bitcoin. Defending their corner of the sandbox, crypto influencers – some of whom have up to several million followers – were among the first to react. Here are some highlights: “The Euro will be gone before Bitcoin”; “That’s worth a retweet in 2024”; “Was it the famous ECB that anticipated inflation?”; “I’d rather have a BTC than a bank conference”; “May European countries stop taxing cryptocurrencies if they don’t believe in them”; “And yet another in the long list of predictions of BTC’s demise over the last 10 years,” and so forth.

What should we make of it? As is the case with many divisive issues today, opinions are polarised to the extreme. We’ll just have to wait a while to draw further conclusions. You know how it goes. See you in 2023, or better yet, 2024! ▀

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1.1% EnterprisePlus (after compensation)*	– 5150.–
Your special price	41 680.–
Your discount	7200.–
Annual percentage rate for leasing	1.9%
Leasing rate per month	279.–

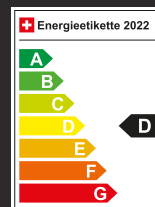


Illustration: Audi Q3 Attraction 35 TFSI, 150 hp, 7-speed S tronic, 7.1 l/100 km, 159 g CO₂/km, category D. S line, Glacier White, Audi Sport wheels, 5-twin-spoke rotor, matt black, high-gloss turned finish, 8.5 J × 20, tyres 255/40 R20, black wing mirror casing, black optical package, Matrix LED headlights with LED tail lights and dynamic indicators at front and rear, with headlight cleaning system, privacy glass, regular price CHF 58 510.–, compensation CHF 2450.–, EnterprisePlus discount CHF 6160.–, cash purchase price CHF 49 900.–, down payment CHF 8610.–. Leasing rate: CHF 329.–/month. All offers exclusive of compulsory comprehensive insurance. The granting of credit is prohibited if it leads to over-indebtedness on the part of the consumer. Financing provided by AMAG Leasing AG. Offer valid for contracts concluded by 31.12.2022 or until further notice. Subject to change. Applies to all vehicles imported by AMAG Import Ltd. Suggested list price of importer AMAG Import Ltd. * EnterprisePlus: commercial offer, only available for vehicles registered to companies with an entry in the commercial register.

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HUBLOT

“Moderna is more than just the COVID vaccine”

As sales decline for its messenger RNA Covid vaccine, US biotech Moderna is ramping up its non-COVID work. For CEO Stéphane Bancel, mRNA technology has a compelling future well beyond the pandemic.

BY BERTRAND BEAUTÉ

Born in 1973 in Marseille (France), Stéphane Bancel began his career with pharmaceutical giants, French BioMérieux and the American Eli Lilly. In 2011, he left big pharma to take the reins of the startup Moderna, which developed revolutionary vaccines based on messenger RNA.

JOËL SAGET / AFP

Moderna is a perfect case study of a small company becoming a giant almost overnight. Virtually unknown before the pandemic, the American biotech's revenue stood at just \$60.2 million in 2019, but this figure then skyrocketed to \$18.7 billion in 2021. Its success was down to four letters: mRNA. The pandemic served as proof for the first time that messenger RNA (mRNA) technology could be both effective and deployed on a large scale. This generated a fortune for Pfizer-BioNTech and Moderna, the first two companies to make their mRNA vaccines available.

“We currently have 48 programmes in development across 45 development candidates, of which 35 are currently in active clinical trials”

So where does Moderna stand now? Using its new war chest, Moderna has begun a whole host of both scientific and industrial projects. The pharmaceutical lab plans to apply mRNA technology to treatments for other diseases. It has around 50 mRNA compounds in the development pipeline for the treatment of

viruses (flu, RSV, HIV, Zika) as well as non-infectious illnesses such as certain cancers and rare diseases. At the same time, Moderna (which currently has only a single facility in Norwood, US) is also planning to expand to new locations. In early March 2022, the company announced a memorandum of understanding to build an mRNA vaccine manufacturing facility in Kenya. That same month, it also began a partnership with the Australian government to build an mRNA vaccine complex in Melbourne. In April, the construction of a new facility in Quebec was announced, and an agreement in principle was signed with the UK government on 22 June. Similar projects are in the works for France and South Korea. Speaking with *Swissquote Magazine*, Stéphane Bancel, CEO of Moderna, explains why these investments are so important as sales from COVID vaccines decline.

Canada, the United Kingdom, Australia, Kenya... Why is Moderna looking to build factories all over the world?

What we truly lacked during the pandemic was a regional production strategy. While Switzerland – as an export site – was a perfect location, with other countries, we had significant difficulties exporting, which we

were shocked by. For example, in the first few months of 2021, the United States banned us from exporting our vaccines, including to Canada. So we want to have a production facility on each continent, including Africa, so that these export issues, which cost a lot of people their lives, do not happen again in the next pandemic. And yes, I'm convinced there will be other pandemics.

There are also rumours about a facility in France. If this materialises, could it risk your partnership with Swiss company Lonza, which manufactures your vaccines?

Yes, we are in discussions with the French government. But as I'm sure you know, I can't say any more on the topic. Discussions between a government and a private company are confidential. As for Lonza, building a facility in the United Kingdom and potentially France would not risk our partnership.

Currently, Moderna only markets COVID vaccines, and sales are declining. Is it premature to launch all of these new projects while your other treatments are still in development?

No. We built Moderna to be a technological platform, not a COVID-based company. In the traditional pharmaceutical industry, 90% of new ▶

molecules fail during clinical trials because of their toxicity. Why is that? Because each drug that is in development is a new compound. So you need to conduct long and costly clinical trials in order to evaluate the efficacy of each compound but also to understand the chemical and toxic properties of each molecule. Pharma companies start from scratch for each new drug and must re-learn all of that information every time.

At Moderna, our approach is completely different: the chemistry of our cancer vaccine is 100% the same as our Spikevax COVID vaccine. That is where our platform is truly ground-breaking. The only thing that regulators need to confirm is that we're still manufacturing the same product with no impurities, and of course that the treatment is effective against the targeted disease. But toxicity is no longer an issue because the molecules are always the same, which means that many more of our drugs should succeed in clinical trials compared to companies in the traditional pharmaceutical industry. Furthermore, since the chemistry of our compounds remains the same, our treatments can be produced in any of our factories around the world with no difference between them. We currently have 48 programmes in development across 45 development candidates, of which 35 are currently in active clinical trials

What are your most advanced vaccine candidates and what will be your first non-COVID product on the market?

We currently have two products in phase III clinical trials (ed. note: the last step before being made commercially available): a flu vaccine and a vaccine for respiratory syncytial virus (RSV). The final approval phase for these two vaccines will take place in Q1 2023. I can't tell you which will be on the market first. There are lots of RSV cases around the world right now, and since the speed of studies depends on the number of

people enrolled, it's possible that we could get definitive data on the RSV vaccine before data on the flu vaccine. After that, it depends on the approval authorities in each country. Since there isn't yet an RSV vaccine on the market, health officials may be tempted to speed up approval. It could be ready as early as autumn 2023. But if Swissmedic, for example, does not fast-track the study, we may have to wait until autumn 2024, as both illnesses are seasonal.

We already have flu vaccines. What benefit is there in putting another one on the market?

The seasonal flu vaccines that are currently available are about 50% to 60% effective in a good year and

20% to 30% effective in a bad year. The worst-case scenario is when the flu virus mutates during the period between when the WHO chooses the target strain in February and when the virus actually circulates in autumn. With our vaccine, we can avoid that problem because we will be able to manufacture the vaccines much later in the year. As a result, we can significantly increase efficacy. I think that an efficacy of 90% to 95% is possible in the long term.

Right now, we are able to create, produce and market a vaccine in 60 days, compared to several months for traditional vaccines. During the COVID pandemic, for example, the FDA asked us to create an Omicron

vaccine on 28 June. On 2 September, it was available in pharmacies in the United States.

Simply put, we are able to determine which strain to target much later in the process, and even if the virus mutates in autumn, we can update our vaccine for winter. For high-risk individuals, this could have an enormous impact on the probability of hospitalisation. These people could receive a second injection with an updated vaccine in December when flu season is still ongoing.

Your next project is to combine the flu, COVID and RSV vaccines into one injection. What are the advantages of a combined injection?

There are 10 respiratory viruses that cause flu-like symptoms, including COVID, RSV and the flu itself. People often think they have the flu, but in fact they have a different virus. According to figures from the WHO, infectious respiratory illnesses were the fourth leading cause of death worldwide in 2019 (ed. note: after cardiac disease, COPD and cancers). So it's a major public health concern. But having 10 different injections each autumn is a lot to ask. Getting just one would be more acceptable to people.

Today, with mRNA technology, there's no scientific reason why we can't use one single vaccine to protect against those 10 viruses in one dose. By developing such a product, Moderna can

have an incredible impact on public health, on quality of life for the general public and on the economy as a whole, because everyone ends up paying the price for hospitalisations and lost productivity – even though the financial aspect is just an added bonus. Health authorities are very interested in a single solution that can protect against all of the respiratory viruses.

“The companies that are entering this market now have 10 years of catching up to do”

What is the commercial potential of a combined vaccine for RSV, COVID and the flu?

There are currently 1.5 billion people around the world who are either over 50 or who are high-risk due to a co-morbidity. If you multiply this figure, the number of high-risk people, by the price of a flu or COVID vaccine, you can see that it's a significant market. Especially so, given that this type of product can only be made with mRNA technology – it cannot be made with traditional recombinant vaccine technology – and there are only a few companies that have truly mastered mRNA and have the patents to use it.

Moderna and Pfizer-BioNTech are currently the only two companies to have mastered mRNA vaccines. But traditional vaccine giants such as Sanofi have announced major investments in this technology. Are you afraid of the competition?

The companies that are entering this market now have 10 years of catching up to do and don't have the focus that we have. I think about messenger RNA all day: in the morning, in the afternoon, and at night before I go to sleep. How long do the CEOs of these big pharma groups spend thinking about mRNA each week? A few hours at the very most. The intensity and ▶



Empty vials of the Spikevax vaccine, here photographed in a bin at a vaccination centre in Barcelona, in December 2021. Over the whole of 2021, Moderna sold 807 million doses of this vaccine worldwide.

focus of a small company such as ours, which concentrates on one single technology, simply cannot be compared to what's possible for a large company that is developing several different technologies at the same time. I often see in the news that such-and-such a company has announced plans to invest \$1 billion in mRNA over 10 years. And that makes me laugh because we're investing \$4 billion next year. It's going to be hard to catch up with us.

Why has the mRNA revolution come from two small companies rather than pharma giants?

I don't know of a single industry in which a disruptive technology has come from a large company. The reason is simple: it is very difficult for large companies to lose money for years at a time while investing in a disruptive technology. But it's impossible to conduct disruptive science without a lot of money, because no one has ever done what you're trying to do, so there are a lot of problems to overcome. We've been overcoming problems here at Moderna for the past 10 years. We tried things and sometimes they worked, sometimes they didn't. Why did a certain trial fail? No one knows, because no one had conducted that specific trial before. You can't call up an EPFL professor

and ask for help, because they don't know the answer.

In health science, you need 10 to 20 years of research, which means 10 to 20 years of investments, knowing that if you don't succeed, all of that money was wasted. This risk is why large companies hate disruptive investments. They are not set up for these types of investments and they don't have the culture for them. On the other hand, what they are able to do very well are clinical trials, industrialisation and commercialisation. Most of the drugs that big pharma groups sell were developed by small companies that they then acquired. Big pharma is no longer capable of innovating the way that it did 20 years ago.

You're also developing an AIDS vaccine, a disease that all clinical trials have failed to treat over the past 40 years... What advantage will mRNA technology bring to the fight against AIDS?

The problem with HIV is that it is a very difficult disease to model, even with monkeys, and that the virus mutates very quickly. Thanks to the speed with which we're able to make vaccines, we'll be able to test several formulas to see what works. I think that our v1.0 vaccines for flu and RSV will be effective, because

the biology of these viruses is very well understood at this point. But for our v1.0 AIDS vaccine, I have no idea, because the biology is not as well understood. But since we can multiply the iterations, I think we will succeed in progressively optimising our vaccine formula so that the X.0 version will be effective.

“Large companies hate disruptive investments. They are not set up for these types of investments and they don't have the culture for them”

Shares in Moderna were worth just a few dollars before the pandemic, but jumped to more than \$400 in 2021. The price is now back below \$200. What are shares in the company really worth?

Our problem is that we're a new company, so we are subject to a wide variety of opinions on our future. If you look at the analyst reports for next year, Moderna's revenue outlooks go from \$3 billion to \$20 billion – in short, analysts don't all agree what Moderna will become in the next year. And they're even less sure about what will happen in five or 10 years. Why is that? We're a disruptive company, and like all disruptors, it takes time for people to understand our model.

There are some who think that our company is focused solely on COVID, whereas I believe we are a platform company that will produce vaccines and treatments for many diseases. Some investors understand that and others don't. So I think that over the next five years, we'll see volatility in our share price. And then, once everyone understands that Moderna is a platform, volatility will decrease as investors agree on our true value. ▴


ANALYST OPINION

ANY LAST DOUBTS BEFORE AN ANALYST'S BLESSING?

Moderna's Q3 results were published in early November and analysts were disappointed. The pharmaceutical company, which generated \$3.1 billion in revenue compared to \$4.8 billion over the same period a year earlier, now expects sales to reach \$18 to \$19 billion in 2022, versus earlier predictions of \$21 billion. These results can be explained by the drop in sales of its COVID vaccine, which could decrease even further in 2023. The market is now waiting for Moderna to prove that it can diversify beyond COVID – and Moderna is hard

at work to do just that. In the short term (2023 or 2024), the company plans to market its vaccines for the flu and respiratory syncytial virus (RSV). In the longer term, it seeks to apply mRNA technology to treat rare diseases, cancers and/or cystic fibrosis in particular. It remains to be seen whether Moderna's formulas will be effective to treat the diseases they are targeting. If they are, Moderna could become a giant in the next few years. Most analysts are cautious and recommend holding shares.

— MRNA

 **Luzerner Kantonalbank**

A broad international vision rooted in central Switzerland

Investing is about devising strategies, setting goals and choosing the right partner – LUKB Expert Fondsleitung AG, for example. Markus Bächtold, fund manager at the multiple-award-winning company, talks about the special investment strategies of two Swiss equity funds.

What makes LUKB Expert Fondsleitung AG the ideal investment partner?

I think there are as many answers to that question as the number of clients we have. Essentially, it's about ensuring the consistent quality of our products and services. We've grown gradually and stably over time, and this means that we always focus on medium to long-term investment success and avoid experiments. In doing so we enable our investment clients to grow their assets sustainably, even during turbulent times.

So you're better than other fund providers?

[laughs] Of course! No, seriously. Alongside our broad perspective, we also score well compared to larger providers in terms of process efficiency: we're a small, stable and well-established team with decades of investment experience.

What are the highlights in the fund range?

Every fund is a highlight in itself. We became well-known thanks to the success of our strategy funds, which were regularly commended by independent rating agencies.

Does LUKB also have investment funds with a national focus?

Absolutely. For example, we have the equity fund LUKB Expert-TopSwiss, which invests exclusively in the 30 to 40 largest Swiss companies. The individual stocks are weighted equally, which creates the benefit of broad diversification. This is because under a classical

index, which is weighted according to market capitalisation, a small number of heavyweight stocks contribute significantly to index performance. As a cantonal bank rooted in central Switzerland, we even offer a unique fund with a regional flavour, LUKB Expert-Tell. This fund focuses on companies based in central Switzerland, investing largely in small and mid-cap firms. During normal times, shares issued by small and medium-sized Swiss enterprises offer investors an excess return compared to the market as a whole. In contrast to the SMI, due to the regional focus LUKB Expert-Tell has greater exposure to the performance of the Swiss economy.

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2023, TECH STRIKES BACK

Tech stocks plunged dramatically in 2022. Time for investors to take a closer look.

BY LUDOVIC CHAPPEX

Buy low, sell high. The investor’s ultimate dream. But unlikely to happen in fact, because the market has a way of avoiding the obvious. Even if we cannot obtain perfection, we can try to come close. Sometimes. That is what some of the bolder analysts seem to be trying to do. In early October, they predicted that tech stocks would make a comeback in 2023. “You never buy at the bottom. That’s the number one rule to know,” says Timothy Skiendzielewski, investment director at abrdn, with a smile. He also believes that technology stocks will rebound next year. Citigroup is one of the first institutions to have officially positioned itself accordingly, but carefully points out that the coming months will hardly be smooth, and high volatility is likely to prevail. The price to pay, basically. ▶

- 34. 15 tech companies with bright futures
- 41. Not all Big Tech companies are alike
- 48. Interview with Bracken Darrell, CEO of Logitech

Dossier prepared by Bertrand Beauté and Ludovic Chappex

“The fundamentals are very positive, with the price-earnings ratios of tech companies down to 10-year lows,” (ed. note: a low price-earnings ratio, or PER, indicates that shares are cheap) Anthony Ginsberg, managing director of Ginsglobal Index Funds, told us in early November as we began preparing this issue’s feature story. He advised long-term investors to gradually start moving into the market. Otherwise they could miss out on the first 10% or 20% of the imminent rebound. “With inflation above 8% in the United States, things are still tight,” he says, “but I think the situation will turn around as we near 7%.” A few days later, on 9 November, US inflation figures came out

better than expected (7.7%), causing the markets to rebound. The Nasdaq 100, the US technology sector index, stood out in particular, rising by almost 10% on the same day.

Obviously, this encouraging jump does not say anything about where prices will go in the short term. Analysts believe that the economic climate remains uncertain and that we’ll probably have to wait until the end of the first quarter of 2023 to gain some certainty. Corporate earnings are also expected to continue to erode for at least another quarter, and that could perpetuate the negative market sentiment. In reaction to the situation, many big-name

companies and business leaders have said in recent weeks that we should definitely expect the next few months to be a rocky (see inset below). But those warnings are not specific to technology stocks. Some tech companies have had to make massive staff cuts. For example, Meta has laid off 11,000 employees, and Amazon 10,000.

How did we come to this? To understand and measure this decline, we must remember that many tech firms drew tremendous benefit from the pandemic, in a context of accommodating monetary policies. Their shares rose sharply in 2021. Probably too high. The tide began to turn in November last year, when central banks first announced they would hike interest rates. Over the course of 2022, the Nasdaq has fallen nearly 30%, sparing almost no company. The most speculative tech stocks have generally been hit hardest. The Ark Innovation ETF managed by Cathie Wood, which invests in disruptive innovation companies, has fallen 60% this year, and even more than 70% since its peak in February 2021.

The current atmosphere of recession has a majority of analysts saying that central banks will phase out interest rate increases as from next year, inflation is expected to subside: “We think rates will stabilise. It’s not a question of if it will happen, but when,” says Brice Prunas, portfolio manager at ODDO BHF AM. “Rate cuts are possible as early as the second half of 2023,” says Mario Geniale, chief investment officer at CIC Bank. “The first quarter will remain difficult, but we expect technology stocks to rise over the year because their valuation is currently low, and these firms have stronger reactions to interest rate cuts. These companies also have healthy balance sheets.”

Brice Prunas agrees. “The current fall in their share prices has no similarity with the decline during the 2008

crisis, and even less in common with that of the internet bubble in 2000. For now, the factors contributing to the crisis are exogenous. According to our analysis, many technology companies are in a very healthy position. They have cash reserves and a solid business model.”

"CYBER SECURITY IS BECOMING THE NUMBER ONE ISSUE FOR ANY BUSINESS OWNER"

Timothy Skiendzielewski, investment director at abrdn

Invest, yes. But in which firms? The experts we contacted name two sectors that stand out quite clearly from a medium- to long-term perspective: cloud services and, its flip side, cybersecurity. They easily even refer to megatrends. The selection of companies in this feature (see p. 34) reflects this. Studies conducted by consulting firms predict that growth in these areas will be spectacular over the next 5 to 10 years. For just two examples from the average reported figures, Reportlinker expects the cloud market, worth \$548.8 billion in 2022, to reach \$1,240.9 billion in 2027. That represents average annual growth of close to 18%. Meanwhile, Astute Analytica forecasts that the cybersecurity market will grow from \$162.9 billion in 2021 to \$346 billion by 2027, i.e., a rate of more than 13%.

“Cloud-based digital transformation will permeate all sectors of the economy,” says Timothy Skiendzielewski at abrdn. “This is only the beginning. And in these conditions, IT security is not an option but an absolute necessity.” At ODDO BHF, Brice Prunas agrees. “Cyber security is becoming the number one issue for any business owner,” he says.

Brice Prunas is convinced about the potential of artificial intelligence (AI) in the longer term. The analyst insists that the technology is still in its infancy in terms of its economic benefits, but that it will eventually affect all business sectors. He stresses the importance AI will eventually have in the health sector. “For pharmaceutical companies, for example, AI can bring very significant savings in developing drugs. Another application is in robotic surgery, which will become more commonly used and limit the rate of human error.”

In the companies that lead this sector, Brice Prunas cites Nvidia, as it manufactures the computer chips needed for these technologies. He also thinks Google is a definite yes (see p. 41). Tesla is more controversial these days – especially due to the unpredictable behaviour of its boss, Elon Musk – but he also favours it. “AI at Tesla is not just about autonomous cars, it’s at the heart of everything they do. Their humanoid robot Optimus, for example, just keeps getting better. The next version will have conversational functions, and interpreting human emotions will be the next step. In the countless areas of assistance and care, the potential is huge.” Google CEO Sundar Pichai will not contradict him, as he actually compared AI to the discovery of fire or electricity in terms of its importance for humanity, in an interview with the BBC last year.

Those are the essential underlying trends. In the more immediate future, many analysts also favour companies active in the electric vehicle market (such as semiconductor manufacturer Infineon, which is included in our selection). According to them, this sector has a lot of room to grow over the next decade. The penetration rate of electric vehicles is still low, at around 5%. But the trend is likely to accelerate, especially as policy is pushing in that direction. ▲

DANGER AHEAD! PLEASE FASTEN YOUR SEATBELTS

Many CEOs and institutions fear the global economy is in for a bumpy ride.

Not all banks are brimming with optimism that the global economy will soon be back on track. Morgan Stanley, one of the most famous of them, has been raising the spectre of a global financial crisis since the summer. The main culprit is the strong dollar, but the currency has since fallen in value. JPMorgan, another reputed institution, also sees a major financial crisis looming. Its CEO Jamie Dimon began issuing warnings this autumn. “This is serious,” he said on 11 October in an interview with CNBC. A month later, he went further in telling *The Nikkei*, Japan’s leading business daily, that the stage has been set for an “economic hurricane” and other “surprises” on the way.

In mid-November, another top business executive joined in. Amazon founder Jeff Bezos

advised US consumers to postpone buying high-priced items, given the prospect of an imminent recession. Elon Musk also sees dark clouds on the horizon. On his Twitter feed, Tesla’s filterless CEO has been relentlessly repeating that this is a critical time. And he did it again on 29 November, “Trend is concerning. Fed needs to cut interest rates immediately. They are massively amplifying the probability of a severe recession.”

The list of challenges that point to a shrinking global economy is frightening: inflation, high interest rates, war in Ukraine, geopolitical tensions, rising energy and food prices, supply chain problems, etc. Not to mention the recent unrest over China’s zero-COVID policy, which has sparked protests in the country’s streets and factories.



A REPEAT IN 2023?

One year ago, in December 2021, *Swissquote Magazine* published a feature on the top 25 firms with potential for significant growth in 2022. We know what happened next. After a fabled journey in 2021, stock markets marked their *annus horribilis*, especially the tech companies starring in our cover story. One example from our selection is Twilio. It lost 80% of its value in the first 11 months of 2022 (see below). War, inflation and rising interest rates, among other things, had much to do with it. Despite the distressing performance, some of the companies we selected still have very strong business models. That is why several of them are back in our selection this year.

Tech firms in our 2021 feature story	Change in their share price for the first 11 months of 2022
DocuSign	-70%
OVHcloud	-50%
Twilio	-80%
SES-imagotag	+70%
Suse	-54%
Unity Technologies	-71%
Matterport	-84%
Veeva Systems	-26%
Qualcomm	-32%
Zscaler	-57%
Tesla	-51%
Microsoft	-24%
Datadog	-54%
Nvidia	-44%
Palo Alto Networks	-5%

15 TECH COMPANIES WITH BRIGHT FUTURES

A point in common among the firms in our selection is that their share price has fallen sharply in 2022, sometimes contrary to economic logic. But they also share a solid business model and a proven track record.

BY BERTRAND BEAUTÉ AND LUDOVIC CHAPPEX

FORTINET

The save haven

CYBERSECURITY

Crisis? What crisis? Despite the global economic slowdown, US cybersecurity company Fortinet continues to grow. For 2022, the company forecasts revenue of \$4.4 billion, up 33% year over year. And that's not all. In the longer term, Fortinet aims to hit \$8 billion in revenue by 2025, equating to annual growth of 22%, with a margin of more than 25%. These forecasts and the compa-

ny's size make Fortinet look like a safe bet. Despite this, the company's share – one of the five best performing stocks in the S&P 500 in 2021 – has lost more than 20% of its value since the beginning of 2022, whereas the Nasdaq 100, the US technology sector index, has lost nearly 30%. For analysts covering the stock, the current decline in Fortinet's share price offers a window of opportunity for investors to buy into the company. A vast majority recommend buying shares.

FOUNDED
2000

HEADQUARTERS
SUNNYVALE (US)

EMPLOYEES
12,000

2021 REVENUE
\$3.34 BN

FTNT

YTD*:
-20%

*Change in the share price since the beginning of the year (as of 5 December)

Jensen Huang, CEO of Nvidia, pictured here during the presentation of the Drive Xavier chip prototype, at CES in Las Vegas in January 2018.

NVIDIA

The chip poised to rebound

SEMICONDUCTORS

After the boom in 2020 and 2021, the consumer electronics sector, which has the highest demand for semiconductors, has seen a dramatic slump this year. For example, PC sales plummeted 19.5% in the third quarter compared to the same period a year earlier, i.e., the biggest drop in more than two decades, according to research from Gartner. That marks the fourth consecutive quarter of decline. The situation will seriously impact the sales of fabless chipmakers like Nvidia and AMD. Nvidia's Q3 revenue totalled \$5.93 billion, down 17% from the third quarter of 2021. Since January, the firm's share has lost almost half

its value. However, most analysts believe that Nvidia stock has bottomed out and is poised to rebound.

Nvidia shares are undervalued, Morningstar said in a report published on 18 November. The US financial services firm believes that investors with a long-term horizon should find Nvidia attractive. A resounding majority of analysts recommend buying shares. What's their reasoning? While gaming-related revenue – closely interconnected with markets for PCs and cryptocurrencies – fell 51% in the third quarter to \$1.51 billion, the California-based firm is leveraging

its technological edge to gain a foothold in the fast-growing cloud sector. The company sells the GPUs (Graphics Processing Units) built into data centres owned by cloud giants like Amazon and Microsoft. In the third quarter, Nvidia's cloud revenue rose 31% to \$3.83 billion, while automotive revenue climbed 86% to \$251 million. And it's not about to stop. Morningstar expects the data centre segment will grow at least 40% this year, thanks to strong demand for the H100 GPU – Nvidia's latest addition to the range – from Amazon, Microsoft and Alphabet.

YTD:
-44%

FOUNDED
1993

HEADQUARTERS
SANTA CLARA (US)

EMPLOYEES
25,000

2022 REVENUE
\$26.9 BN

NVDA

INFINEON

At full throttle

SEMICONDUCTORS

Stock markets can behave erratically. Since 1 January 2022, the share price of the German semiconductor manufacturer Infineon Technologies has fallen by 22%, compared to the 11% drop in the DAX – Germany's main stock market index, which includes Infineon. However, the firm posted a 29% increase in revenue to €14.22 billion and a profit of €2.18 billion for its financial year ended 30 September 2022, almost double the previous year. And the outlook is also positive. For the financial year ending in September 2023, Infineon forecasts revenue of around €15.5 billion (plus or minus €500 million), i.e., an increase of 9% for the median figure. As a sign of its confidence, in

November the company announced that it was building a new €5 billion factory in Dresden. "Never has the environment been so favourable," Jochen Hanebeck, the CEO of the Munich-based company, happily announced at the earnings presentation on 15 November 2022.

With this strong performance, why have Infineon shares lost more than the market since the beginning of the year? In addition to the fact that, across the board, the technology sector has taken a beating from the markets in 2022, Infineon's share has struggled due to the state of the semiconductor business. After a record year in 2021, the industry is showing signs of slowdown, with a decline in sales of consumer products (PCs,

smartphones, televisions), which are the main consumers of electronic chips. But Infineon primarily produces electronic components for the automotive sector, which account for almost half of its revenue, an area where the chip shortage remains an issue. As a result, the German firm's order book is crammed full, amounting to €43 billion – three times the company's annual revenue. "We are driven by three megatrends: electrification, digitalisation and decarbonisation," Jochen Hanebeck says. And that makes analysts' eyes pop. A large majority of them recommend buying the stock. The Geneva-based company STMicroelectronics is also enjoying the buoyant market trend, posting healthy financial results.

FOUNDED
1999

HEADQUARTERS
NEUBIBERG (DE)

EMPLOYEES
56,000

2022 REVENUE
€ 14.22 BN

IFX

YTD:
-22%

Chip manufacturing process in a clean-room at Infineon's factory in Dresden, Germany.



INFINEON

NICE SYSTEMS

Company-consumer interface

CLOUD

Founded by former Israeli soldiers and originally active in the military sector, Nice Systems has refocused its strategy on civilian markets and grown into a leader in cloud CX services. CX, for customer experience, here covers the integrated software solutions used by businesses to manage their end-to-end customer contact approach (call centres, after-sales service, data collection and protection, etc.), a mission-critical factor for any company.

Drawing extensively on artificial intelligence, Nice Systems' solutions are used by firms as diverse as Morgan Stanley, Visa, American Airlines, Radisson Hotels, Accenture and Toyota Financial Services. With a strong presence in the US, but still based in Israel, Nice Systems has caught the attention of many analysts.

The firm reported 12.3% revenue growth in the third quarter from the same period a year earlier, to \$554.7 million, and a 33.6% jump in operating income to \$90.3 million.

FOUNDED
1986

HEADQUARTERS
RA'ANANA (IL)

EMPLOYEES
7,500

2021 REVENUE
\$1.92 BN

NICE

YTD:
-30%

TWILIO

Can't get any lower

SOFTWARE

A spectacular plunge. Since the beginning of 2022, Twilio's share price has lost more than 80% of its value. The Californian company, which develops an online customer relationship management platform, benefited from the lockdowns during the pandemic to soar to stock market heaven. Between January 2020 and January 2021, its share price rose 400%, from around \$100 to over \$400. This stunning rise was perhaps too fast, resulting in a brutal reality in 2022. The share is now worth less than \$50.

FOUNDED
2008

HEADQUARTERS
SAN FRANCISCO (US)

EMPLOYEES
7,900

2021 REVENUE
\$2.84 BN

— TWLO

YTD:
-80%

potential. Now, the majority of them recommend buying the stock, due to Twilio's strong growth. In the first three quarters of 2022, the company generated revenue of \$2.8 billion, compared to less than \$2 billion for the same period in 2021, an increase of 40%. Despite having more than 280,000 active customers, including large corporates such as Uber, Coca-Cola and Airbnb, the platform nevertheless posted a \$35 million loss in the third quarter of 2022, down from the \$8 million profit a year earlier. As a result, Twilio has not escaped the current wave of restructuring in the US tech industry: this autumn, the company laid off 11% of its employees, i.e., 800 to 900 people.

However, analysts believe that the stock has sunk too far in light of the company's

ZSCALER

The cloud security expert

CYBERSECURITY

Most of the US companies on the cybersecurity bandwagon have felt the market's wrath in 2022. The decline in cybersecurity shares seems even more ironic considering the growing number of cyber attacks worldwide. As Morningstar wrote in an article, "We expect demand for cybersecurity services to remain strong, driven by a high-threat environment."

Of the many firms operating in the sector, Morningstar singled out the US-based companies Okta and Zscaler. "We believe that these companies' shares have fallen too far (ed. note: Okta's share price has dropped 80% since the beginning of the year) due to rising uncertainty and interest rates, which has weighed on valuation multiples," the financial services firm said. The cloud

security expert Zscaler is showing solid growth. Over the reporting year to end-August 2022, the company posted revenue of \$1.09 billion, a 62% increase year over year, but with a \$327.4 million loss. That has not discouraged analysts, however, as most still recommend buying shares.

FOUNDED
2007

HEADQUARTERS
SAN JOSE (US)

EMPLOYEES
5,000

2022 REVENUE
\$1.09 BN

— ZS

YTD:
-57%

CYBERARK

Guardian of digital identities

CYBERSECURITY

Winner of numerous cybersecurity awards and honours in recent months, this Israeli company is a leader in digital identity management. Companies use its solution to enable secure access for employees from any device and any environment (local or cloud servers) via a single portal. CyberArk's system is particularly effective in protecting privileged accounts (belonging to company users with access to sensitive data), which have become a critical target for cyber attacks. For its most recent quarter, the firm reported a 22.9% increase in profit to \$120.2 million compared to the same period last year. A distinct majority of analysts recommend buying shares.

FOUNDED
1999

HEADQUARTERS
NEWTON (US)

EMPLOYEES
2,400

2021 REVENUE
\$503 M

— CYBR

YTD:
-14%

Twilio CEO Jeff Lawson (with glasses) celebrates Twilio's IPO in June 2016 in New York.

Michelle Zatlyn, co-founder of Cloudflare, pictured here at Fortune's Most Powerful Women Summit, in Washington in October 2019.



CLOUDFLARE

Cybersecurity in top form

CYBERSECURITY

“Help build a better Internet.” The slogan of cybersecurity firm Cloudflare is all about good intentions. However, since its creation in 2010, the Californian company has not been spared from controversy. Subscribers to its free services of protection against hackers (especially Distributed Denial of Service attacks) have mainly been administrators of sites praising the Islamic State and Al-Qaeda, as revealed by the Anonymous hacker collective in 2015. In 2019, Cloudflare had to stop working with the controversial 8chan platform, following the El Paso massacre, which appears to have been inspired by

discussions on that forum. The company’s share price is also undergoing turmoil. After peaking in November 2021 at over \$200, Cloudflare shares are now trading below the symbolic \$50 mark.

Yet, despite the bumpy ride, the company continues its wild growth. Cloudflare forecasts revenue of between \$974 million and \$975 million in 2022, up from \$656 million in 2021. That comes out to an increase of 48% year on year, and a profit of over \$30 million. With that in mind, analysts covering the stock have made their call. Half recommend buying the stock, while the other half recommend holding it.

FOUNDED
2010
HEADQUARTERS
SAN FRANCISCO (US)
EMPLOYEES
3,200
2021 REVENUE
\$656.4 M
NET

YTD:
-62%

NOT ALL BIG TECH COMPANIES ARE ALIKE

Tech giants such as Apple, Alphabet and Microsoft are favoured by analysts. But Meta is no longer considered a dream investment. We take a closer look...

BY LUDOVIC CHAPPEX

Tech giants were not spared. The 2022 catastrophe ravaged share prices for the big players as well as for the more everyday over-indebted start-ups. Meta (Facebook, WhatsApp, Instagram) has seen its share price drop nearly 70% since the start of the year, and Amazon’s has fallen nearly 50%. Alphabet (Google) and Microsoft were more resilient, with a drop of around 30%. Apple is doing better, with a 20% decrease in its share price.

the first time in company history. In Q3, Meta’s revenue drop accelerated (-4%) and its profits fell 54% compared to the previous year (to \$4.4 billion), while the decrease in the number of Facebook users has added to the overall crisis situation. And that’s not even taking into account distrust of the Metaverse, which is currently best described as a flop. As a result of this crisis, Meta announced in November that it would lay off 11,000 employees, or approximately 13% of its workforce.

So what is the current situation and what is the best plan of attack for investors? If we trust the vast majority of technology ETFs, it’s impossible to ignore Apple and Microsoft, which are both very significantly overweight in these funds. Alphabet and, to a lesser extent, Amazon are also benchmark assets in a tech portfolio. But Meta isn’t achieving quite the same level of enthusiasm as it once did. Why?

“Facebook’s advertising revenue has decreased significantly,” says Mario Geniale, head of investments at CIC. “Companies such as Microsoft, Alphabet and Apple (ed. note: the three are valued at a total of more than \$5,000 billion) seem more solid.” Indeed, Mark Zuckerberg’s company has seen its ad revenue decrease this year for

"FACEBOOK'S ADVERTISING REVENUE HAS DECREASED SIGNIFICANTLY"

Mario Geniale, head of investments at CIC

Meanwhile, Alphabet isn’t exactly drowning in ad revenue either – up just 2.5% in Q3 compared to 43% last year – but the medium- and long-term outlooks are more promising for the Mountain View firm, according to most analysts.

“Google is investing huge sums of money in research and development, it rules the Android ecosystem and it can rely on its

cloud services, which will be an incredible growth driver in the future,” says Geniale. “And Apple and Microsoft have billions in cash flow. They have the ability to acquire promising smaller companies based on their needs. Amazon is a more diversified conglomerate, but its position as the cloud leader also makes it an ideal asset.”

Analyst Brice Prunas, a portfolio manager at ODDO BHF AM, agrees and views Meta with a healthy dose of scepticism compared to the other tech giants: “Their current issue is that their business model has been called into question.” The champion of artificial intelligence and cloud technology singles out Google and Microsoft in particular for praise: “AI is in its infancy and at Google, AI is everywhere, from their search engine and their autonomous vehicle, Waymo, to deep learning and their life sciences projects. They are at the cutting edge of this technology. Microsoft also has the ability to grow at interesting levels, in particular thanks to its positioning in the cloud space with its Azure platform. We have a more cautious opinion of Apple now. In the short term, cyclical supply chain concerns, particularly in China, such as the effects of a recession on the consumer, can affect both supply and demand.”

The Salesforce Tower (formerly Transbay Tower) is a 326-metre skyscraper located in downtown San Francisco in the United States. It is the tallest skyscraper in the city.

SALESFORCE

The giant in the shadow of GAFAM

CLOUD

For most regular people in Europe, the software giant Salesforce is practically unknown compared to Microsoft. Founded in 1999, the company has nonetheless become a San Francisco landmark in the space of a few years, like the 326-metre-high Salesforce Tower, the city's tallest skyscraper. The California-based company develops customer relationship management (CRM) software for businesses. In 2020, it acquired Slack, a platform offering online tools for project collaboration, for \$27.7 billion. This acquisition has strengthened Salesforce's position in competing with enterprise digital services from the behemoths Microsoft (Office 365 and Teams) and Amazon (Cloud Azure). During the pandemic, the use of this type of software sky-rocketed as masses

of people began working remotely. Salesforce's revenue rose from \$17.1 billion in 2019 to \$26.5 billion in 2021, with the company's share price increasing from less than \$150 in January 2019 to more than \$300 in November 2021.

Since that peak, Salesforce shares have taken a blow in 2022, like most tech stocks. But don't blame it on poor financial results. Despite the crisis, Salesforce remains healthy and is growing fast, with revenue forecasts of \$31 billion in 2022, an increase of 17% from 2021, and \$50 billion in 2025. Attractive, therefore, to analysts, with a broad majority having issued a BUY recommendation.

YTD:
-43%

FOUNDED
1999

HEADQUARTERS
SAN FRANCISCO (US)

EMPLOYEES
73,000

2021 REVENUE
\$26.5 BN

CRM

An advert for the dating app Tinder, in Tokyo in November 2022.

MATCH GROUP

The harsh world of dating

APPS

On 12 September, Tinder celebrated its 10th birthday. The app revolutionised the dating service industry with its "swipe" feature for selecting or rejecting potential partners. But was it a happy birthday? If you look at the numbers, the answer is a definite yes. With 450 million downloads since its launch, 1.5 million "dates" per week and 75 billion "matches" in 10 years, Tinder is the most downloaded dating app in the world. But from a stock market perspective, the situation is more complex. The share price of Match Group – the parent company of Tinder as well as the dating apps Meetic, Match and Hinge – has been divided by four since its peak in October 2021. For the year to date, the stock has been one of the worst performers in the entire Nasdaq 100 Index.

Its main competitor, Bumble Inc. (which owns the eponymous dating app – and the world's number two dating app – along with Badoo and Fruitz) has lost more than 35% of its value since the beginning of the year.

Has online dating lost its mojo? Quite the opposite. According to Grand View Research, the dating market is expected to grow by 5.5% per year, reaching \$12.25 billion in 2030, up from \$7.5 billion in 2021. In the third quarter of 2022, Match Group's revenue increased 1% from the same period in 2021, with a 2% increase in paid users. The only downside is that the dating sector has now reached maturity and the saturation point is looming in terms of supply. This has not kept analysts from being optimistic about Bumble and Match, as most of them recommend buying both shares.

FOUNDED
1942

HEADQUARTERS
DALLAS (US)

EMPLOYEES
2,000

2022 REVENUE
\$3.2 BN

MTCH

YTD:
-63%

DATADOG

Cloud monitoring

CLOUD

Datadog serves organisations of all shapes and sizes, including Samsung, Maersk, Siemens, Lufthansa, WholeFoods and DreamWorks, to name just a few of its thousands of customers. Founded by two French engineers, the New York-based firm provides tools used to monitor and analyse business metrics on the performance of their cloud infrastructure, offered for example by Amazon Web Services, Microsoft Azure and Google Cloud. As enterprise cloud environments become larger and more complex, Datadog finds itself processing more and more data, and as fast as possible. It must therefore fine-tune its AI algorithms so that its customers can understand and gain control over what is happening in their systems.

Industry experts emphasise the addressable market's strong potential for rapid, long-term growth. On 3 November, Datadog reported a leap in quarterly revenue of 61% year over year to \$437 million. Operating cash flow came to \$83.6 million, with free cash flow of \$67.1 million.

Currently valued at \$24 billion, the US company has also recently announced two solutions that will expand its scope of activity into cloud security. All these strong points make Datadog an analyst favourite, with a large majority giving the stock a BUY recommendation.

FOUNDED
2010

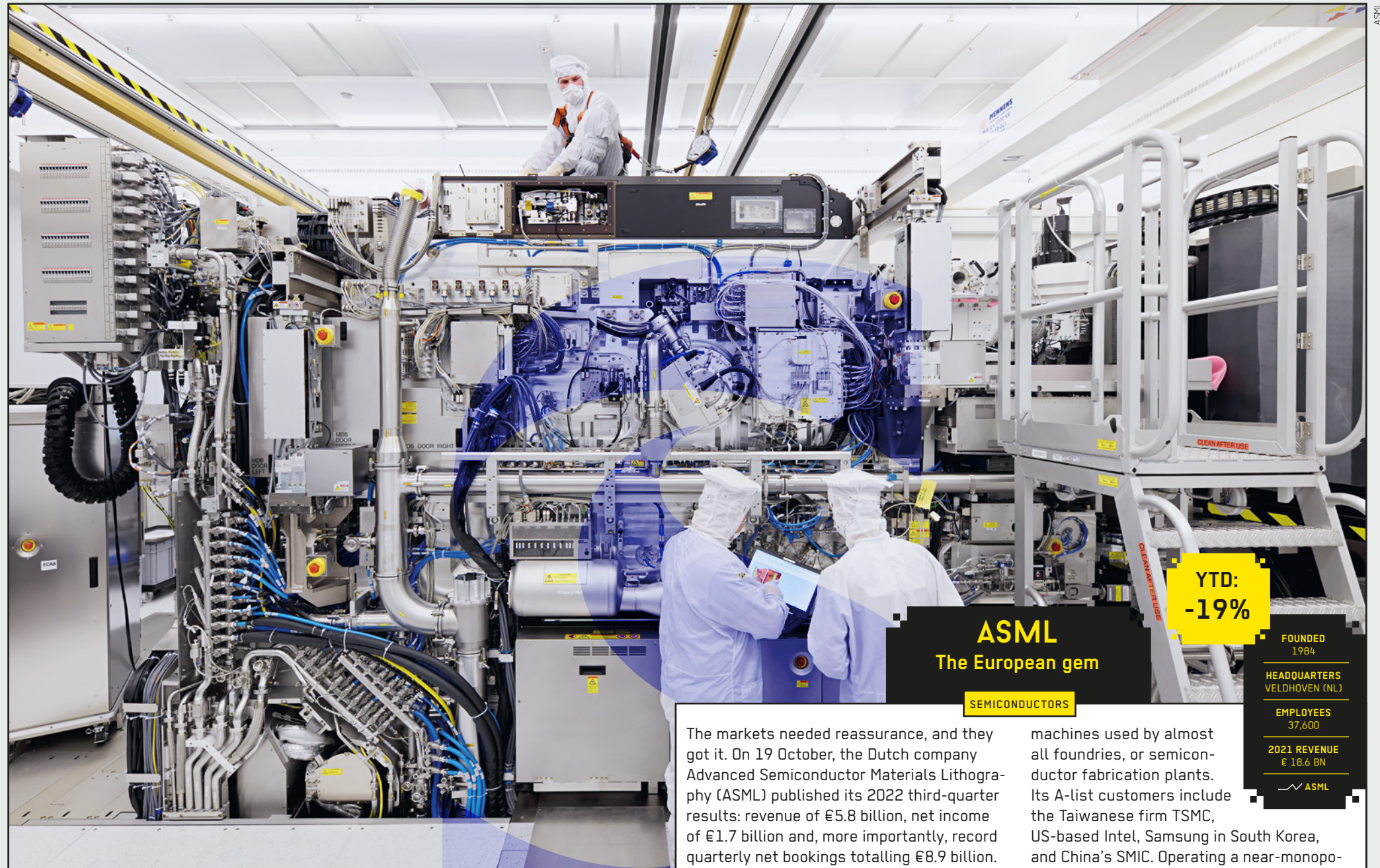
HEADQUARTERS
NEW YORK (US)

EMPLOYEES
3,200

2021 REVENUE
\$1.02 BN

— D006

YTD:
-54%



ASML employees assemble a lithography machine for manufacturing electronic chips.

ASML

The European gem

SEMICONDUCTORS

The markets needed reassurance, and they got it. On 19 October, the Dutch company Advanced Semiconductor Materials Lithography (ASML) published its 2022 third-quarter results: revenue of €5.8 billion, net income of €1.7 billion and, more importantly, record quarterly net bookings totalling €8.9 billion. The announcement shot ASML share price upwards, and it surged almost 50% between the beginning of October and the end of November. That was welcome news, as the stock had taken a beating in 2022, falling from \$800 in early January to less than \$400 mid-October. With the slowdown in consumer electronics sales (computers, smartphones, televisions), investors feared a slowdown in ASML's orders. But it never came.

ASML has become *the* stock to own. The Netherlands-based firm manufactures

machines used by almost all foundries, or semiconductor fabrication plants. Its A-list customers include the Taiwanese firm TSMC, US-based Intel, Samsung in South Korea, and China's SMIC. Operating a near-monopoly, ASML supplies 80% of the global market and 100% for the most recent equipment. Although the drop in sales of consumer electronics – where demand for chips is high – could have ricocheted through to ASML, the company has taken advantage of growth in cloud services. It expects strong results once again in the fourth quarter, with revenue of between €6.1 billion and €6.6 billion. Analyst confidence is high. Almost in unison, they recommend buying ASML stock, which is still trading at a discount of almost 25% from its level in January of this year.

YTD:
-19%

FOUNDED
1984

HEADQUARTERS
VELDHOVEN (NL)

EMPLOYEES
37,600

2021 REVENUE
€ 18.6 BN

— ASML



PALO ALTO NETWORKS

The safe cloud solution

CYBERSECURITY

If there is one tech stock that has remained relatively unscathed this year, it is US cybersecurity expert Palo Alto Networks. Over the first 11 months of 2022, the share price slipped only 5% and could even stand a chance of returning to its January 2022 level by the end of December. The Californian firm specialises in the two fast-growing sectors of Internet of Things (IoT) and cloud-native security. For its 2022 reporting period, ended 31 July, Palo Alto posted revenue of \$5.5 billion, up 29% year over year, for a profit of \$823.7 million. This strong financial health is set to last. In the first quarter of its 2023 financial year, Palo Alto brought in \$1.6 billion, up 25% on the first quarter of 2022. The company also forecasts revenue of between \$8.95 billion and \$9.1 billion for the 2023

financial year, equating to growth of 20%. And analysts love it. They still recommend buying shares, even though the stock has been a smidgen down this year.

FOUNDED
2005

HEADQUARTERS
SANTA CLARA (US)

EMPLOYEES
12,500

2021 REVENUE
\$5.5 BN

PANW

YTD:
-5%

The Palo Alto Networks company booth at Mobile World Congress in February 2022.

BROADCOM

Getting diversification right

SEMICONDUCTORS, SOFTWARE, COMPUTER ACCESSORIES

US semiconductor giant Broadcom is at the centre of one of the biggest deals of the year. In May, it put up \$61 billion in a cash-and-stock transaction to buy the US software company VMware. If the deal goes through, it will be the second biggest tech acquisition of the year, after Microsoft's colossal \$69 billion takeover of Activision Blizzard. But the acquisition, which is expected to be completed in 2023, has raised eyebrows from competition authorities. The Federal Trade Commission (FTC), the US antitrust watchdog, has opened an investigation, as has its British counterpart, the Competition and Markets Authority (CMA). But this isn't a first for Broadcom. Originally specialising in semiconductors, the company has over the years ballooned into a tech conglomerate. While it still manufactures chips for external customers, including smartphone and computer manufacturers, it also sells finished products such as Wi-Fi routers and modems.

In recent years, Broadcom has sought to expand its software business through mega-acquisitions. In 2019, the firm took over Symantec, developer and distributor of the well-known Norton Anti-Virus, for \$10.7 billion. One year earlier, the company also acquired CA Technologies, a US business software company, for \$18.9 billion. Following those deals, customers of the two acquired companies winced at the price hikes applied by Broadcom, which the consulting firm Gartner dubbed "spectacular". Investors, on the other hand, watered at the mouth. Between January 2019 and January 2022, Broadcom's valuation increased threefold. The decline observed since the beginning of the year (down 20% over the first 11 months) has only strengthened its appeal to analysts, who almost unanimously recommend buying the share.

FOUNDED
1961

HEADQUARTERS
SAN JOSE (US)

EMPLOYEES
20,000

2021 REVENUE
\$27.45 BN

AVGO

YTD:
-19%

In 2020, Broadcom agreed to end its anti-competitive practices, as per requested by European Commissioner for Competition Margrethe Vestager. The Commission will now have to look into the takeover of VMware by the American giant.

YVES HERMAN / AFP



INTERVIEW

"THE FALL IN OUR SHARE PRICE DIDN'T REALLY WORRY ME"

Logitech CEO Bracken Darrell, at the helm of the company for 10 years, outlines the future options the Swiss company is exploring.

BY LUDOVIC CHAPPEX

A single Swiss firm has edged into our almost exclusively American selection. Although not purely a tech company – unlike the cloud and cybersecurity stars in this feature – Logitech is closely linked to technology and innovation in general. In addition to its quarter earnings, which pleasantly surprised analysts (see p. 51), the Swiss computer accessory manufacturer's medium- and long-term outlook has also caught the attention of markets. Its American CEO, Bracken Darrell, will be celebrating his 10th anniversary at the head of the group in January. He granted us a virtual interview via Zoom from his office in California. This gave us the opportunity to discuss the current crisis, but especially his long-term vision for the company and how it is moving forward in its quest for innovation.

Tech stocks were hit hard in 2022. And Logitech was no exception. How did you handle it?

One advantage I've gained from being in the profession for the past 10 years is that I've learnt not to get too excited or too concerned about short-term events. That's why I haven't been really worried about share prices, to be honest. I'm much more concerned about the medium and long term. I believe that you find the real value of what you do in the long term. That's how I've always functioned. To give you a frame of reference, Logitech's stock was worth about \$7 when I became CEO. Today it's trading at around \$55.

What will Logitech look like in 5 to 10 years?

We'll be much more focused on the B2B market. Historically, Logitech has been a consumer-driven business,

but that started to change when we decided to focus more on video conferencing products about eight years ago. Since then, we haven't stopped growing on this market. These days, B2B accounts for about 25% of our revenue, and I bet that share will rise to 50% over the next few years. More and more individuals who own our products at home want the same user experience in the workplace – and vice

versa. And we're trying to drive that kind of circular approach.

Your products have won many awards for their design, but what about innovation at Logitech? Doesn't it take a back seat to criteria like ergonomics, the look and user experience?

R&D remains a key area of investment for us. Despite cost cuts

in many areas in recent months, we're increasing our investment in engineering. We probably have the world's best in-house expertise in mouse sensors. And we're also currently emphasising the development of artificial intelligence, especially for video conferencing. We announced a new product in October, which will launch next spring. It's an AI-powered tabletop camera that ▶

LONG-TERM VISION

"A very long-term person" is how Bracken Darrell describes himself. His 10 years (January 2023) at the head of Logitech confirms this credo. Over the course of this era, Logitech has unshackled itself from its over-dependence on mice and keyboards. The group's share price has also risen spectacularly. Before joining the Swiss firm, the congenial 59-year-old American had let his talent shine in management positions at a series of multinationals: Arthur Anderson, PepsiCo, General Electric, Procter & Gamble and then Whirlpool. He holds an MBA from Harvard Business School and a BA in English from Hendrix College in Arkansas. He also serves on the Board of Dean Advisors of Harvard Business School and the Board of Directors of Life Biosciences, a longevity company.



provides remote attendees with a front-facing view of speakers, regardless of the direction they're looking in the room. Apart from AI, we're also innovating in the range of sensors we use in our mice and cameras. Recently, we've even started investing in sensors that measure air quality.

Are these innovations developed in-house or are they acquired from other companies?

The two go together. We've always relied both on our own R&D and on integrating existing technologies. Often we start exploring internally and then acquire a company that provides technology we can use to complement and enhance product development. For example, five years ago we acquired a small Zurich-based company with human detection technology using cameras. The German police were using their solution to detect people outside their car on the motorways and receive notifications. In parallel, we'd already started working on similar technology, applying it inside conference rooms. We've invested a lot in these solutions, which have since become much more sophisticated. The system can accurately determine who is in the room and what movements are taking place.

"I JUMP EVERY TIME SOMEONE SAYS THE WORD COMPETITOR"

As regards air quality, we launched an in-house project a few years ago. Experiments began in Switzerland and Taiwan to measure CO₂ levels in meeting rooms. Participants were monitored and we observed how the discussions went. We were struck to note how much efficiency dropped as CO₂ levels rose. So we started developing our own product, and last year we acquired the Zurich company Airica

that had experience in this field. We're still investing in our own innovation, but we're also looking outside the company for valuable things that we can combine or buy.

The next few years will be ideal for acquisitions, as some smaller companies may be strapped for cash. Do you have any takeover plans?

We can't say much about that because we don't disclose what we're looking for. But we are constantly on the lookout, reviewing hundreds of opportunities every year. Now could definitely be a good time from an economic point of view. More companies will probably be trying to sell their technology. That said, price is not usually the deciding factor. The most important thing is to make sure it's a good fit strategically.

This autumn you launched a handheld gaming console called G Cloud in the United States. What are your first takeaways?

The reviews have been very positive. I was pleasantly surprised with the response, because I see it as a first-generation product. And cloud gaming is still in its infancy. We don't know how fast it will develop and what features people will like. We'll see where it goes, but I'm very optimistic.

The G Cloud format is very similar to the Nintendo Switch. Do you aim to compete with them?

You know, I jump every time someone says the word competitor... People are too focused on their competitors. I don't think of it that way. I think in terms of customer needs. In this case, I think you can have a Switch and our console. The

two products are used differently, as the G Cloud is an exclusively online console with games running in the cloud.

Your product line has shifted towards a more premium positioning in the last two or three years. Is that a segment you intend to pursue? It brings to mind the trajectory taken by Apple over the past decade...

We have definitely developed a lot in the higher-end product segment. We really admire Apple. The comparison is flattering and an inspiration for design and user experience.

Do you see any signs of improvement in the economic climate?

One extremely positive thing is that supply chain issues have abated considerably, both in component availability and freight container shipping. The challenges we face are prevalent for most companies these days. Inflation and currency volatility hit us hardest in the last quarter, impacting our gross margin by 500 basis points. And these difficulties will continue to affect us. But in time they will work themselves out. In the short term, inflation will eventually be brought under control. Currency rates will stabilise and probably return to where they were. So I'm positive for the medium to long term.

Aren't you concerned about the supply issues caused by China's zero-COVID policy?

We have gained flexibility on that point. Three or four years ago, we had no production capacity outside China. Today, 20% of our capacity comes from other countries, and I think the share will be at 25% or 30% by the end of the year. That means we have the resources to increase our production if necessary. I'm pleased with our progress in that arena. With all the customs tariffs, COVID and geopolitical uncertainty, the system gives us flexibility.

You have been the boss at Logitech for 10 years. What are the key lessons you have learnt?

Firstly, that risk management is crucial. You always have to be able to assume responsibility for the risks you take. Sometimes a product category is successful for

a while and then it stops working. You have to be prepared to change things quickly. Often we don't react fast enough. That's another important aspect to develop: the instinct and courage to make changes rapidly. And finally, probably the most important lesson is this quote from

Winston Churchill, which Logitech founder Daniel Borel loved, "Success is never final, failure is not fatal." And it's true, you have to start over every day. What you achieved yesterday is over. And failure is never fatal if you know how to manage the risk. ▲

LOGITECH

Best in class

COMPUTER PERIPHERALS, VIDEO CONFERENCING, AUDIO EQUIPMENT

“Logitech is like a really nice house in a bad neighbourhood,” as one analyst put it when we were preparing this report. Active in the ultra-competitive computer accessories markets (video conferencing, streaming, gaming, audio, mice, keyboards, etc.), the Swiss firm is nonetheless esteemed by a large majority of analysts. It is known for setting high standards for the quality and user-friendliness of its products, but also, increasingly, for their careful design. The brand has carved out a spot for itself at the forefront of video conferencing and gaming, both sources of long-term growth. Of the record-breaking number of new products (more than 20) unveiled last quarter, Logitech launched the G Cloud handheld gaming console in the United States, in partnership with the Chinese firm Tencent for the software. The gadget has received favourable reviews from critics. This test run could eventually grow into a major new market.

In 2020 and 2021, Logitech fully benefited from the pandemic lockdowns, posting a strong rise in sales. The explosion in remote working propelled the group's share price to almost 120 Swiss francs in early June 2021. Next, a correction drove the share price sharply downwards, before it was caught up in the all-round tech stock debacle, falling below the 45 Swiss franc mark last October.

Despite today's adverse market conditions (eroding consumer purchasing power, exchange rate fluctuations, supply chain problems), many experts feel that the Lausanne-based firm nevertheless has the arguments it needs to outshine its competitors. Logitech's quarterly earnings report published at the end of October reassured analysts. Revenue was down 12% year on year to \$1.149 billion, and profits fell 38,2% to \$82 million. But amid the current crisis, a much worse performance had been feared. Relief showed through the day after the results were announced, in the sharp rise in Logitech's share price. Since then, the stock has climbed by more than 25% and is currently hovering around 55 Swiss francs.

The company trimmed its operating expenses by 15% in the last quarter compared to the previous year. Logitech maintains its revenue targets for the current financial year, expecting a decline within the range of 4% and 8%, as the holiday period is traditionally brisk with high sales volumes.

YTD: -26%

FOUNDED 1981

HEADQUARTERS LAUSANNE

EMPLOYEES 8,200

REVENUE 2022 \$5.48 BN

LOGN



Workers line up to get tested for COVID-19 at the Foxconn factory in Wuhan in central China's Hubei province (5 Aug).

China falters

Electronics suppliers have started leaving China, unnerved by Beijing's zero-COVID policy and rising wages. India and Vietnam stand ready and anxious to welcome them.

BY JULIE ZAUGG

In recent weeks, the uninformed observer might have easily mistaken the southern Indian province of Tamil Nadu for the Pearl River Delta, as it looked in the early 2000s. Vast, spanking new industrial parks, filled with solar roof factories, line the road from Chennai to Bengaluru. This autumn, Apple announced that some iPhone 14s, its latest smartphone, would be manufactured there, as are Amazon Fire TV boxes and Foxconn computer chips. A small revolution in the world of consumer

tech, which until now has been dominated by an ecosystem of suppliers operating out of southern China.

The brisk activity there reflects a more all-encompassing shift. "Vietnam, Malaysia and India have picked up some of the electronics manufacturing business that used to be carried out in China. Bangladesh has taken over textile production, while Mexico and Colombia have cornered consumer goods production for the US market," says Stephen

Olson, a trade expert at the Hinrich Foundation based in Singapore.

The current changes are starkly apparent in Vietnam, where some Apple MacBooks, AirPods, smartwatches and iPads are now produced. The country also makes Google's new Pixel 7 smartphone, Microsoft Xbox gaming consoles, Samsung smartphones, and toys for Hasbro.

At the other end of the spectrum, "high value-added operations have

been relocated to Taiwan, South Korea, Europe or the US," notes Vishrut Rana, an economist at S&P Global Ratings. In July, Volvo opened a factory in Slovakia, its first new facility in Europe in 60 years. Similarly, 30% of Samsung's suppliers are now in South Korea.

These massive movements are all directed away from China. MDS Transmodal estimates that the share of smartphones manufactured in the country fell from 75% to 67% between 2016 and 2021, clothing and accessories from 41% to 37%, shoes from 72% to 65%, and furniture from 64% to 53%.

"The Chinese government's zero-COVID policy has caused serious disruptions in the supply of goods to Western brands," notes Antonella Teodoro, a senior consultant in international shipping at MDS. "They've

come to the realisation that they should avoid putting all their eggs in one basket and diversify their supply chains." Some factories in Shanghai were closed for more than two months last spring, when the entire city was on lockdown. And the port of Ningbo was forced to halt operations several times in 2021 and 2022, due to COVID-19 cases detected among its workers.

The share of smartphones manufactured in the country fell from 75% to 67%

But China's status as the world's factory is also being challenged as a result of more deep-seated changes. "Wages have risen dramatically over the past decade, and the country has lost its competitive cost advantage," says Stephen Olson. A Chinese factory worker now earns an average of 4,500 yuan (about 600 Swiss francs) a month, about twice as much as counterparts in India or Vietnam.

On top of that is the demographic crisis. "As the population ages, the number of people of working age continuously decreases," Vishrut Rana says. And Generations Y and Z no longer want to toil in a factory for miserable wages like their parents.

These countries have introduced other enticing perks to attract electronics superstars. "Vietnam has created tax-free industrial zones, signed free-trade agreements with many countries, including the European Union, and keeps wages low," Rana explains. The country has also developed its transport infrastructure. "The shipping giant MSC has recently announced that it will build a new transshipment container terminal there, which will significantly increase the country's shipping

capacity," Antonella Teodoro says. Meanwhile, India has taken strides to improve its roads, airports, ports and notoriously strained power grid. "Delhi has launched a generous subsidy scheme for startups in India," Teodoro adds. The \$26 billion programme includes \$10 billion set aside for the semiconductor industry alone. Another big draw for foreign brands is the huge domestic market, which is already the world's second-largest market for smartphones.

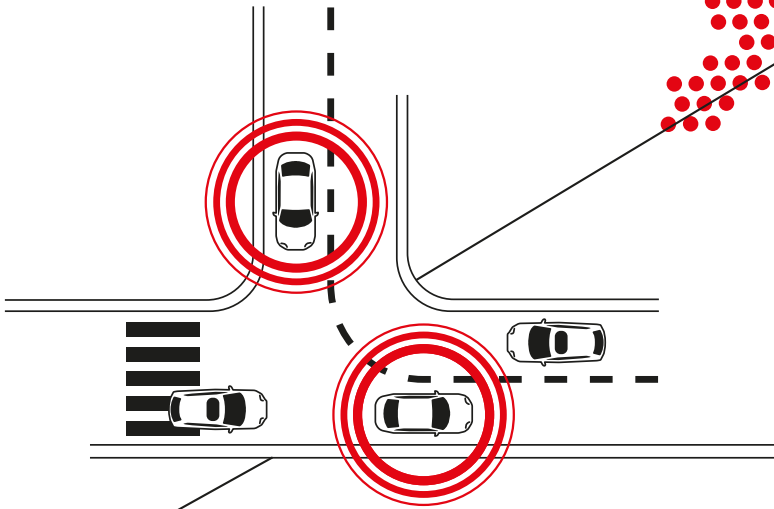
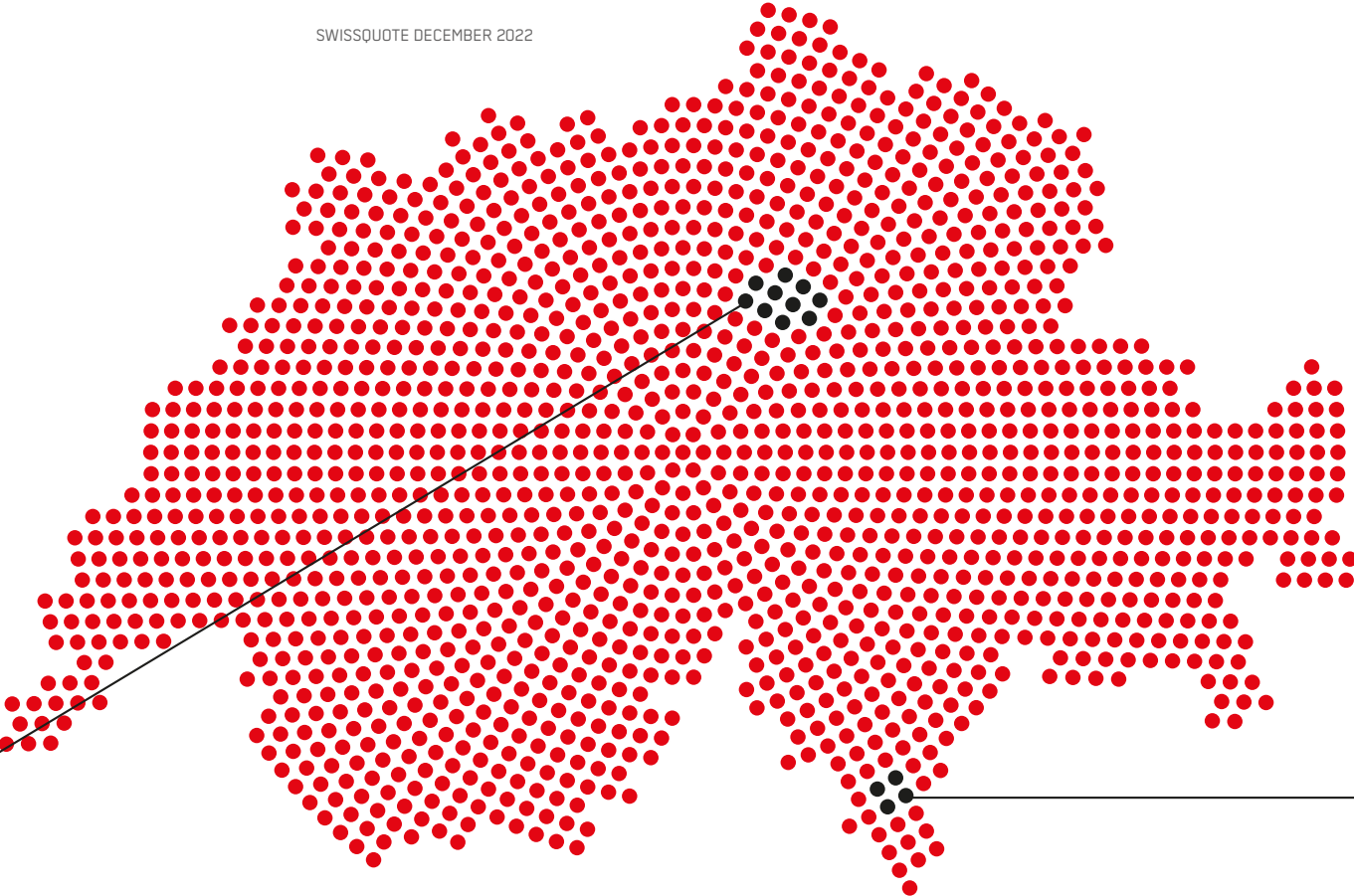
Despite these developments, experts sense that no single country will completely replace China. "High value-added goods, especially tech products, require a cluster of suppliers concentrated around a main assembly facility, along with reliable infrastructure, a skilled workforce and support from local government," says Edward Tse, founder of the consultancy Gao Feng Advisory. "China excels at creating these kinds of ecosystems."

Other industries are not about to leave and are actually strengthening their supply chains in China. As an example, he points to electric vehicles from the ultra-fast fashion brand Shein, whose subcontractors are concentrated in Guangdong. Even smartphone manufacturers are reluctant to abandon the country altogether. Instead, they prefer a "China Plus One" strategy, in which another country – mainly Vietnam – covers the low value-added parts of the production process, such as assembly and packaging.

Eventually, however, "these new destinations will try to develop their own national champions," says Antonella Teodoro. The Indian firm Tata is a potential candidate. Its 222-hectare site in Tamil Nadu already manufactures components for iPhones. The giant has also invested \$5 billion to build a factory that can make vehicles for foreign brands and plans to start building solar panels and semiconductors for export. ▲

SWISS STARTUPS IN THIS EDITION

BY GRÉGOIRE NICOLET



KASKO2GO

CALCULATED RISK

Number of employees	40
Founded	2017
Headquarters	Zug

In early November, the reinsurance giant Munich Re approved the use of software from this Swiss startup specialised in traffic accident prediction. “We are the first company in the car insurance sector to be granted Munich Re’s seal of approval,” announces Genadi Man, Chairman of the Board of Directors, proudly. In other words, the technological solution developed by kasko2go over the last five years is now guaranteed by the German reinsurer, like a safety stamp for car insurers who would like to use it.

For the past 10 years, insurers have been trying to calculate risks more accurately so that they can personalise their offers. In addition to the data already used to set insurance policy

prices (age, gender, nationality, etc.), kasko2go provides insurers with the precise probability of traffic accidents based on the driver’s address, using AI-powered risk assessment software. To determine this risk, the solution compiles parameters in real time, such as weather, traffic density and historical accident data. “Every day we process more than one petabyte of data,” says Genadi Man, “the equivalent of the entire Netflix directory viewed three times.”

In June, Kasgo2go took home the prestigious DIAMOND Award (panel of more than a thousand industry experts) for its strategic impact on the insurance sector. In 2021, Swiss Re won the award for its risk assessment software for driver assistance systems.

XFARM TECHNOLOGIES

FARMING GOES HIGH TECH

Number of employees	67
Founded	2018
Headquarters	Manno (TI)

The main aim of precision agriculture is to reduce the use of water and pesticides. And in the context of climate change, the market is growing fast. Estimated at \$11.1 billion in 2021, agritech, as the sector is called, is expected to be worth \$32 billion worldwide within the next 10 years. XFarm, based in Italian-speaking Switzerland, intends to be part of that.

Created at the incubator Tecnopolo Manno in Lugano, the startup develops solutions that combine artificial intelligence, Internet of Things (IoT) sensors and IT systems to manage farms more efficiently. Via an app, data on soil moisture, temperature and satellite images is analysed to let farmers know when is the best time to irrigate or use a phytosanitary product, depending on the type of crop.

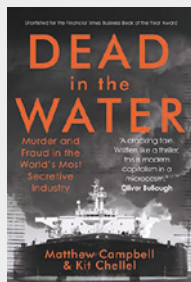
By the end of October, 120,000 farmers were using the xFarm app, covering more than one million hectares of planted land. This impressive growth is mainly due to two key partnerships in the food industry. One is with the French

multinational Lactalis, the world’s largest dairy company, and the other with the Italian pasta company Barilla. These giants can now monitor their supply chains accurately and measure their carbon footprint.

xFarm’s technology came about as the result of a merger at the end of 2021 with Farm Technologies, an Italian startup specialised in the analysis of satellite images for the early detection of plant diseases. Still based in Manno, in the canton of Ticino, xFarm subsequently raised €17 million in August in a funding round led by Swisscom Ventures.

And the future looks bright. With the European Union’s new environment-focused common agricultural policy for 2023-2027, the Swiss company is in an ideal position. As xFarm’s CEO Matteo Vanotti, himself a farmer, says, “EU farmers who reduce their CO₂ emissions will be granted new subsidies. Our solution will enable them to achieve this goal and certify their farm’s carbon footprint.”

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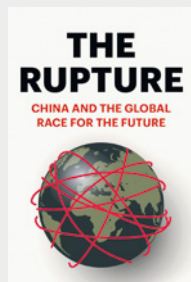
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DEAD IN THE WATER

**MURDER AND FRAUD IN THE
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INDUSTRY**

By Matthew Campbell and Kit Chellel
Atlantic Books

This real-life story, full of tragedy and passion, heroes and villains, is not an easy one to tell. But this book masterfully turns it into a gripping thriller. Authored by two Bloomberg journalists, *Dead in the Water* centres around the investigation into the murder of maritime surveyor David Mockett 10 years ago in Yemen. This intricate international saga also details an insurance scam and a commercial dispute between ship owners and insurers. Along the way, Chellel and Campbell delve into the depths of international shipping – an industry that is key in keeping our global economy functioning – and explain some of the secrets behind Lloyd's of London. Their tale earned them a spot on the shortlist for *The Economist's* 2022 Business Book of the Year Award.



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THE RUPTURE

**CHINA AND THE GLOBAL RACE
FOR THE FUTURE**

By Andrew Small
Hurst Publishers

A long-time expert on policy and relations with China, Andrew Small explains how Western politicians, thinkers and business leaders who once worked closely with Beijing have fiercely turned against the country's government. He asserts that the COVID-19 pandemic played a role in accelerating this shift in attitude. *The Rupture* also describes Europe's progress towards technological and economic dominance, and Washington's ramped-up efforts to rebuild ties with old allies in response to China. All the while, a Chinese-led coalition from Moscow to Kabul is forming. An upheaval in the balance of ideas as much as in the balance of power.



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The incredible success of DeepL's web translator has not abated. The DeepL mobile app, however, has not garnered as much attention. On top of traditional text translation in 29 languages, the tool has a speech-to-text feature and uses voice synthesis to produce a spoken translation. Another key advantage is the capability to translate text from an image on your smartphone.



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ACALENDAR 2

THE GOOGLE CALENDAR ALTERNATIVE

This v2 of the famous German calendar app offers an all-new look and feel. Offering all the usual features, the app, in addition to being easy to use, has a readable, pared-down interface and, perhaps more importantly, fully customisable data privacy settings.



Google Play
Free, in-app
purchases

SPLITCLOUD

SHARING HEADPHONES

SplitCloud's developers say it is the only streaming music player that lets users share headphones to listen to two different songs at the same time. But this feature opens up other possibilities, such as listening to an audiobook and a piece of music simultaneously with a single set of headphones.



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INVESTING IN HOMES SWEET HOMES

Single-family home rental is a fast-growing market, especially among millennials in the US. Institutional investors have taken notice.

BY JULIE ZAUGG

In the summer of 2010, every day, Hudson Cashdan would go to the courthouse in Atlanta, in the southern United States. He went there to negotiate offers to buy homes from owners who had defaulted on their mortgage loans in the fallout from the subprime crisis in 2007-2008. “We were buying three- or four-bedroom family homes for \$50,000 or \$60,000. Pre-crisis, they would have gone for \$120,000,” says the co-founder of the financial advisory platform TopStonks.

He bought several hundred properties that way and pooled them into three funds. “We invested about \$10,000 per house to fix them up, then rented them out for about \$1,000 to \$1,200 per room,” he explains. The entrepreneur then gradually resold the houses, selling off the last one in 2020. “I made a 12.5% return on investment dealing in these properties,” he says.

Many have since emulated Hudson Cashdan’s experience. “For a long time, buying single-family homes to rent was a niche industry, dominated by individuals who never owned more than about 10 properties,” says Joseph Gyourko, professor of real estate and finance at the Wharton School of the University of Pennsylvania. “But since the 2007-2008 crisis, large institutional investors have flocked to the sector.”

“Many people from Generation Y and Z cannot afford to buy a home as their parents did”

François Botha, analyst at the real estate company Dashdot

Plummeting house prices and the wave of foreclosures that hit small homeowners during the subprime crisis enabled these investors to

snatch up thousands of homes en bloc. Blackstone was the first investment fund to become active in the market, back in 2012, when it started buying homes in Phoenix. J.P. Morgan Asset Management, Goldman Sachs Asset Management, Invesco, JLL, and even the Swiss company Partners Group soon followed suit.

The trend has risen steadily over the past decade. But it has gained momentum in the last couple of years, fuelled by rising rents and, more recently, higher interest rates (see inset on p. 61). Institutional investors spent \$45 billion on single-family rentals in the United States in 2021, up sharply from \$3 billion in 2020. Over these two years, they alone bought 18% of single-family homes sold. By 2030, institutions are expected to have accumulated 7.6 million homes, or more than two-fifths of all family rentals, according to Metlife Investment Management. ▶

In Europe, the UK firms Aviva and Legal & General have started buying family homes in the United Kingdom. Other institutional investors are tapping into property markets in Germany, Ireland, the Netherlands and Scandinavia. “These are large-scale acquisitions that encompass tens of thousands of homes,” Joseph Gyourko says. For example, the investment firm Invesco announced in 2021 that it would spend up to \$5 billion over the next three years to buy about 20,000 single-family rental homes.

Many of these housing portfolios have been pooled into real estate investment trusts, or REITs, and listed on the stock exchange. The largest REIT, Invitation Homes, owns more than 80,000 homes. Tricon Residential has over 33,000 and American Homes 4 Rent over 57,000. In the US, one unique requirement is that REITs have to pay out at least 90% of their taxable income in the form of dividends.

“REITs are the best way for small investors to gain exposure to the single-family rental market,” Joseph Gyourko says. Unlike buying prop-

erty, REITs do not require a large upfront equity investment and are highly liquid, as investors can sell their shares at any time.

The COVID-19 pandemic and its long lockdowns have further accentuated the trend

And they can make for a profitable investment. Between 2016 and 2021, single-family rentals generated annual returns of 21% in the United States, compared to 12% for flats, 5% for offices and a 1% decline for commercial property. Several long-term demographic changes are driving the market.

“Many people from Generation Y and Z cannot afford to buy a home as their parents did, because prices have risen so dramatically in the most economically attractive regions. Also, banks have become more cautious about granting mortgages and applied stricter criteria since the 2008 crisis,” says François Botha, an analyst at the

real estate company Dashdot. In some urban areas, especially on both coasts of the United States and in certain European capitals such as Paris or London, the average price of a small single-family home is now more than 1 million Swiss francs.

In any case, Gen Y and Z want very different things from previous generations. “The post-war cohort had the American dream of buying a big house in the suburbs with at least four bedrooms, a garden and a garage,” says Eric Sussman, adjunct professor of real estate with the Anderson School of Management at University of California Los Angeles. “That’s no longer true with millennials. They marry later, have fewer children and often move when they change jobs.”

Millennials have a more positive attitude towards home rental. “They are used to renting goods and services in the shared economy,” the academic says. “Owning a home is no longer their end goal.” Pew Research Center estimates that in 2016, only 37% of millennials occupied a home they owned, compared to 56% of baby boomers in 1981, when they were between 25 and 35.

SAME TREND EMERGING IN EUROPE

These trends are also gaining ground in Europe, especially Germany, the UK, Austria, France, the Scandinavian countries and Switzerland, where the percentage of renters is high and growing. At the end of 2020, Switzerland had 2.3 million rented homes, or 61% of the market. In Germany the share is close to 50% and in the UK just over 30%.

As millennials hit their thirties and start having children, they want more space and better schools. “This pushes them out to the suburbs and drives the market for single-family rentals,” Hudson Cashdan says. The COVID-19 pandemic and its long lockdowns have further ac-

centuated the trend. “Many companies now let employees work from home,” François Botha says. “You can keep your job and still move to more rural areas or to the other side of the country.”

In the United States, people are migrating to the Sun Belt, the states that stretch along the southern parts of the country between the coasts, including Arizona, Texas, Florida and Georgia. Rents are cheaper, houses are bigger, taxes are lower, and job markets are strong, especially in cities like Austin, Phoenix and Atlanta. Unsurprisingly, these big cities are where most REITs buy properties.

In 2016, only 37% of millennials occupied a home they owned, compared to 56% of baby boomers in 1981, when they were between 25 and 35

At the other end of the spectrum, more baby boomers are moving into rented flats and houses when their children leave home. In the UK, the percentage of people age 55 to 64 who rent their homes has almost doubled since 2011.

Not everyone is happy about institutional investors moving into the single-family rental market. “In some markets they are buying up all the individual homes, driving up prices and squeezing out individuals,” Eric Sussman says. Rents on single-family homes rose 23% in Orlando and almost 25% in Miami between July 2021 and 2022.

However, the situation could soon become brighter as several REITs have started building their own homes. Of the 3,500 family homes that Zougeois Partners Group will soon own in the US, 1,000 are new builds. ▲



OPPORTUNITY BEHIND RISING INTEREST RATES

Property markets have been completely upended in recent months. Mortgage interest rates have risen sharply after the spate of key interest rate hikes announced by most central banks. The average rate on a 30-year mortgage in the United States cleared the 7% mark in mid-November. In the United Kingdom, two-year loans had a rate of almost 6.5%. And Switzerland’s average rate for a 15-year loan climbed to 3.50%. Until six months ago, in most countries these rates topped off at 1%.

“Many individuals will no longer be able to afford to buy a home at these high rates,” says Eric Sussman, a property expert with the Anderson School of Management at University of California Los Angeles. He predicts that

some owners could even lose their homes when it comes time to renew their mortgages at higher rates. That represents an opportunity for institutional investors. “Interest rate increases have not yet had a real impact in practice, but they will eventually benefit large property companies that are in a better position than individual buyers to secure good loan terms or absorb the high interest rates,” says Hudson Cashdan, co-founder of TopStonks, a financial advisory platform. He adds that the largest companies have enough cash on hand to avoid buying on credit. And the individuals who can no longer afford to become homeowners are probably tomorrow’s renters, therefore contributing to these companies’ rental property portfolios.

ANALYST OPINIONS

UNDERVALUED STOCKS

Investing in a listed real estate investment trust (REIT) is a way of diversifying your portfolio and buying property without tying up significant amounts of cash over a long period. They also provide a regular source of income. Lisa Springer, an analyst for Singular Research, explains in an article how US law requires REITs to pay 90% of their taxable income to investors. As a result, investors benefit directly from rent increases and other gains made by REITs in the form of higher dividends. She points out that the yield on their shares regularly exceeds 2.5%. Currently, she recommends looking into Sun

Communities, which has a portfolio of second homes in the US, Canada and the UK, and Camden Property Trust, which has a strong foothold in the fast-growing Sun Belt states in the southern United States. In Europe, Vonovia in Germany, Gecina in France and Aroundtown in Luxembourg have been hit hard by the COVID-19 pandemic and the war in Ukraine. These factors have slowed the European property market by instilling uncertainty and creating a shortage of building materials. However, their stocks are now considerably undervalued, which analysts say makes them a good investment opportunity.



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This process allows you to lock up crypto assets in exchange for rewards. It is a similar idea to receiving interest on savings, transposed here to the world of cryptocurrencies. But the percentages paid out are much higher than those paid in traditional finance. For example, the return is 13.95% gross annual for the token Polkadot [DOT]. The frequency of the reward payouts depends on the blockchain you choose. For example, Polkadot pays out rewards every 24 hours.

Where does the reward come from?

The locked crypto assets are used to guarantee the security of the network and the validity of each new transaction. That's why you may also hear "validators" as a term for people who stake cryptocurrencies. Stakers receive new tokens in exchange for locking their assets and the services they provide to the blockchain. Returns are paid out at each validation cycle. The technology used, called "Proof of Stake", does not require immense amounts of energy to process calculations. It is far more environmentally-friendly than traditional cryptocurrency mining.

What is the process for Swissquote clients?

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Is there a minimum required duration for staking?

This factor depends on the blockchain you choose, not on Swissquote. For instance, XTZ does not impose any lock-up period. The maximum lock-up period is three days for SOL, while for DOT, it is 28 days. ETH is a special case. The blockchain switched from a Proof of Work to a Proof of Stake consensus on 15 September, and a new network update is planned for September 2023 at the latest. Before that date, you cannot cancel ETH staking or receive its full rewards. Staking ETH therefore requires a long-term investment. Here again, this limitation is not specific to

Swissquote. The requirement is set by the Ethereum network itself.

It should also be noted that we need two working days to process staking or unstaking requests, regardless of the blockchain, and funds will be blocked during that time.

Why do some tokens offer a higher reward than others?

The percentage paid out depends on the community, foundation or company behind the token. There are several models. In most cases, rewards are based on the number of tokens staked out of the total number of existing tokens.

What are the risks?

Given the high volatility of cryptocurrency prices, the token that you choose to stake could fall in price during the staking period. However, the strategy of "holding" your cryptocurrencies has, from a long-term investment perspective, proven to be a good one. Staking provides additional income. ▲



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Dependable hybrid

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Plug-in hybrid propulsion is often seen as just a compromise technology. But it has really come into its own in BMW's new compact people carrier, offering impressive performance and versatility to boot.

Alongside its popular ranges of SUVs and other coupe crossovers, BMW still has faith in one segment that most of its competitors have dropped: the people carrier. The Bavarian carmaker has revamped its 2 Series Active Tourer, offering not only a practical, compact vehicle (4.39 m long) but also the very best of its technology. The elegant and stylish cabin features a touchscreen that controls everything from the vehicle's head-up display to its massage seats.

The 2 Series has a classic silhouette, the only difference being its shorter front overhang and large vertical grille. It offers all the advantages of an everyday family vehicle: roominess, smooth handling and plenty of window space. This premium rechargeable hybrid model is also highly versatile in terms of energy use, with a fuel capacity of 47 litres and net battery capacity of

14.3 kWh. Both of those figures are an improvement on the previous generation, which had a smaller range.

And let's not forget the vehicle's electrifying performance capabilities! The front wheels are powered by a three-cylinder 1.5 litre turbo engine, while the rear wheels are driven by the vehicle's electric motor. Together they generate up to 326 hp and a hefty 477 newton metres of torque. In other words, this little people carrier is a real "sleeper", capable of going from zero to 100 kph in just 5.5 seconds and blowing away GTIs with its acceleration. The vehicle's weight (nearly two tonnes empty) is well distributed and low to the ground for smooth handling around bends. The electric motor's thrust also makes it possible to fine-tune the vehicle's handling. The hard, short-stroke brake pedal takes some getting used to, but the transition between energy recovery and action on the disks is smooth. In any case,

the 230e is too well-mannered to be mistreated. For everyday use, forget Sport mode and use the smoother Efficient mode instead. It has nearly as much pep and is ideal for getting the most out of both power sources, thanks to predictive energy management. Fuel consumption when driving with an empty battery (similar to a full hybrid) is six to seven litres per 100 km for journeys featuring a mix of hilly, urban and motorway driving. With the battery charged, it is possible to burn almost no fuel at all, as long as you don't exceed the vehicle's electric range of 93 km. In cases like this, the BMW 230e remains relatively alert. This model is potentially very economical to use, and the test version, with options, costs 77,600 Swiss francs. You're buying the peace of mind afforded by this versatile, all-wheel-drive vehicle that comes with a 10-year maintenance programme, which is no longer the norm among high-end carmakers. ▀

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TRAVEL

A stroll along the canals of East London

The East End has in recent years become one of London's vibrant hotspots. Once shunned, this area has blossomed into a fantastic destination for a weekend getaway.

BY JULIE ZAUGG, IN LONDON

East London, long known for its working-class neighbourhoods, bustling docks and jellied eels, has undergone a radical transformation over the past 20 years. This traditionally poorer area of the UK capital hosted the 2012 Olympic Games, which fast-tracked its metamorphosis. To explore these vibrant, multi-ethnic neighbourhoods, nothing beats a stroll along the canals. The waterways that used to serve the factories scattered throughout East London and are now a haven of greenery amid the urban tumult. ▶

CAMDEN ROAD

COAL DROPS YARD

ANGEL

HAGGERSTON

VICTORIA PARK

OLYMPIC PARK

The entire walk covers 11 km in all and can be completed in one day.

5 A green neighbourhood near Haggerston.



1 A houseboat behind King's Cross station. Several boats of this type have turned into floating stalls.

From the Camden Road tube station, take the stairs down to Regent's Canal. Two options: you can either take a detour 500 metres west and enjoy the eccentric jewellery and clothing stalls of Camden Market, or head straight east. Lined with blocks of flats inspired by old industrial buildings, the canal meanders through an urban backdrop. Soon you are at Coal Drops Yard, a former coal warehouse behind King's Cross station that is now brimming with restaurants and shops. King's Cross is also home to the London Canal Museum.

Continuing onwards... Every now and then the wooden locks open to let a boat through. Moored along the canal, the elongated, colourful houseboats have cheery names like Hopscotch, Velvet Morning and Harvest Moon. The smell of wood fires confirms that people actually live in many of them. One has been converted into a floating bookshop, another sells dog treats, while yet another offers tarot card readings.

Around Barnesbury, a short section of the canal runs under a tunnel,

forcing you to walk up through the area around Angel. The neighbourhood's pavements have metal signs directing you back to the water's edge. This is when you really enter London's East End. The canal banks become more unkempt, lined with colossal rusting gasholders. Victorian-era factories topped with slender red brick chimneys creates the perfect aesthetic. Some have



2 The Angel district, known for its factories that have been converted into restaurants.

been converted into restaurants with waterfront terraces. The problem is choosing just one. Your options include classic pub grub at Narrowboat, inventive cuisine and all-new dining experience created by chef Gabriel Waterhouse at the Water House Project, or Italian specialities at Ombra. The keen observer will note the artworks pegged along the waterfront, such as installations of large portraits by London photographer Jenny Lewis.

This stretch of the canal also features a number of sights for visitors to enjoy. On the outskirts of Haggerston, the Museum of the Home brings fascinating insight into British homes and home life from 1600 to the present day. In Hackney, you can visit the pigs, chickens and donkeys at Hackney City Farm. Every Sunday, Columbia Road Flower Market sets out its wares, filling the street with bulbs, bouquets and pots of all shapes and colours.

Back along the canal, the post-industrial setting gradually gives way to weeping willows, bird-filled hedges and wild flowers as you approach Victoria Park. The 86-hectare expanse is one of the largest green spaces in the city. On Sunday, the park hosts a market selling farm

4 View of the Queen Elizabeth Olympic Park, constructed for the 2012 Olympics. The building houses a football stadium, a velodrome and an aquatic centre.



produce and street food. Its playground is one of the city's best, with three giant slides, a splash pool and a skatepark.

To continue your stroll, take the Hertford Union Canal, which runs along the edge of Victoria Park, to Hackney Wick, a hodgepodge neighbourhood of craft breweries, artists' studios and light industry. In the evening, you can enjoy the lively atmosphere at the Queen's Yard, sipping a beer at one of the long wooden tables on the canal or dancing the night away at the Colour Factory, a nightclub and live music venue.

It's time to leave the canal and venture into Queen Elizabeth Olympic Park, opened for the 2012 Olympic Games. All the memorable buildings from the event can be found here: the oval-shaped London Stadium, now home to West Ham United, the wave-shaped Aquatic Centre designed by architect Zaha Hadid, and the UFO-like Velodrome in wood.

In the distance are the glass towers of the revamped Stratford Waterfront district, home to the sprawl-

ing Westfield Shopping Centre and East Bank cultural hub. It is about to open and will bring together prestigious education and cultural organisations, such as the Victoria and Albert Museum, Sadler's Wells Ballet Company, the London College of Fashion and the BBC. ▴

GETTING THERE

Swiss and British Airways operate several daily flights from Geneva and Zurich to London City Airport in East London.

WHERE TO STAY Shoreditch House

This private club has a swimming pool, bar and table tennis room. Non-members can book tastefully decorated rooms in the heart of the vibrant Shoreditch district.

Ebor Street, London E1 6AW

Batty Langley's

Located on a cobblestone street in Shoreditch, this hotel looks like something out of a Sherlock Holmes novel with its antique furniture, shelves overflowing with books and claw-foot bathtubs.

12 Folgate St, London E1 6BX

TOP SPOTS

MUSEUM OF THE HOME

136 Kingsland Rd, London E2 8EA
This original museum highlights the different ways people have lived, now live and will live in the future. On until January, a temporary exhibition looks at how Christmas, Diwali, Hanukkah and Lunar New Year are celebrated at home.

THE VIKTOR WYND MUSEUM & COCKTAIL BAR

11 Mare St, London E8 4RP
Curiosity buffs will love this museum's eclectic and carefully curated collection. And its cocktail bar. You can sip an absinthe-based elixir surrounded by dodo bones and taxidermied animals.

BARGE EAST

River Lee, Sweetwater Mooring, White Post Lane, London E9 5EN
For a unique experience, why not book a table on this refurbished boat with a tasting menu featuring only local ingredients? In the summer, book ahead to enjoy the lovely canal-side terrace.

HACKNEY BRIDGE

Units 1-28, Echo Building, E Bay Ln, London E15 2SJ
Located on the edge of the Queen Elizabeth Olympic Park, this destination includes a spacious building filled with stalls selling food from around the world, a co-working space and a second-hand goods market.

BOUTIQUE

SLED FOR AESTHETES

Founded by a French engineer, Akonite Studio has made a name for itself designing luxury products for enjoying the snow and ice. One of Akonite's bestsellers, the Gentiane sled has won several awards, including a German Design Award in 2019. The sled is handmade in Brittany out of noble materials, with an ash wood and fibreglass frame, leather handles, and a seat in black cork. Riders slow down and stop the traditional way, using their feet.

akonite.com
CHF 4,770.-



ODE TO HANDWRITING

Back in vogue, handwriting is synonymous with creativity and personality, and is also said to reduce stress. Rich in a long tradition in the field, the emblematic brand Montblanc has in its assortment products for all styles: ballpoint pens, fineliners, rollerballs, mechanical pencils, and of course the timeless fountain pens.

montblanc.com
From CHF 240.-



BOOTS... SWISS-STYLE

Inuikii offers a Swiss alternative to the iconic sheepskin boots from the US brand UGG. Under a Nordic-sounding label, these shoes for the fashion-conscious are designed in Zurich and artisan-made in Europe. The brand emphasises its earth-loving philosophy with collections exclusively in LWG certified leather and Oeko-Tex cotton. Inuikii's vegan models use innovative materials such as Vegea, made from grape pulp, and Bananatex, made from banana plant fibres.

inuikii.com
From CHF 275.-



EXTREME ACTION CAM

Chinese giant DJI has launched a direct competitor to the GoPro Hero 11: the Osmo Action 3. The device's new battery lasts extra long, with up to 160 minutes of recording time, and charges super fast, from 0% to 80% in just 18 minutes. Other features on this 4K action cam include vertical shooting capability and resistance to extreme temperatures (down to -20°C).

dji.com
CHF 379.-



ATTENTION ALL APPRENTICE WATCHMAKERS

Maison Alcée lets you assemble your own mechanical timepiece with a range of elegant boxes that contain all the components and tools you need to get started. Each model, numbered and signed with your name, comes with a detailed book to guide you through each step of the process.

maison-alcee.com
From CHF 4,600.-



FOLDING SKIS

Ever wondered how the devil you can get your skis to fit into the boot of your car? The chore has never been easier than with Voyager skis, from the Slovenian brand Elan. Developed over eight years, these new-concept skis offer the unique advantage of folding down to less than 1 metre for convenient transport, while delivering top-notch performance both on and off piste. You can buy the pair of skis on their own or in a package including a bag, telescopic sticks and a snow brush. Three sizes are available: 160 cm, 166 cm and 172 cm.

elanskis.com
From CHF 1,699.-



TRIED AND TESTED BECOME A PROFESSIONAL ARTIST WITH AI

BY GÉRARD DUCLOS

With all the progress made in the world of AI, now anyone can instantly become an accomplished artist. We tested this fascinating technology with the MidJourney program.

In January 2021, at the height of the pandemic, OpenAI, an AI research lab that brings together the best of US tech companies, announced the launch of DALL-E, a program that creates images from text descriptions. The concept involves users typing words or phrases and the program creating images based on those words. The more precise the words, the better the images turn out.

This was quickly followed by DALL-E 2, an improved version, as well as competitor programs. This breakthrough marks the start of mass-market availability of artificial intelligence that has been developed for years in Silicon Valley labs and trained for more than a decade by billions of CAPTCHAs completed for free by billions of users (AI thanks you).

A competitor of DALL-E, MidJourney stands out for its user-friendly approach and users can generate up to 25 free images before switching to the subscription option. To start the process, we connected to the Discord server to supply the program with our text.

The first surprise is that there is no predefined list of keywords or commands. You can use whatever combination of words you like, even the most absurd or far-fetched phrases, such as “a trader in a red suit sitting in a chair reads a financial magazine while a screen behind him shows the market crashing to 0”. Hmm, not a bad idea, let’s try that sentence! I submit the request and the program generates four iterations of the image in just a few seconds. The result is incredible. AI actually drew four traders in red suits reading a financial magazine while a screen behind them shows the market crashing, and it is actually rather pleasing to look at, even if there are a few imperfections.

Even though there isn’t a list of keywords per se, we can give the program all sorts of details about the style and quality that we are expecting from the generated image: super realistic, cyberpunk, in the style of Rembrandt, 8k, incredibly detailed, etc. The possibilities are endless we soon realise, as we admire drawings done by much more advanced users who are using the program at the same

time on the Discord server. The only limit is training the human operators and our ability to make the machine understand us.

Some of the drawings are so impressive that it is virtually impossible to believe that the final image was drawn entirely by artificial intelligence. The Discord server is full of fascinating examples of high-quality images, such as entire comic books drawn by AI in a coherent and very aesthetically pleasing manner.

For more abstract but just as surprising results, you can also try short combinations of words or abstract concepts and let yourself be amazed by the program. For example, we tried “sunset on medieval Switzerland”. Once again, the result is incredibly beautiful and detailed.

At the end of our test, we were amazed and terrified in equal measure. One thing is certain: AI is on track to replace humans in applications which we thought it could never do, such as art, design and aestheticism... And it will only get better in the future. ▲

MIDJOURNEY / GÉRARD DUCLOS

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