

SWISSQUOTE

FINANCE AND TECHNOLOGY UNPACKED

FOXCONN
Rise of
the robots

ANALYSIS
Is the Swiss watch
industry in crisis?

MATCH GROUP
Getting to know
the leader in
online dating



**15 firms
under the
magnifying
glass**

DOSSIER

Superfood: the taste of tomorrow

**RECIPES FROM
MULTINATIONALS**

The functional food boom
The success of organic products
Investigating the proteins market

DANONE ► PEPSICO ► KELLOGG'S ► YAKULT ► GENERAL MILLS ► NESTLÉ ► CAMPBELL'S ►

ISSN 2296-3278

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TO BREAK THE RULES,
YOU MUST FIRST MASTER
THEM.



THE VALLÉE DE JOUX. FOR MILLENNIA A HARSH, UNYIELDING ENVIRONMENT; AND SINCE 1875 THE HOME OF AUDEMARS PIGUET, IN THE VILLAGE OF LE BRASSUS. THE EARLY WATCHMAKERS WERE SHAPED HERE, IN AWE OF THE FORCE OF NATURE YET DRIVEN TO MASTER ITS MYSTERIES THROUGH THE COMPLEX MECHANICS OF THEIR CRAFT. STILL TODAY THIS PIONEERING SPIRIT INSPIRES US TO CONSTANTLY CHALLENGE THE CONVENTIONS OF FINE WATCHMAKING.



ROYAL OAK
CHRONOGRAPH
IN YELLOW GOLD

AUDEMARS PIGUET

Le Brassus

GENEVA
BOUTIQUE AUDEMARS PIGUET
PLACE DE LA FUSTERIE 12, TEL: +41 22 319 06 80
MONTRES PRESTIGE
GRAND HOTEL KEMPINSKI, TEL: +41 22 732 83 00

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only time you ever see
an H. Moser.*



Ref: 1341-0207



H. Moser & Cie.
VERY RARE

Superfoods are becoming super popular



Marc Bürki,
CEO of Swissquote

Consumers today are more health-conscious, and they're willing to pay more for foods that are better for them – or advertised as such. Food industry giants are adapting to the trend.

You can find functional foods ('high-tech' foods with added vitamins and supplements) at the supermarket next to the organic, gluten-free and lactose-free products. Functional foods have seen incredible growth worldwide.

p. 28 As you'll see in our **dossier**, all the big players in the sector are looking to gain market share in health foods – including companies known for their sugary and high-fat products. US soda giant Pepsico has branched out into cold-pressed juices, and General Mills has been talking up the nutritional value of its cereals, which no longer contain food colouring or preservatives.

p. 40 **Nestlé** is positioning itself as a pioneer of this health food movement. The Swiss company is investing heavily in research and development and has spent the last few years buying up companies in the highly specialised medical nutrition sector.

At the Nestlé Institute of Health Sciences on the EPFL campus, the company is developing products to prevent diabetes, cardiovascular disease and muscle loss.

In addition to being very promising, the health food market presents another important advantage for businesses: it's a great time to get into e-commerce. Just look at China, where the sector for foods stamped as "healthy" is growing 10% annually, and where online sales are booming. Nestlé's sales jumped 25% last year, and the company isn't stopping there. It recently forged a partnership with **Alibaba**, China's e-commerce giant. The deal will expand Nestlé's distribution capabilities and open up new horizons.

p. 16

But the question remains: do these foods taste good and are they enjoyable to eat? That's a big challenge for the industry, which is trying to meet it with clever **marketing** – and it's working. But the industry needs to accept that no matter how sophisticated packaged foods might be, they are no substitute for fresh produce. After all, fresh produce isn't just healthy – it tastes good too.

p. 48

Enjoy!

DOSSIER

28 Superfood: the taste of tomorrow

RECIPES FROM
MULTINATIONALS



TRENDS



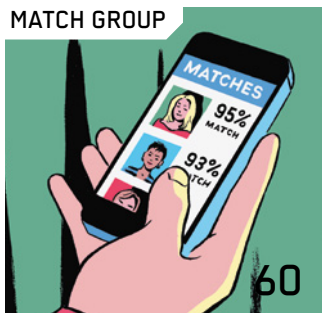
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MATCH GROUP



TWO WHEELS



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SCANS

fashion

SWATCH TO LAUNCH NEW LINE OF SUNGLASSES



SWATCH

Swatch is rekindling an old flame. The watchmaker is set to launch a new line of sunglasses this spring called 'The Eyes'. The company has teamed up with Italian eyewear maker Safilo, signing a five-year collaboration agreement. Based on what the company has unveiled so far,

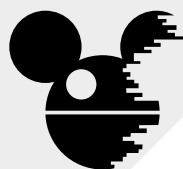
the collection promises to feature colourful frames with animal and gingham motifs. Swatch already launched a line of sunglasses in the early 90s – 'Swatch Eyes', with interchangeable frames. But they weren't a big hit, and were soon discontinued. — UHRN



"We looked at China too much like a developing market as opposed to the most-discerning market in the world."

David Taylor,

P&G CEO about fall of its sales in China because of its failure to bring new products to market.



+86%

The increase in profit generated by Disney's film division in the first quarter 2016. The result was thanks in large part to the success of *Star Wars: The Force Awakens*, which brought in \$2 billion at the box office. — DIS

internet

INTERNET USERS LOVE GIPHY

If we had published this article online, we could have spiced it up with a "GIF". GIFs are short animated images—usually only a few seconds long—and they're all the rage on the internet. To find one, we'd just have to go to the Giphy website (like Google, but for GIFs), perform a keyword search and pick the one we like best. The US website has become a big hit since its 2013 launch. It raised \$55 million in February and is now valued at \$300 million. The company has partnered with social networks such as Facebook, Twitter and Tinder, but it has yet to turn a profit.



OR



\$3.56 billion

The amount that Google allocated in 2015 to 'moonshot' projects (visionary initiatives where immediate returns are not expected). Such projects include rockets, self-driving cars and balloon-powered internet access. GOOG

cars

ONE COMPANY IS PROFITING FROM THE VW SCANDAL

Plastic Omnium is one of the main beneficiaries of the Volkswagen scandal in 2015. The French parts manufacturer makes an urea-based catalyst (called SCR) that reduces nitrogen dioxide emissions. Last year the company saw its sales jump 13% as its revenue rose 14%, to €6 billion. After selling 600,000 units in 2015, the company expects sales to reach 3 million units by 2019. The group has 15% market share and counts 13 carmakers among its clients. It is one of the only companies besides Bosch and Continental to sell the catalyst. POM

shale gas

THINGS AREN'T LOOKING UP FOR SHALE PRODUCERS

A well owned by the company Quicksilver Resources in Fort Worth, Texas.



NEWSCOM / M.L. GRAY / MCT

Oil prices peaked at \$115 per barrel in 2014. Since then, they have fallen 70%. US shale oil producers have been hit hardest by the lower prices, because shale oil is particularly expensive to extract. Chesapeake Energy—a major player in the sector—is on the verge of bankruptcy after losing \$14.9 billion in 2015. Pipeline

companies Sabine Oil & Gas, Quicksilver Resources and Enbridge aren't faring much better and have seen a number of their contracts cancelled. Oil field services company Halliburton recently announced 5,000 job cuts, after having already jettisoned over 25% of its workforce since 2014. CHK SOGCO KWKAQ HAL

RANKING

THE 5 MOST OIL-DEPENDENT ECONOMIES IN THE WORLD (export-to-GDP ratio in 2015)

1. BRUNEI	60.3%
2. KOWAIT	46.5%
3. LIBYA	43.8%
4. REPUBLIC OF THE CONGO	42.2%
5. SAUDI ARABIA	32%

Source: Bloomberg

THE TOP 5 WEARABLE TECH BRANDS (unit sales in 2015)

1. FITBIT	21 MILLION
2. XIAOMI	12 MILLION
3. APPLE	11.6 MILLION
4. GARMIN	3.3 MILLION
5. SAMSUNG	3.1 MILLION

Source: IDC

THE TOP 5 GLOBAL SOFT DRINKS (according to their brand value in 2015)

1. COCA-COLA	\$70 BILLION
2. COCA-COLA LIGHT	\$13.8 BILLION
3. RED BULL	\$11.4 BILLION
4. PEPSI	\$10.8 BILLION
5. NESCAFÉ	\$6.3 BILLION

Source: Millward Brown

SCANS



\$61 billion

The amount that Chinese companies paid in 2015 for foreign acquisitions (up 16% from 2014). The biggest acquisitions included the Legendary Entertainment film studio, tyre manufacturer Pirelli and the gay dating app Grindr.

The open-pit mine Collahuasi, in northern Chile. The operation is 44%-owned jointly by Glencore and Anglo American.



GLENCORE / ANDREW CRAIG

luxury

LOUIS VUITTON BRANCHES OUT INTO BOOKSHOPS

For luxury brands in China, the going is getting tough. Sales have plummeted in the wake of a slowing economy and President Xi Jinping's anti-corruption campaign. Many are now trying to diversify: Louis Vuitton opened a boutique in Beijing featuring a bookshop, tea house and art gallery; Gucci has a restaurant

in Shanghai that serves Italian dishes; Bulgari plans to open two hotels in China in 2017; agnès b runs a chain of cafés and flower shops in Hong Kong and Taiwan; and Armani has designed apartment interiors for a luxury residential project in the city of Chengdu. — LVMH — KER



“Hard to accept that these imbeciles represent the people in our government.”

Valeant CEO [Martin Shkreli](#), after being grilled by Congress about his company's overpricing of certain medications.

The multi-purpose Louis Vuitton store in Beijing.



LOUIS VUITTON

*commodities***TOUGH YEAR FOR GLENORE**

The five largest independent mining groups worldwide lost a combined \$32 billion in 2015 as a result of falling commodities prices and sluggish demand from China. The value of copper alone dropped 25% last year. Swiss group Glencore was hit particularly hard. The company lost nearly \$5 billion in 2015, one of the worst performances in its history. To reverse the trend, it has cut production at several coal, copper and zinc mines. The debt reduction plan also includes the transfer of a minority stake in its agricultural products division and the sale of two copper mines in Australia and Chile. — GLEN

*internet***FACEBOOK RUNS INTO HURDLES IN INDIA**

It seemed like the perfect strategy. Facebook had plans to launch a service called 'Free Basics' that would give smartphone users in emerging countries free access to a series of platforms, including its own. The idea was that once users became accustomed to the service, they'd pay to keep using it. But Free Basics—already available in Kenya, Colombia, Indonesia, Iraq and a dozen other countries—was dealt a blow by the Indian telecoms regulator in February. The regulator banned Free Basics in India, arguing that the service would jeopardise internet neutrality by giving an unfair advantage to some platforms over others. — FB



Protest against Facebook's Internet project in Bangalore on 2 January 2016.

AFP / BRENDAN MCDERMID

KICKSTARTER

ROCKETBOOK WAVE

ROCKETBOOK WAVE**Save your notes in the cloud**

The Rocketbook Wave is for everyone from students and artists to entrepreneurs. But this blue spiral notebook isn't like other notebooks. It lets you easily save notes and sketches in the cloud. Just write or draw on its pages, then use a special app to scan the pages with your smartphone – it only takes a second. Your notes are automatically uploaded to the web and filed right where you want them. There are seven icons on each page. Each icon represents a place where you can save your notes (such as Dropbox, Evernote, Google Docs or your email address). Select an icon and your notes will automatically be filed in the right place. Want to start fresh with a clean notebook? If you use the Pilot Frixion pen that comes with the Rocketbook Wave, you can put the notebook in the microwave to erase everything.

FUNDS RAISED
\$574,699

AVAILABILITY
AUGUST 2016

SCANS



“We build secure products to keep your information safe. Forcing companies to enable hacking could compromise users’ privacy.”

Sundar Pichai,

Google CEO, on the fight between Apple and the FBI on cracking an iPhone having belonged to one of the perpetrators of the San Bernardino attacks.



312,000,000

The number of champagne bottles sold worldwide in 2015 (for an estimated record-shattering €4.75 billion). The last vintage to achieve similar results was 2007, when sales reached €4.56 billion.

tourism

TOURISTS FLOCK TO CUBA, PASS ON PARIS

The wave of terrorist attacks that swept through several countries in 2015 has changed the map of global tourism. Hotel occupancy in Paris was down 13.8% in December—following the November attacks—compared with the previous year. Tunisia, which suffered two attacks targeting tourists, lost 1.8 million holiday-makers over a one-year horizon in 2015. Meanwhile, Cuba has seen a 17% increase in visitors as frosty relations with the United States start to thaw. The biggest winners have been operators such as US-based Carnival, which offers Caribbean cruises. On the other hand, Thomas Cook (UK) and TUI (Germany) have seen reservations plummet for France and North Africa.

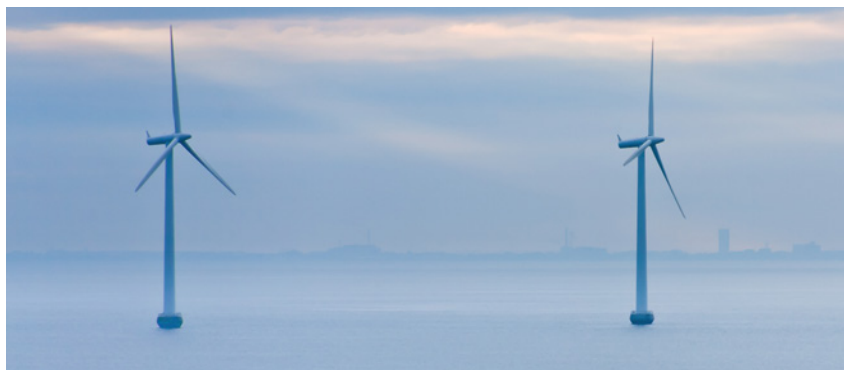
— CCL — TCG — TUI



The beach resort of Varadero, on the northern coast of Cuba.

energy

SWISS COMPANIES TEAM UP FOR BIG WIND FARM PROJECT



NEWSCOM / INGRAM PUBLISHING

Bern-based energy group BKW and Credit Suisse Energy Infrastructure Partners have joined forces to form the consortium Nordic Wind Power. The consortium is investing in Europe's biggest wind farm, set to open in 2020 near Trondheim in central Norway. With 278 turbines, the wind farm will provide

electricity and heating for 170,000 homes. The Swiss companies will have a 40% stake in the project, estimated at €1.1 billion. Norwegian state-owned electricity producer Statkraft will have a 52.1% stake, and local firm TrønderEnergi will have a 7.9% stake.

— CSGN



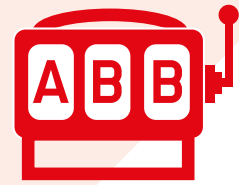
ANGELO DOMINI

FLOP

Bombardier CSeries

The revolutionary new CSeries has generated quite a buzz. Quieter and more fuel efficient with big windows and spacious seats, it will significantly improve passenger comfort and boost airline earnings. But the two CSeries models designed by Canada's Bombardier have run into a number of technical hurdles since their 2008 launch. Their release on the market (initially scheduled for 2013) was delayed three years,

and they have cost the company \$4.9 billion – \$2 billion more than expected. Bombardier will likely inject \$2 billion more into the project between now and the end of 2017. The company is also struggling to find clients, as demand is weak for mid-sized passenger planes (100 to 160 seats). So far, only 243 orders have been placed for CSeries planes. The first production model will enter service with Swiss by late June. — BDD/B



+20%

The increase in the salary of ABB director Ulrich Spiesshofer in 2015. His remuneration, now 9.1 million Swiss francs, consists of part cash (5.33 million Swiss francs) and part shares (estimated at 3.77 million Swiss francs). ABB executives as a whole took home 45.5 million Swiss francs in 2015 (up 18%).

health

TECH AND HEALTHCARE IN CHINA

China's healthcare market was worth \$511 billion in 2013, according to Economist Intelligence Unit. By 2018, it will be worth \$892 billion. This trend is due to the emergence of chronic diseases (diabetes, cholesterol), the ageing of the population and the expansion of health insurance. And tech giants are perfectly positioned to cash in on it. Alibaba recently launched a service where users can order pills online and compare prices from different chemists. The company's competitor Tencent added a tab to its WeChat messaging service that allows users to find a doctor and schedule an appointment via smartphone. — BABA — 700

SCANS



transport
QUIET SUPERSONIC JET

NASA's concept
supersonic
passenger jet.



NASA

Lockheed Martin won a research contract with NASA to design a supersonic jet that is quiet, fast, cheap and fuel efficient. The group will receive \$20 million over 17 months for the preliminary work. The goal is to create a jet by 2020 that produces a 'soft thump' as it breaks the sound barrier – rather than the sonic boom produced by today's jets. The new


jet would be used for passenger flights, like the supersonic Concorde (decommissioned in 2003). Lockheed Martin will work on the project with GE Aviation and Tri Models. Others have already invested in this segment: US firm Aerion teamed up with Airbus to design a jet that can transport a dozen passengers at Mach 1.5 (1,836 km/h).  LMT  GE



“I’m a
unifier.
I know
people
will find
this hard
to believe.”

Donald Trump,
businessman and
Republican presidential
candidate.


*pharma*NOVARTIS UNDER INVESTIGATION
IN SOUTH KOREA

Novartis is under investigation in South Korea. Its Seoul headquarters was raided by authorities in late February. The authorities seized registers and official documents. The Swiss company is accused of giving money and other gifts to doctors to encourage them to prescribe Novartis drugs over others – a form of bribery. The Swiss group was allegedly trying to stymie competition on the Korean market from cheaper generic drugs.  NOVN

IPO

SHINING STAR IN
GENETICS GETS
NASDAQ’S ATTENTION

US start-up Editas Medicine is about to cash in on a major scientific breakthrough: the ability to change pieces of DNA by simply copying and pasting, a technique called ‘CRISPR-Cas9’. The Cambridge start-up went public in February. Its share price, set at \$16, soared to \$42 in a month. The capitalisation reaches the billion. In August 2015, Editas Medicine

already raised \$120 million from several private investors, including a fund set up by Bill Gates. The company hopes to use this new therapeutic tool to cure certain genetic diseases by removing the gene that causes them. Its first target is Leber’s congenital amaurosis, a type of eye disease. The first clinical trials are scheduled to start in 2017.  EDIT



Life is short – so start thinking ahead.

Good fund management can be likened to the qualities of an elephant. This means we handle in a rational, intuitive manner with the benefit of years of experience. See for yourself: the mixed asset allocation fund Ethna-AKTIV from ETHENEA.
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TRENDS



the country

ETHIOPIA

The Horn of Africa awakens

With a population of nearly 100 million, Ethiopia is the fastest growing country in Africa. Its economy grew by an average of 10.9% per year between 2004 and 2014. The country has an ultra-centralised government inspired by the Chinese development model. Lavish spending was signed off to improve infrastructure, such as roads and dams. Special economic zones have been set up to promote domestic trade and tax incentives have been passed in certain key industries, such as tourism, leather goods, textiles, agro-processing and pharmaceuticals. Furthermore, the country enjoys political stability, and inflation has remained under control with the help of a prudent monetary policy. Wages have stayed low, but a new middle class has emerged.

These advantages have attracted foreign groups, including Heineken, General Electric, Orange, Etur Textile, Diageo, SAB-Miller and Starwood Hotels, which have all invested in Ethiopia in recent years. The economy is still predominantly agriculture-based, but its manufacturing sector – especially low value-added products that have become too expensive to produce in Asia – has grown rapidly, as have flower and coffee exports.



WORLD ECONOMIC FORUM

the figure

KASPER RORSTED

A breath of fresh air at Adidas

Adidas has a new CEO, and his name is Kasper Rorsted. This 54-year old Dane is set to take over at the sportswear manufacturer in August. He will be moving on from his current position at Henkel, the German consumer and industrial goods giant, where the share price has tripled since he was named CEO in 2008. This father of four and avid sports enthusiast gained his early experience in the United States starting in 1995 at Oracle and Digital Equipment Corporation. He went on to join Compaq, then Hewlett Packard, where he served as Senior Vice President and General Manager from 2002 to 2004.

Kasper Rorsted is viewed as an atypical and modern leader, a sort of Mister Perfect in the exclusive uppermost circles of German executives. His role at Adidas will be

to position the company as a serious contender against its ruthless U.S. competitors, which include the veteran Nike and newcomer Under Armour. He will also have to figure out what to do with its struggling brands, such as Reebok and the golf equipment maker TaylorMade. On 18 January 2016, the day he was appointed CEO of Adidas, the share price jumped 12%. ADS

Position
CEO of Adidas

Nationality
Danish

Salary in 2015
€6.4 million

GDP
per inhabitant
\$573.6

Growth in 2014
10.3%

Main economic
sectors
agriculture,
textiles,
leather goods,
hydropower,
gold.



NEWSCOM / CB2 / ZOB / SUPPLIED BY WENN

the innovation

SAFETY TRUCK

Company
SamsungLaunch
2016Cost
not disclosed

A see-through lorry to prevent accidents

Tens of thousands of people die on roads every year. Accidents frequently occur when a car tries to overtake another vehicle in an oncoming traffic lane. The danger is even higher when overtaking a heavy vehicle, the risk being an obstruction of the driver's visibility. It's this risk that motivated Samsung to develop a technology called the Safety Truck. This intelligent lorry is equipped with a camera in the front which sends

a live video feed to a giant screen consisting of four monitors across the back. Any driver behind the lorry can safely overtake the vehicle and see exactly what is ahead in the other lane. Developed in partnership with the advertising agency Leo Burnett, this anti-collision system is currently being tested in Argentina, a country with a high number of single-lane roads, but should soon be available globally.

— 005930



THE MATCH

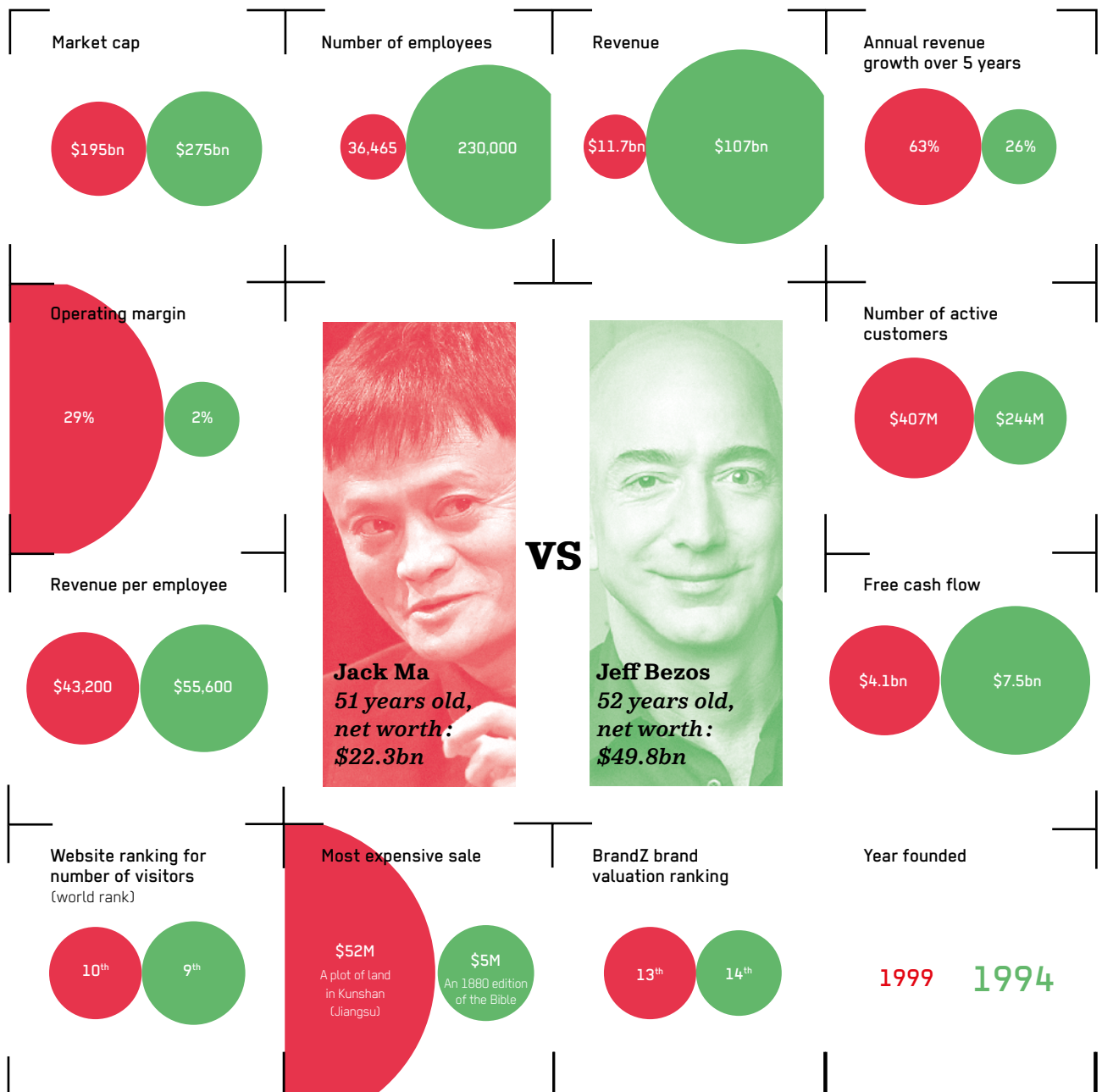
ALIBABA VS AMAZON

BY LUDOVIC CHAPPEX

Alibaba and Amazon dominate the global e-commerce market, followed by eBay as a distant third. Founded in 1999, the Chinese group, led by Jack Ma, appears to be copying the strategy of its US counterpart to the letter: Alibaba recently acquired the daily *South China Morning Post* for \$270 million; similarly, Amazon founder Jeff Bezos bought *The*

Washington Post newspaper in 2013 for nearly the same amount. The two giants are each looking to combine the strengths of e-commerce and online journalism in the creation of colossal databases whereby, on one hand, they can determine exactly what consumers want and which, on the other, serve as outlets for attracting daily visitors

with interesting content peppered with highly-targeted ads. But any similarities in these companies' models aside, there is one major difference: unlike Amazon, Alibaba does not have its own storage or distribution centres, the entire logistical chain of which is left to its vendors. This arguably allows the company to grow much faster.  BABA  AMZN



Sources: Statista, Fortune, YCharts, DMR, New York Times, Forbes

WORLD'S
FIRST

THE HYDRO
MECHANICAL
HOROLOGISTS

HYT

H2 | ICEBERG WHITE GOLD

HYT is the first timepiece ever to combine mechanical and liquid engineering. H2, unique Swiss technology and movement made in cooperation with Audemars Piguet Renaud & Papi - manual winding and 8-day power-reserve - driving a unique high-tech fluidic technology. HYT - a new dawn in watchmaking.

GENEVA: **Montres Prestige** | LAUSANNE: **Ouranos** | VERBIER: **Michaud** |
LUZERN: **Les Ambassadeurs** | INTERLAKEN: **Kirchhofer** |
ST MORITZ: **Embassy - La Serlas** | ZÜRICH: **Les Ambassadeurs** |

HYTWATCHES.COM





Invasion of the foxbots

Taiwanese electronics giant Foxconn, which manufactures the bulk of Apple products, has begun replacing its workers with robots and is planning to automate a third of its workforce by 2020.

BY JULIE ZAUGG

NUMBERS

1.3M

The number of people making up Foxconn's vast workforce, more than 400,000 of whom work in the city of Shenzhen.

\$136.4bn

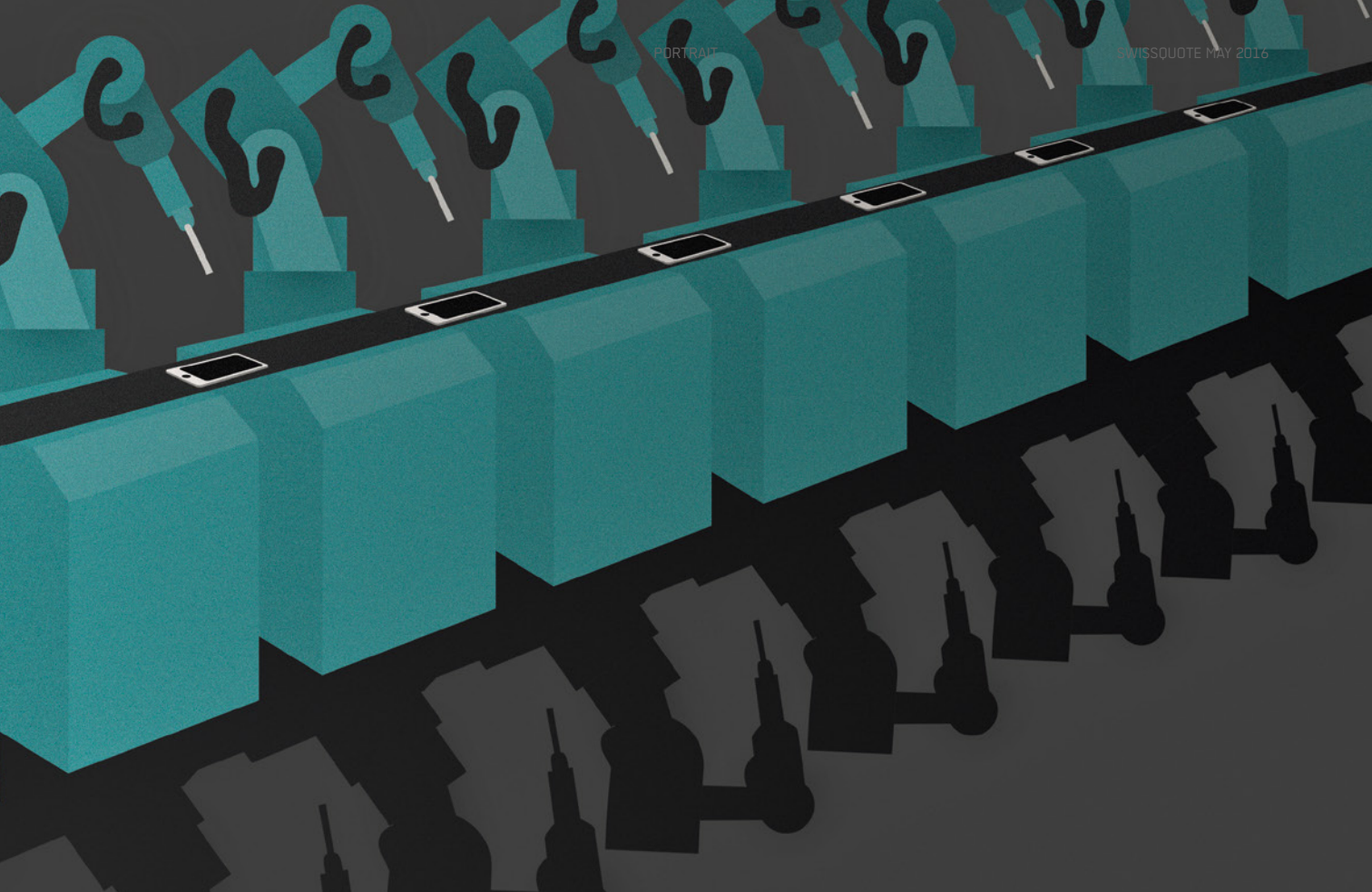
The company's revenues in 2015.

\$4.6bn

Net profit in 2015.

21

The number of proven suicides at Foxconn in China between July 2009 and October 2010.



An army of turquoise-coloured articulated arms work side by side in a vast hanger on the outskirts of Shenzhen in southern China. With clockwork regularity, their mechanical screw-driver hands move swiftly and deftly up and down. They are foxbots, an industrial robot developed by the Taiwanese group Foxconn. This particular contingent is making iPhones: around 10,000 foxbots have been put into service to build Apple's flagship device. Each can produce about 100 iPhones every day. Modelled on the assembly lines used in the auto industry, foxbot workforces also make iPads, Xboxes and Kindles.

"Our robots can weld, polish, paint, mould, assemble, label, package and test parts," says a spokesperson for the company, which is part of the Hon Hai conglomerate. "Some of our assembly lines are fully automated." Foxconn is at the forefront of a revolution that is putting robots at the centre of the manufacturing process

for a wide range of consumer goods, including cars, furniture, tablets and smartphones.

the group assembles 40% of the electronic products sold worldwide

With a client roster that includes Apple, Dell, HP, Amazon, Xiaomi, Sony and Nintendo, the group assembles approximately 40% of the electronic products sold worldwide. It has set itself the target of replacing one-third of its workers with machines by 2020, and plans to build a facility in Chengdu in central China that will be entirely staffed by robot workers. The new plant will operate around the clock, lights off.

"Foxconn's first attempts at automation back in 2007 didn't amount to much because the technology wasn't

ready," explains Alberto Moel, an analyst at Sanford Bernstein. Too jerky and insufficiently precise to work with the delicate parts that go into an iPhone or iPad, the first foxbots were only good for simple jobs such as carrying or lifting.

But the second generation of machines can perform more than 20 tasks. What's more, they can be quickly reprogrammed to take on ever shorter production cycles. "In the last 18 months, these machines have been rolled out on a large scale," says Moel, with Foxconn now using between 10,000 and 30,000 in its plants. Two production facilities in the Chinese province of Shanxi, not far from Beijing, have been set aside to build 10,000 of these robots a year.

The firm solved outstanding issues by consulting with robotics experts such as ABB. The Swiss-Swedish company supplied Foxconn with RobotStudio, a software package ▶

that can create a 3D model to simulate the manufacturing process, enabling bugs to be dealt with before they happen in a real-life situation. "This made it possible for us to shorten our production times, especially when introducing new products," explains Yuan Xiao Yun, head of automation research at Foxconn.

The company is also harnessing the opportunities offered by big data, accumulating vast amounts of information on its assembly line to enhance production processes. "We have set up a system that uses video cameras to gather data automatically," says the spokesperson. "Computers constantly analyse the information to spot the slightest error on the lines. Results are displayed on monitors and sent to managers' smartphones."

Foxconn is additionally benefitting from the fact that most of its plants are located in the Pearl River Delta in southern China. "This region has become a global hub for the development of industrial robots, especially in electronics," notes Jan Zhang, an expert on the manufacturing sector

ANALYST OPINION

"NO ONE ELSE COULD MANUFACTURE 50,000 TABLETS"

Foxconn's chief strength lies in its ability to handle very large orders, which sets it apart on the electronic suppliers market. "No one else could manufacture 50,000 tablets at that price within a reasonable timeframe," says Alberto Moel, an analyst at Sanford Bernstein. The automation drive of recent years has also enabled the firm to boost productivity and margins. "Foxconn has achieved substantial savings on payroll costs."

However, the company is overly reliant on about 15 or so clients. "Apple alone accounts for half of its revenues," points out

Moel. Foxconn is also having to contend with the emergence of a Taiwanese competitor, Pegatron. "Pegatron has taken some iPhone manufacturing operations," says Arthur Liao, an analyst at Fubon Securities. The company has also lost time and money in its attempts to diversify. "It made a few poor choices, such as buying 4G licenses in Taiwan or trying to build solar panels," says Moel. Late March, it bought for \$3.5 billion a two-thirds stake in Sharp, a Japanese TV manufacturer. Liao still recommends buying Foxconn shares. "The firm's valuation is extremely low. It can only go up."

with IHS Technology, an economic intelligence agency. Guangdong province is set to spend 943 billion yuan (140 billion Swiss francs) between now and 2018 to build up this sector. Its capital, Guangzhou, wants its factories to be 80% automated by 2020. China recently overtook Japan to become the world's largest market for industrial robots.

Foxconn is betting heavily on robots because it has to make up for a huge staffing shortage. "In 2012, for the first time, China's labour force actually shrank by several million people," says Zhang. "This demographic shift is the result of an ageing population and the single-child policy." Another reason for the push towards automation is that young people are turning away from unpleasant, poorly-paid jobs in the electronics sector.

MISTREATING EMPLOYEES

Foxconn was in the news in 2010 as 21 of its workers killed themselves in the space of just over a year because of poor wages and inhuman working conditions. One employee actually committed suicide after losing an iPhone 4 prototype. The crisis forced Foxconn to hire thousands of psychologists and install nets beneath the windows of its factories to prevent people from throwing themselves out. The situation has not improved much. Foxconn employees often put in more than 60 hours a week and

are exposed to many toxic substances, including copper, nickel and cyanide. Moreover, they are under constant, paranoia-inducing surveillance, especially those living on the firm's huge Shenzhen campus. Foxconn also regularly hires minors, counting them as interns and paying them less than minimum wage. In 2010, Chinese researchers published a study based on interviews with 1,800 workers: 13% said they had fainted at work, 28% said they had been insulted and 16% claimed they had been physically punished.

Guangzhou wants its factories to be 80% automated by 2020

The group, which has been heavily criticised for failing to provide decent working conditions (issues include long working hours, hygiene and restrictions placed on workers), and which employs hundreds of thousands of workers in its facilities, has therefore started replacing people with robots.

This approach is also enabling Foxconn to reduce its wage bill

The humanoid robot, "Pepper", built by Foxconn provides information to customers at the Japanese bank Mizuho (Tokyo, July 17, 2015).



and thus improve its margins. The firm is under twin pressures. On the one hand, its corporate clients are constantly cutting the prices of their electronic devices to hold onto their positions on a saturated market. On the other, lies the issue of the labour market: "Chinese wages have risen considerably in the last few years," says Zhang. "According to the latest data, a worker in the manufacturing sector earns \$7,500 a year, compared with \$3,800 in Vietnam." A foxbot, meanwhile, costs between \$20,000 and \$25,000.

Foxconn's ambitions go further still. The company has teamed up with Chinese e-commerce giant Alibaba and Japan's Softbank to invest \$118 million in a joint venture called SoftBank Robotics. The company is marketing a personal robot called Pepper, which is produced by Foxconn. The little humanoid machine can sense emotions, play games, speak several languages and dance.

Available in Japan since last year, Pepper is being used to welcome and guide customers in several large stores. It could one day be used as a companion for elderly people living

alone. "Foxconn has always managed to anticipate the latest electronics trends," says Arthur Liao, an analyst at Fubon Securities. "It was the first to foresee the success of notebooks, the smartphone explosion and the decline of the PC." The firm hopes to repeat this feat with personal robots. ▲ 2354

FROM ATARI CONSOLES TO IPHONES

Foxconn was created in 1974. Its founder, Terry Gou, started out manufacturing electric parts for Atari 2600 consoles. In 2001, Intel asked the firm to build its motherboards. Contracts with Nokia, Dell, HP and Compaq followed soon after. In 2005, the group began manufacturing Apple products and went on to become the firm's largest supplier, then the world's largest manufacturer of electronic products. "Foxconn consolidated a highly fragmented market and seized a majority share with its rock-bottom pricing," explains Sanford Bernstein analyst Alberto Moel. "The economies of scale achieved through its high-volume orders allow the firm to compensate

for thin margins." Foxconn now builds two-thirds of Apple's products, along with Kindles, BlackBerrys, PlayStations and Xboxes.



The growing popularity of private justice

An increasing number of companies are turning to arbitration to settle disputes out of court. And Switzerland dreams of leading this new global market.

BY MARIE MAURISSE

Last year, the general public witnessed what the sports media dubbed the “Sauber saga”, named after the Swiss Formula One racing team. The case started back in 2014, when Sauber ousted from its line-up the Dutch driver Giedo van der Garde, who was under contract at the time. Van der Garde immediately opposed the decision and took his case to the Swiss Chambers’ Arbitration Institution (SCAI) based in Geneva. Two months later, the arbitrators ruled in his favour, and the driver raced for the 2015 Formula One season.

Conflict can arise in any relationship, between friends, between spouses and, quite naturally, between business partners. And in settling disputes, the business world can come up with more effective solutions than couples counselling. To resolve differences as quickly as possible and on the best terms, companies seek help from professional arbitrators. The disputes are generally straightforward. “In most cases, the

seller hasn’t delivered merchandise on time, or not at all,” says Caroline Ming, executive director of SCAI. “Sometimes it’s a quality issue or the buyer hasn’t paid the bill.”



“In most cases, the seller hasn’t delivered merchandise on time, or not at all.”

Caroline Ming,
executive director
of Swiss Chambers
Arbitration Institution (SCAI)

In a globalised world, where business relations take place between parties separated by an ever greater physical distance, the reasons for disagreement are legion. And it affects all industries, particularly raw materials, construction, aerospace and property. Sometimes a country stops its oil deliveries because it’s at war. Or a laboratory discontinues its research for a pharmaceutical group. All sorts of scenarios are out there. That’s why arbitration proceedings are increasingly common, and Switzerland is no exception. In 2015, SCAI reviewed about a hundred cases, pointing to an increase

of about 40% over the past ten years. SCAI brings together seven Swiss Chambers of Commerce and Industry, including Basel, Bern, Geneva, Lausanne, Lugano, Neuchâtel and Zurich. But most cases come from Geneva and Zurich.

Geneva's predominance comes as no surprise, as the city is often described as the birthplace of arbitration. The Alabama Room in its Town Hall is where the dispute between the United States and the United Kingdom was settled during the American Civil War in the 19th century. Switzerland's reputation in arbitration comes from advantages that have historically played in the country's favour: discreet, neutral, pragmatic in its laws and multilingual, with legislation available in English, German, French and Italian. Vincent Subilia, deputy director of the Geneva Chamber of Commerce, makes no secret about wanting to develop this sector to compete with London and Paris, already firmly established in the international arbitration market. He refers to arbitration as "private justice" as it takes place behind closed doors. But in his view, there's nothing opaque about it. "The system has proved useful, as it is fast, inexpensive and efficient, while justice in courts of law can be slow and potentially more costly."

Of course, the companies involved in a case have to advance litigation fees and pay arbitrators and lawyers, who can charge as much as 500 Swiss francs an hour. But after all is said and done, experts say arbitration is still less expensive. The Lausanne-based lawyer Boris Vittoz estimated in a 2014 report that for a dispute amounting to 150,000 Swiss francs, arbitration costs, under Swiss law, totalled 68,400 Swiss francs, compared with 88,600 Swiss francs for a traditional trial in Geneva. This option also means that arbitrators, who are experts in the most technical fields and are available immediately, can be brought in. They can grasp complicated issues quickly, such as gas prices. On average, arbitration proceedings with SCAI only last nine months.

Jean-Paul Vulli  ty, lawyer, arbitrator and professor from the University of Geneva, has recently worked on a case involving the construction of ski lifts. He tells us, "We had one



"The system has proved useful, as it is fast, inexpensive and efficient."

Vincent Subilia,
deputy director
of the Geneva Chamber
of Commerce

week to issue a ruling. We had time to listen to the arguments, witnesses and even experts who explained the technological challenges of building ski lifts. It's as simple as that. In a state court, you can't spend a whole week on such a technical issue". Not to mention that once the ruling is handed down, the only option for appeal is the Federal Supreme Court.

Caroline Ming and Vincent Subilia raise precisely these arguments to boast Switzerland's arbitration services, especially in other countries. The market is not yet very lucrative, but Vincent Subilia believes it has potential. "It's

a gamble on the future, which also promotes Switzerland's role in big business." ▴

SMALL OUT-OF-COURT SETTLEMENTS

Most arbitration proceedings in the world take place in the utmost secrecy. But information can leak. Here are a few examples.

UBS VS PUERTO RICAN CLIENT

Switzerland's largest bank has run into trouble not only in France and the United States. After being accused of giving poor investment advice to a Puerto Rican client, UBS opted to put its faith in a local arbitration court rather than stand before a judge. In February 2016, the terms of the agreement awarded the client a settlement amounting to 1.43 million Swiss francs.

FLAME VS GLORY WEALTH

In 2011, the Swiss shipping and trading company Flame failed to deliver all of the cargoes of coal stipulated in its agreement with the Singapore-based shipping company

Glory Wealth. The dispute went on for years, but the final verdict has only recently been announced. Flame was ordered to pay nearly \$3 million to Glory Wealth to offset its losses.

IRAN VS TURKEY

Arbitration is not just for companies. Turkey, which buys more than 10 billion cubic metres of gas from Iran every year, filed its complaints of high prices and distribution problems with the International Court of Arbitration. The ruling recently handed down declared Ankara the winner, ordering Tehran either to deliver more gas or refund some of the money paid.

ANALYSIS

THE POINT OF VIEW OF SPECIALISTS

INVESTOR INTERVIEW

“Swiss pharmaceutical companies will benefit from the Trans-Pacific Partnership”

The Trans-Pacific Partnership (TPP), a deal bringing together twelve countries, is the most ambitious trade agreement ever signed. And Swiss companies stand to gain from it, says Michael Wan, an analyst at Credit Suisse.

BY CLÉMENT BÜRGE

The Trans-Pacific Partnership (TPP), signed ceremoniously on 4 February, 2016, covers 12 nations and 800 million people, making it the largest regional deal of its kind. This historic multilateral – free trade agreement has yet to be ratified by its participating members – the United States, Japan, Malaysia, Vietnam, Singapore, Brunei, Australia, New Zealand, Canada, Mexico, Chile and Peru – but has already sparked controversy. Some view it as a means to boost growth and the global economy, while others believe the treaty will destroy thousands of jobs in some sectors. All that we know for now is that the companies operating in these countries will have to adapt to a new economic order.

Which nations will benefit the most from the Trans-Pacific Partnership?

Vietnam will be the big winner in this deal. Our research shows that the treaty will contribute nearly 10% to the country's GDP growth over 10 years, based on the most optimistic scenario, or 5% under the most pessimistic assumptions. Malaysia will also gain significantly, with its GDP expected to climb 5%.

Why will Vietnam and Malaysia benefit more than other countries?

These countries are in a position of development enabling them to secure the biggest advantages from the TPP. They had signed very few free – trade agreements before this deal and now,

from one day to the next, will gain access to a vast international market including the United States, Japan and even Latin American countries. Due to its geographical location, Vietnam represents the ideal gateway into China for foreign investors. They'll be rushing to Ho Chi Minh City.

How will the deal affect superpowers such as Japan and the United States?

The TPP will have a minimal impact on GDP growth, about 2% over 10 years. But the United States engaged in these talks for more than just economic reasons. The treaty also holds geopolitical significance for Washington as it will improve the economy of the United States' trade partners and bolster U.S. influence in these regions.

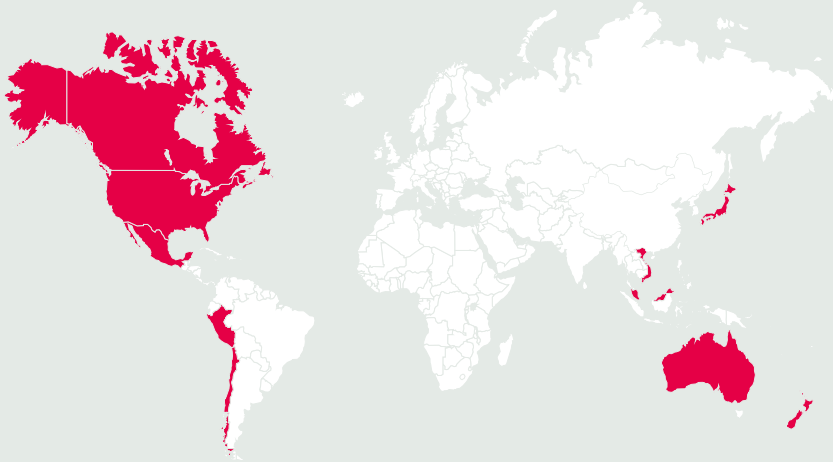
Which economic sectors will the agreement impact most?

The first is manufacturing. In Vietnam, the agreement will mainly drive the textile and electronics industries, while in Malaysia electronics and palm oil will benefit. **Japanese and American carmakers will also gain significantly, but in the long term, as car tariffs will gradually be lifted over several years.** And it's worth noting that the TPP will also upset the businesses that work with governments.

NUMBERS

12

Number of member countries in the Trans-Pacific Partnership (TPP): United States, Japan, Malaysia, Vietnam, Singapore, Brunei, Australia, New Zealand, Canada, Mexico, Chile and Peru.

**800 million**

The number of consumers covered by the agreement, i.e. twice the population of the European Union.

40%

The market share held by the 12 TPP member countries in the world economy.

18,000

The number of tariffs to be removed or reduced under the agreement.

Will the TPP have a negative impact on these companies?

The agreement will end the preferential treatment given to national companies in several member countries. All companies will eventually have the same chances of winning a government contract. Private construction companies in the United States will now fight on a level playing field with their Vietnamese counterparts, state-owned or not. Construction and oil and gas companies, such as Petronas in Malaysia, will face tougher competition.

How will the agreement influence Swiss firms?

Swiss companies such as Nestlé and Novartis will boost their investment in TPP member countries to benefit from their fresh access to a vast multinational market. Nestlé could manufacture its products in Vietnam and send them directly to Japan and the United States without having to pay any tariffs. Swiss pharmaceutical companies, which already have extensive operations in the region, will enjoy enhanced intellectual property protection. They will also benefit from policy on generic drugs, with patent protection for the original products extended from five to eight years. This will drive up their revenue in these countries.

Will Swiss businesses also have better access to government contracts?

Definitely, as the TPP will do away with preferential treatment granted to firms that work closely with governments. Swiss companies, such as Sika and LafargeHolcim in construction, will be able to sell their goods and services to Asian governments for the first time without having to put up with unfair competition.

Why is there so much controversy surrounding the deal?

Negotiations were handled with the utmost secrecy. Many parliaments, even in participating nations, had no idea about the advancement or terms of the deal. That naturally gave rise to strong opposition. Furthermore, the TPP could even have a negative impact on some industries, such as farming in Japan, Canada and New Zealand. But if the treaty is ratified, it'll be interesting to see which other Asian countries will try to join it. Indonesia would be an appealing candidate, as would South Korea and, of course, China. ▲



Michael Wan
Analyst and TPP specialist,
Credit Suisse, Singapore

THE QUESTION

Is the Swiss watch industry mired in a crisis?

Falling demand from Asia is taking a toll on Swiss watchmakers. As the industry undergoes profound changes, will the country's biggest watch manufacturers be able to innovate and stay afloat? Some experts are more optimistic than others.

BY MARIE MAURISSE



RENÉ WEBER
Financial analyst
at Vontobel



XAVIER COMTESSE
Co-founder of the think
tank "Watch Thinking"



JIA XIAN SU
Watch expert and journalist
based in Singapore

This luxury goods analyst blames the disappointing performance of Swiss watchmakers on the current economic situation.

I wouldn't call it a crisis. After all, 2015 was the third-best year on record for Swiss watch exports. But falling demand from Hong Kong—the biggest market for Swiss watches, accounting for 15% of exports—has dealt a blow to the industry. The preferred travel destinations of Chinese tourists are also changing, and this has affected sales, too. After the terrorist attacks in Paris and the launch of biometric passports in China, fewer Chinese consumers are coming here. We expect sales to decline during the first half of 2016, but we are optimistic for the second half of the year. All in all, Swiss watch exports should be stable in 2016.

This watch industry specialist says it's the beginning of the end for Swiss watchmakers, who have failed to innovate and are now falling behind smartwatches.

Crisis? Without a doubt! And for one simple reason: watchmakers still insist on making mechanical watches, even though in today's world you can have the time sent to you electronically! In the final quarter of 2015, smartwatch sales surpassed Swiss watch sales for the first time ever. And it's just the beginning. Soon, we're going to see new watches that feature artificial intelligence. Eventually, the smartwatch will become like a personal assistant allowing users to tap into the cloud, big data and other smart objects to access information, analyses and personalised advice... in addition to the time. The problem is that this new smartwatch probably won't be made in Switzerland.

This expert says the market is becoming saturated in Hong Kong and Singapore, and that brands are no longer able to make a profit on their local investments.

The luxury watch industry is clearly mired in a crisis. Growth has slid from double digits to zero in just a few years, mainly because of lower demand from China and uncertainty regarding the global economy. But in my opinion, the problem has less to do with falling sales and more to do with excessive investments, such as boutiques in popular locations, factories teeming with workers and vast distribution networks. The excess is particularly flagrant in Hong Kong, where the watch industry is undergoing a marked contraction. Last year TAG Heuer, Jaeger-LeCoultre and Cartier closed shops in Hong Kong's Causeway Bay district. What's more, mature luxury markets like Singapore are becoming saturated.

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DOSSIER

Feature by
Clément Bürge,
Ludovic Chappex,
Catherine Cochard,
Benjamin Keller,
Grégoire Nicolet,
Jean-Christophe Piot
and Julie Zaugg

Superfood: the taste of tomorrow

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the future

Worldwide consumption of healthy foods is on the rise. Large companies are revamping their product lines to take advantage of the trend.

BY LUDOVIC CHAPPEX

With a market weighing in at more than \$700 billion a year, food industry giants all want a piece of the health food pie. Organic, protein- and vitamin-enriched, gluten-free or lactose-free, and the list goes on, the health food industry is now home to fierce global competition.

By shifting from traditional food manufacturing to health and wellness foods, multinationals can not only generate higher margins but also, and more importantly, meet the growing demand for more nutritional products. Studies show that more and more people in developed countries want to eat healthy food. Even more encouraging is a Nielsen poll led in 60 countries which reported that 88% of those surveyed are prepared to pay more for healthier food. And that applies to all age groups. Consumers mainly want “natural” products, with a preference for additive-free food. ▶

But not everyone is fortunate enough to have easy, regular access to fresh produce such as locally-grown fruit and vegetables. For example, city dwellers want to eat as healthy as possible, but have limited access to fresh food. This presents large food manufacturers with a golden opportunity. It therefore comes as no surprise that this market is currently exploding in China, where sales will soon exceed numbers observed in the United States. The London-based market research firm Euro-monitor estimates that the “health and wellness” food and beverage market amounted to \$117 billion in China in 2015 and will reach \$191 billion in 2020 – versus \$168 billion in the United States – suggesting average annual growth upwards of 10%.

The U.S. soft drink giant PepsiCo completely turned its strategy around by adding a line of fruit juice containing no sugar or additives

This trend can be found on supermarket shelves with the influx of low-fat, low-sugar and low-salt alternatives. Then there are the “functional” or “fortified” foods, lumped together in the “medical nutrition” segment, that have flooded the market. Large food groups such as Nestlé have announced that they aim to remove from their products any ingredients with a negative impact on health, starting with salt – public enemy No. 1 as the cause of cardiovascular diseases – and to add ingredients that play a positive role (fortified foods, micronutrients such as vitamins, iron, zinc, etc.). When presenting Nestlé’s annual earnings on 18 February 2016, CEO Paul Bulcke made a point of highlighting the efforts the firm has made – and will be making – in research and development.

Nestlé is in fact leading that market. Shifting its efforts into higher gear in its rivalry with Danone in the functional food business, the Swiss group created the Nestlé Institute of Health Sciences in 2010, a research unit set up on the campus of the École Polytechnique

Fédérale de Lausanne (EPFL) to develop solutions at the crossroads between nutrition and pharmaceuticals. Research and clinical trials have been conducted in areas ranging from Alzheimer’s and other brain diseases to metabolic and gastrointestinal disorders. Through the Nestlé Institute of Health Sciences, the Vevey-based firm has in recent years made a number of acquisitions specialised in medical nutrition. In its latest major deal on 23 February 2016, Pronutria Biosciences was picked up for 42.3 million Swiss francs. The U.S. start-up develops products that restore amino-acid balance to treat muscle disorders. Nestlé hopes its investments will pay off by zeroing in on the ageing population and its associated ills, including diabetes, high cholesterol and heart conditions.

Other large food manufacturers are opting for a less medicalised approach to taking advantage of the healthy-eating movement by focusing on wellness. For example, the U.S. soft drink giant PepsiCo completely turned its strategy around by adding a line of fruit juice containing no sugar or additives.

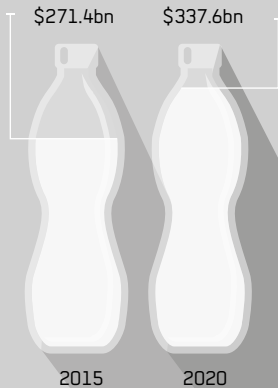
And we mustn’t forget the current fixation on proteins, now available in all types and forms, especially the “healthy” snacks popular with the 20 to 30 age group. “That is without a doubt the latest craze,” says Chris Lee, director of the Vitafoods Europe Conference, one of the largest events focused on functional food, set to take place in Geneva from 10 - 12 May 2016.

“The trend is biggest in the United States but is also emerging in Europe and Asia, markets with huge growth potential,” the expert says. Many of today’s consumers now view proteins – originally known for their use in dietary supplements taken by athletes who want to build muscle, such as the famous protein powders for body builders – as healthy ingredients. Among the advantages offered by proteins is their role in weight loss and weight management and in satisfying the body’s daily energy requirements. That’s very convenient, as insects, often seen as the food of the future, are full of proteins (see p. 52). And a number of start-ups have already tapped into that market. So what’s up next? The insect-filled Kit Kat? ▲

The health food market

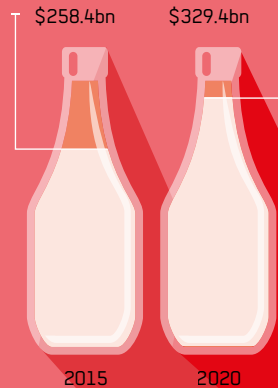
Retail sales worldwide
(Packaged food and beverages)

Naturally healthy food



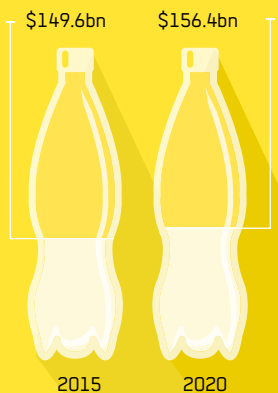
Packaged food and beverages containing a naturally occurring substance that offers health benefits. Examples: high-fibre food, olive oil or natural mineral water.

Fortified / functional food



Packaged food and beverages that have been actively "enhanced" during production by adding ingredients to offer health benefits and that are marketed as such. Example: orange juice fortified with Omega-3.

"Better for you" food



Packaged food and beverages from which less healthy substances (fat, sugar, salt, carbohydrates) have been actively reduced during production and that are marketed as such. Example: sugar-free soft drinks.

Food intolerance



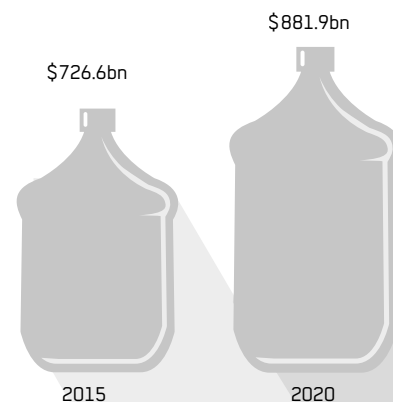
Packaged food and beverages designed to look and taste like food that normally contains a substance that can cause intolerance or allergies. Examples: gluten-free bread or lactose-free milk.

Organic food



Packaged food and beverages that have been certified "organic", i.e. produced without pesticides, fertilisers or GMOs, etc., and that are marketed as such.

"Health and Wellness" packaged food and beverages



Total retail sales of each category

“PEOPLE HAVE BECOME REALLY OBSESSED WITH PROTEIN”

Health food expert and director of the agency New Nutrition Business, Julian Mellentin analyses the latest trends in the nutrition industry.

BY JULIE ZAUGG

What are the most successful functional foods?

Demand is highest for functional food that contains natural ingredients with scientifically proven health benefits, such as almonds, which are good for the heart. Consumers aren't looking for functional foods when they go to the supermarket. They just want to buy healthy products.

Which companies are profiting the most from this trend?

Dairy firms that sell probiotics are definitely the leaders in this market. Danone, with its brands Actimel and Activia, and the Japanese group Yakult have been selling these types of products for 20 years. These two brands alone generate \$6 billion in sales per year with probiotics. Consumers are generally more attracted to products that help solve a recurring, day-to-day problem, such as poor digestion or susceptibility to colds. They're less interested in products that promise long-term benefits, such as foods that claim to reduce cancer risk or extend life expectancy. That also explains the popularity of gluten-free products, whose main draw is that they're good for the stomach day to day.

What other companies are joining in?

General Mills has done a very good job of adapting its offer to match its customers' desire to eat healthy food, as have Pepsico and Mondelez. There's also a host of small companies that do exclusively organic or gluten-free food. Many of them have actually been picked up by large groups. For example, General Mills bought the organic brand Annie's, and Campbell's acquired the organic baby food line, Plum. On the opposite end of the spectrum are companies like Unilever, which have failed to seize the opportunities presented by this new market because they're too big and lack entrepreneurial drive. As for Nestlé, it is struggling with an excessive focus on the scientific and medicinal aspects of its products, overlooking what consumers want, which is generally natural products.

“Large groups have also learnt to create the illusion that their products are made using artisanal processes.”

So there's no market for pure and simple functional foods?

There's a niche market for this type of medical food, for example people with diabetes or high cholesterol. But it's a high value-added market, typically with low volumes.

What about the organic food market? Does it have potential?

The size of the market tends to be over-estimated. It remains a niche market for high-income customers. Only 3% to 4% of consumers buy strictly organic. Others buy organic food occasionally because they like the packaging or the taste of a specific product. The only exception is baby food. Organic baby and toddler food brands, such as Annie's, Happy Family and Plum, have grown remarkably, driven by mothers who want to feed their child healthy food. The phenomenon can be seen in both western countries and large cities in China.

Can the desire to eat healthy be found around the world?

Definitely, it's truly a global phenomenon. Some countries, such as Germany, have gone as far as passing stricter regulations on the health



ORACLE OF NUTRITION

Julian Mellentin heads the research firm that he founded in 1995, New Nutrition Business. With offices in the United Kingdom, France, New Zealand and the United States, his agency advises companies that want to gain an edge in the nutrition industry.

benefits promised by these products. This can have a negative impact on their sales. But that's less common since the Internet, as consumers no longer depend on the product label for information about its benefits.

What are the latest trends on the functional food market?

People have become really obsessed with protein over the past five years, especially in the United States. And it's not unfounded. A pan-European study in 2010 called Diogenes showed that a high-protein diet was the most effective way to lose

weight. What has really taken off in recent years are plant proteins, less expensive and perceived as more eco-friendly. This sector has generated significant investment, like the start-up Beyond Meat, which produces fake chicken made from soy and pea protein with backing from Bill Gates [read p. 52].

How are large industrial groups responding to consumers' desire for fresh, locally-produced food? Isn't it a difficult challenge for them to overcome?

You first have to understand that

only 30% to 40% of customers like small brands. The rest are quite happy with mass-produced products. Large groups have also learnt to create the illusion that their products are made using artisanal processes. Most have bought small brands and left them a great deal of independence. That's how they retain the elements of craftsmanship that have made them a success. That's the strategy taken by General Mills with Annie's or Campbell's with Plum. Having a vast portfolio made up of a multitude of small brands also gives consumers the chance to personalise their food choices based on individual preferences. One person will choose to eat organic and gluten-free food, while another will only eat foods that contain no lactose or trans fat.

“Consumers look things up online and form their own opinion about the benefits of a given food.”

Functional food has drawn a lot of criticism in recent years due to some of the exaggerated claims. Has that affected sales?

People in some countries, such as the Netherlands or Germany, have been very receptive to this criticism. But consumers tend to ignore it elsewhere. They look things up online and form their own opinion about the benefits of a given food. Companies have also learnt not to make claims that they can't prove. They now limit themselves to mentioning that a food contains a certain ingredient with well-known health benefits, rather than promising that their product can cure a given ill. ▀

Spotlight on fifteen big names

Competition is intensifying between multinationals in the health food industry. Here's our selection of the key players, along with analysts' recommendations.

BY CLÉMENT BÜRGE AND JULIE ZAUGG

Gluten-free,
lactose-free or
additive-free foods

Organic food

Fortified or
"functional" food

CAMPBELL SOUP COMPANY The stubborn visionary

Meals for diabetics, salt-free soup, ingredients free of colouring – Campbell's has tried everything in the functional food sector.

MARKET CAPITALISATION: \$19.84 Billion

REVENUE IN 2015: \$8 Billion

EMPLOYEES: 18,600

HEADQUARTERS: CAMDEN (NEW JERSEY)

FOUNDED: 1869

In 1997, Campbell's launched a line of subscription-based home-delivered meals called Intelligent Quisine. Targeting people with diabetes and cardiovascular problems, this range of products consisted of dishes designed to lower cholesterol and sugar levels. But the brand, too far ahead of its time, was removed from sale one year later.

The company decided to halve the salt content of its soups in 2009. That was another failure. People didn't like the taste, and the project was abandoned in 2011. Now Campbell's has taken a new, more conventional initiative. "The ingredients have been simplified, the colourings and additives have been eliminated, and organic product lines have been introduced," says Erin Lash, an analyst at Morningstar.

The company has also made several acquisitions. In 2012 it bought Bolthouse Farms, which makes fruit juices, bags of pre-cut carrots and açai berry-based products, and a year later it bought Plum Organics, which specialises in healthy food for children. "These acquisitions allowed Campbell's to gain know-how in the functional food sector, which the company was able to apply to the rest of its product mix," says Lash. But she also points out that the company's shares are slightly overvalued at the moment.  CPB

"Campbell's Soup II" (1969) by the artist Andy Warhol, an ironic tribute to the U.S. firm's soup cans (Dulwich Picture Gallery in London, 19 June 2012).

WHOLE FOODS

The delights of a natural foods supermarket

This line of food stores sets itself apart from the competition through the quality of its products. But its prices are too high.

MARKET CAPITALISATION: \$10.34 Billion

REVENUE IN 2015: \$15.39 Billion

EMPLOYEES: 85,000

HEADQUARTERS: AUSTIN (TEXAS)

FOUNDED: 1980





Shopping at Whole Foods is like going to an amusement park for adults. Mountains of fresh vegetables are piled alongside cheeses from the world over and a vast selection of meats prepared by a local butcher. With this staging and the quality of its products, the company has succeeded in creating a long-lasting relationship with its customers – which is relatively unique in the food distribution industry. “Whole Foods is also trying to convey environmentally friendly values that connect with consumers,” explains Neil Stern, an analyst at

McMillanDoolittle. “Each store is very well established within its local community.” And the results are obvious: its sales per square foot amount to \$990, the highest such figure amongst US supermarkets.

“Whole Foods is also trying to convey environmentally friendly values that connect with consumers.”

Despite this success, analysts criticise the prices charged by Whole Foods. “Compared to the

competition, its prices are too high, which limits the number of consumers it can target,” explains Phil Terpolilli, an analyst at Wedbush Securities. To thwart the critics, in 2016 the company will open a chain of smaller stores, called 365, which will charge lower prices. “Historically, investors have had inflated expectations of Whole Foods,” says Stern. “The company’s changes to become more accessible to a larger number of customers are in full swing. It’ll take time, but I think the company will successfully manage this transformation. I recommend purchasing its shares.”  WFM



NEWSCOM / AGENCIA EL UNIVERSAL GDA PHOTO SERVICE

Open house event on the digestive system, sponsored by Danone and its Activia brand. (Mexico City, July 2010)

DANONE A pioneer in functional foods

Danone's little Actimel bottles have been attracting consumers for years. The company has expanded its product line to include products for people suffering from malnutrition and Alzheimer's disease.

MARKET CAPITALISATION: €41.6 Billion

REVENUE IN 2015: €22.4 Billion

EMPLOYEES: 99,781

HEADQUARTERS: PARIS


FOUNDED: 1919

When Danone launched its Bio product in 1987 – a little bottle of milk containing bifidus (bacteria that facilitate digestion) –

no one had yet heard of probiotics. Today, it is one of the French company's flagship products. "Alone, it's worth €2.5 billion," says Jon Cox, an analyst at Kepler Cheuvreux. It has since been renamed Activia and was joined in 1997 by Actimel, which contains lactobacillus bacteria meant to strengthen the body's natural defences. More recently, the line was expanded with Densia, a yoghurt high in calcium that promotes bone density, and Danacol, a dairy product that lowers cholesterol.

"Danone has prestige as a European brand."

Jon Cox, an analyst at Kepler Cheuvreux

Danone's Nutricia division has launched food supplement drinks for people suffering from malnutrition (FortiFit, Nutrison) and Alzheimer's disease (Souvenaid), and for infants allergic to milk (Neocate). These products have positioned the French group as a leader in the functional foods market. "The sector showing the strongest potential in terms of revenue is infant nutrition," says Jon Cox. "Danone has prestige as a European brand, especially with Chinese mothers who are looking for top-quality powdered milk for their babies." The Aptamil and Nutrilon brands are enormously popular. Probiotics sales, however, have been languishing in recent years. "By forbidding Danone in 2010 to promote the health benefits of these products, the European Food Safety Authority dealt them a blow," says Cox. (For more, see p.48.)  BN

MEIJI HOLDINGS**A brand for seniors**

Meiji probiotic yoghurts have conquered the Japanese market thanks to their digestive qualities. The company is now looking to sell them worldwide.

MARKET CAPITALISATION: ¥1429 Billion

REVENUE IN 2014: ¥1161 Billion

EMPLOYEES: 26,854

HEADQUARTERS: TOKYO

FOUNDED: 1906

By 2025, one in three people in Japan will be over the age of 60. Meiji hopes to make the most of this demographic trend by targeting seniors who are concerned about their health and their budget. The company first launched two probiotic yoghurts – LG21 in 2000 and R-1 in 2009 – promoting their role in facilitating digestion and strengthening the immune system. Last year, the century-old group launched a new yoghurt variety, PA-3, which contains bacteria that can metabolise purine. Purine is a nucleic acid found in red meat, fatty foods and beer. It causes gout, a type of joint inflammation often seen in the elderly.

On the market since 1995, the Mei Balance line includes high-calorie jellies, mousses and juices for seniors suffering from malnutrition. Meiji is a solid investment. In the first nine months of the current financial year, the company turned a profit of ¥59.3 billion, up 38%. It has a dominant position on the Japanese probiotic yoghurt market and expects its sales in this sector to increase from ¥165.4 billion in 2015 to ¥180 billion in 2018. The company's main challenge is conquering new markets. Its primary target is the United States, but its brands suffer from a lack of visibility there. — 2269

KELLOGG'S**The new convert to healthy breakfasts**

Americans are abandoning their cereal bowls, forcing this US group to reinvent itself.

MARKET CAPITALISATION: \$26.98 Billion

REVENUE IN 2015: \$13.5 Billion

EMPLOYEES: 33,577

HEADQUARTERS: BATTLE CREEK (MICHIGAN)

FOUNDED: 1906

Kellogg's' worries began in 2008. "American consumers gradually turned away from the classic cereal-based breakfast, preferring to consume protein in the form of yoghurt, bacon and

eggs," explains Warren Ackerman, an analyst at Societe Generale. This trend became more marked with the emergence of millennials, who preferred healthy GMO-free foods with whole grains, and the falling popularity of low-fat products such as Special K.

Kellogg's is now in full remission

But the company took a new initiative in mid-2015. "Kellogg's launched the Origins product line, which has no artificial colours, flavours, or added sugars," says Ackerman. "The group also transformed Special K into a brand associated with a healthy lifestyle, adding varieties with no gluten, lots of protein, and featuring popular grains such as quinoa. Plus it improved the quality of its ingredients, for example by increasing the number of berries per box." At the same time, Kellogg's expanded its offering of cereal bars, biscuits and shakes, which can be consumed on the go and throughout the day. As a result, the US company is now in full remission. Its six main cereal brands have seen 4% growth in the last quarter of 2015. "We recently changed our recommendation from 'sell' to 'hold', and we're keeping our eye on Kellogg's," says Ackerman. — K

REUTERS / THOMAS PETER



A little break for Tony the Tiger, the famous mascot for Kellogg's Frosties cereal (International Green Week in Berlin, 18 January 2013).

WHITEWAVE FOODS The lactose-free champion

This US company's soy milk-, coconut milk- and cashew milk-based margarines and yoghurts are all the rage. Analysts say it's an excellent investment.

MARKET CAPITALISATION: \$7.12 Billion

REVENUE IN 2015: \$3.9 Billion

EMPLOYEES: 3,800

HEADQUARTERS: DENVER (COLORADO)

FOUNDED: 1977

Coconut, soy, almond and cashew are just some of the ingredients used by the US group WhiteWave Foods to produce lactose-free milk, margarine and yoghurt. In the United States, these products are sold under the Silk and So Delicious brands. The brand name in Europe is Alpro. "Plant-based dairy products are a fast-growing category," says Sean Naughton, an analyst at Piper Jaffray.

"It's a very good investment – especially since the share price is low."

Sean Naughton, an analyst at Piper Jaffray

"Consumers are looking for sustainable products, and they feel better avoiding lactose." WhiteWave Foods brands are well-positioned in this market. "They are well-known to buyers – you can find them easily in both small shops and supermarkets – and they're constantly innovating with new products, such as the

Nutchello drink that Silk recently introduced and that comes in caramel or chocolate flavour," says the analyst.

WhiteWave Foods also has two of the most popular organic brands in the United States – Horizon (milk) and Earthbound Farm (fruits and vegetables) – as well as Vega, a line of protein bars and drinks for athletes. "WhiteWave has an excellent brand portfolio with organic growth of 7 to 9% and rising margins," says Sean Naughton. "It's a very good investment – especially since the share price is low." — WWAV

ARCHER DANIELS MIDLAND Giving flavour to healthy products

This company develops flavours to improve the taste of healthy foods whose flavours are altered by adding vitamins or eliminating fats.

MARKET CAPITALISATION: \$21.65 Billion

REVENUE IN 2015: \$67.7 Billion

EMPLOYEES: 32,300

HEADQUARTERS: CHICAGO (ILLINOIS)

FOUNDED: 1902

For some time, Archer Daniels Midland (ADM) confined itself to purchasing crops and transforming corn and other oil-producing plants into biofuel, chemical products and animal feed. But in 2014, the company decided to change its trajectory, buying for the price of \$3 billion the Swiss company Wild Flavors, a firm based in Zug that develops flavours and seasonings. With this acquisition, ADM worked to improve the taste of healthy foods, to which fibre, vitamins and other nutrients are often added, which modifies them.

As a result, ADM is now marketing a soy protein concentrate as well as seasonings that render beef and chicken more flavoursome and juicy. The company has also developed an additive, xanthan gum, which preserves the texture of salad dressing even when the fat has been eliminated. And that's only the beginning. "We are currently working on over 700 projects," announced Vince Macciocchi, President of ADM's Wild Flavors unit, to the press. We are especially excited about the development of a fruit juice with natural colourings and flavourings which incorporates our protein solution Clarisoy for the first time." But these new products will only have a long-term impact on the company's performance. Its revenue depends more on corn processing, a sector whose profits are declining. — ADM

REUTERS / USA TODAY SPORT



The ritual celebratory Gatorade shower for baseball player Danny Valencia of the Oakland Athletics, after his team's victory against the Houston Astros (Oakland, 9 August 2015).

PEPSICO**The healthy beverage challenge**

Consumers are turning away from sodas, which they find too unhealthy. PepsiCo is laying its bets on coconut water and fruit juices.

MARKET CAPITALISATION: \$148.34 Billion

REVENUE IN 2015: \$63.06 Billion

EMPLOYEES: 263,000

HEADQUARTERS: NEW YORK

FOUNDED: 1965

Nutrition and public health experts all agree: soda is the “new tobacco” and the public enemy no. 1 that governments have resolved to eliminate. “Sugary drinks are seen as even more unhealthy than snacks,” says Ali Dibadj, an analyst at Bernstein Research. “People believe they can still allow

themselves to snack from time to time, but drinking soda has become taboo.” A Euromonitor study found that consumers spent 49% of their soft drink budget on healthy drinks in 2013. Water, ready-to-drink tea and fruit juices will generate 65% of new sales by 2018. As a result, PepsiCo has had to react quickly to seize this new market and make up for the losses in its traditional brands.

The company announced that it will launch organic Gatorade products in 2016

The US company has acquired and launched a complete line of drinks regarded as healthy. One of the most innovative lines is Naked Juice, a range of fresh juices that played an important part in making bottled vegetable juices popular. “These drinks will gain even more popularity in 2016 with the launch

of a line of fresh-squeezed juices,” says Howard Telford, an analyst at Euromonitor. PepsiCo is also betting heavily on Gatorade, which has dominated the sports drink sector for several years. The company announced that it will launch organic Gatorade products in 2016. In addition, its coconut water brands, ONE and Kero-Coco, are selling very well in North and South America.

Although its revenue still depends greatly on unhealthy products, PepsiCo’s efforts have been convincing to analysts, who believe that, over the long term, the company will overcome the challenges confronting the soda industry. “It will continue its policy of acquiring products whilst polishing its traditional brands, working on their marketing,” says Telford. “The healthier drinks do generate higher profit margins,” says Dibadj, who recommends acquiring shares in the company. — PEP



NESTLÉ A functional foods leader

Nestlé is developing functional foods that blur the line between food and medicine. It's a bet that has paid off.

MARKET CAPITALISATION: \$230.84 Billion

REVENUE IN 2015: CHF 88.8 Billion

EMPLOYEES: 335,000

HEADQUARTERS: VEVEY

FOUNDED: 1866

In 1986, Nestlé believed that functional foods were the future of the food industry. At that time, the Swiss multinational had created a joint venture with the US

pharmaceutical group Baxter to develop such products. This attempt folded in 1996 with the dissolution of the venture. But Nestlé did not throw in the towel, investing several hundred million Swiss francs in start-ups specialising in the food of the future. In 2007, the company shifted into high gear, acquiring the medical nutrition division of Novartis for 3 billion Swiss francs. In 2012, it announced the opening of the Nestlé Institute of Health Sciences (NIHS), a research institute with its headquarters on the EPFL campus. With a 10-year budget of €415 million, its objective is to “invent foods that prevent the occurrence of disease,” according to its director Emmanuel Baetge. As it awaits the first concrete results, Nestlé is counting on

several products that improve the health of its consumers, such as the probiotic yoghurt LCL, which helps to strengthen the immune system. The Swiss company has also reduced the salt, sugar and fat content of several of its foods. For example, it launched the ice cream line Skinny Cow, whose products have 30% less fat than those of its competitors. Nestlé is also working on developing Fostrap Gum, a chewing gum that helps fight against kidney disease. More recently, the company announced the development of a kind of “functional food Nespresso machine” that will dispense a made-to-measure daily dose of vitamins and minerals to compensate for overeating or nutritional deficiencies.

Nestlé invested several hundred million Swiss francs in start-ups specialising in the food of the future

To analysts, it makes sense to wager on the Nestlé functional foods division. “This family of products has seen growth that is faster than the rest of the food industry, showing better profit margins,” says Jon Cox, an analyst at Kepler Cheuvreux. And the Swiss company seems bent on taking advantage of this fact: “Nestlé is bound to withdraw from products that offer no added value to customers and which cannot command higher prices,” said its CEO Peter Brabeck, who pointed out that all of the company’s pasta factories had been closed and that it would only retain one production site for its tomato sauce. — NESN

A scientist at work in the labs of the Nestlé Institute of Health Sciences, at the Swiss Federal Institute of Technology in Lausanne (11 March 2013).





NEWS.COM / KYODO

A goat-shaped soap from the brand Yakult Honsha, available for sale from autumn 2014 to autumn 2015, for the Chinese zodiac year of the goat.

YAKULT HONSHA **The inventor of probiotics**


The Japanese creator of probiotic yoghurt with digestive qualities is also developing cosmetics and medicine.

MARKET CAPITALISATION: ¥912.98 Billion
REVENUE IN 2015: \$3.42 Billion
EMPLOYEES: 20,492
HEADQUARTERS: TOKYO
FOUNDED: 1935

The Japanese company's flagship product is a white liquid pumped into a small white bottle with a red cap. This probiotic yoghurt, called Yakult, was invented in 1935 by the Japanese scientist Minoru Shirota to aid in digestion. Enormously successful in Japan, Yakult Honsha has diversified its offering of probiotic products by launching Joie fermented milk, cosmetics and medicine, among

other products. The company recently filed a patent for a chemotherapeutic agent, Elplat, which will be used to treat gastric cancers.

Yakult has successfully established itself in China and Mexico

With a significant presence in Japan, the company went international several years ago and has successfully established itself in China and Mexico. This agenda will continue in 2016, as Yakult Honsha plans to establish itself in the Middle East and Myanmar, which will improve its medium-term performance. In addition, the company continues to invest in research and development. A scientific study is currently underway to analyse the effect of Yakult on the human body in space. The results will be announced in four years.  2267

UNITED NATURAL FOODS **The luxury supplier**

This company supplies US organic supermarkets, offering them a wide range of natural products.

MARKET CAPITALISATION: \$2.06 Billion
REVENUE IN 2015: \$8.2 Billion
EMPLOYEES: 8,700
HEADQUARTERS: PROVIDENCE (RHODE ISLAND)
FOUNDED: 1996

United Natural Foods functions as the "lung" of natural food supermarkets like Whole Foods and Trader Joe's. The company is the largest supplier of natural, organic and specialty foods in the United States. United Natural Foods consolidated this position last March through the purchase of its competitor Haddon House Food Products for \$217.5 million. Haddon House is the largest private distributor of organic, ethnic and kosher foods.

"Strategically, this acquisition makes sense," Guggenheim Securities writes in a report. United Natural Foods now has access to new customers, new networks and a new product mix that includes exclusive brands such as Asian Gourmet and Bella Famiglia (two lines of Asian and Mediterranean products adapted to the US market). For 2016, United Natural Foods has revised its growth objectives down to 2% compared with 20% in 2015, which has weakened its share price. "This slowdown is not harmful over the long term," says Joe Edelstein, an analyst for Stephens. "We are confident that the company will recover." Guggenheim Securities believes that a purchase of United Natural Foods shares "will award patient investors."  UNFI

BASF**The omega-3 expert**

This German group has put its expertise to use in the chemical industry to produce food supplements. It dominates the Vitamin A market.

MARKET CAPITALISATION: €60.34 Billion

REVENUE IN 2015: €70.45 Billion

EMPLOYEES: 112,435

HEADQUARTERS: LUDWIGSHAFEN, GERMANY

FOUNDED: 1865

BASF, the largest chemical product manufacturer in the world, entered the nutrition market in 2012 with the launch of “Newtrition”, a unit that brings together all of its research and development efforts in the food sector. “Since vitamins, carotene and enzymes are produced by chemical processes, BASF finds itself in a choice position for entering this market,” says Markus Mayer, an analyst at Baader Bank.

**BASF is predicting
a drop in its sales
and profits for 2016**

Today, the company has become a heavyweight in the omega-3 fatty acid sector, thanks in part to its acquisition of the company Equateq in 2012. It dominates the Vitamin A market to such an extent that it was able to unilaterally order a 20% price increase for that product in February. “The demand for these types of compounds will only increase in the future due to the ageing population,” says Mayer. However, the BASF nutrition division has too little of an influence within the group to have a real impact on its performance. After a bleak 2015, BASF is again predicting a drop in its sales and profits for 2016 due to falling oil prices. — BAS

BASF

**MONDELEZ****The breakfast revolution**

After a sluggish beginning, Mondelez has succeeded in creating healthy and popular products, such as Belvita biscuits.

MARKET CAPITALISATION: \$62.44 Billion

REVENUE IN 2015: \$29.6 Billion

EMPLOYEES: 99,000

HEADQUARTERS: DEERFIELD (ILLINOIS)

FOUNDED: 1923

(SEPARATED FROM KRAFT FOODS IN 2012)

The owner of the Oreo biscuit brand took its time developing healthier snacks. But once the machine was put in motion, Mondelez showed unbounded creativity. Its most successful brand, Belvita, is transforming breakfast as we know it. Belvita is a whole-grain biscuit that replaces the first meal of the day. “The brand benefits from peoples’ desire to eat healthy, plus the fact that they no longer have time to eat breakfast at home,” says Alicia Forry, an analyst at Canaccord Genuity. Mondelez has also just acquired Enjoy Life Foods, a producer of natural snacks (GMO-free,



The BASF plant conducts biotechnology research at the Research Triangle Park in North Carolina.

gluten-free and with no artificial ingredients). The US brand has also made efforts to adapt its traditional products, creating the reduced-fat Oreo Thins, for example.

“Mondelez’s overall performance remains excellent, and its shares are selling at a price scarcely higher than that of its competition.”

Alicia Forry, an analyst at Canaccord Genuity

But it may not be enough. “Mondelez has still got a long way to go,” says Forry. “Its portfolio is still very exposed to the risk of sweetened products.” The company has set a goal to earn 50% of its sales from healthy products by 2020. Despite this, Forry still recommends the purchase of Mondelez shares: “The company’s overall performance remains excellent, and its shares are selling at a price scarcely higher than that of its competition.” — MDLZ

DSM From coal to vitamins

This Dutch company dominates the vitamin market. But Chinese competitors are ready and waiting to take over.

MARKET CAPITALISATION: €8.89 Billion

REVENUE IN 2015: €8.9 Billion

EMPLOYEES: 20,750

HEADQUARTERS: HEERLEN,
NETHERLANDS

FOUNDED: 1902

DSM was originally founded to exploit coal mines in the Netherlands. But over time, the company diversified, developing chemical products. Then, in the 1990s, it decided to concentrate on biotechnology and foods, acquiring the nutrition division of Roche in 2003 and that of Cargill in 2012. Today, DSM is the world leader in the production of nutritional ingredients, such as vitamins, carotene and fatty acids (such as omega-3).

Nevertheless, the Dutch company has seen some difficulties during the last few years due to the arrival on the market of Chinese producers of Vitamin C and E. “These companies are prepared to cut prices and lose money in order to gain market share,” notes Mutlu Gundogan, an analyst at ABN AMRO. “Currently, DSM is losing €15 to €20 million a quarter on the Vitamin E market.”

Fernand de Boer, an analyst at Petercam, is more optimistic. “DSM has launched a cost-reduction programme,” he points out. “And it is planning to sell its shares in the Canadian pharmaceutical company Patheon, which could improve its profitability considerably.” He recommends purchasing DSM shares. — DSM



Environmental activists dressed as characters from General Mills food products, urging the U.S. firm to reduce its greenhouse gas emissions (New York, 8 July 2014).

GENERAL MILLS Eliminating the artificial

This US giant is making an effort to produce food with no artificial flavours, chemical colourings or gluten – and it's working!

MARKET CAPITALISATION: \$37.3 Billion

REVENUE IN 2015: \$17.63 Billion

EMPLOYEES: 42,000

HEADQUARTERS: MINNEAPOLIS (MINNESOTA)

FOUNDED: 1866

The producer of Häagen-Dazs and Cheerios has been on a quest to create “natural” food for ten years now. “General Mills arrived on this market more quickly than its competition,” explains Alexia Howard, an analyst at Bernstein Research. The company has launched several lines of products free of colours, artificial flavours,

preservatives and antibiotics.” General Mills has even committed to ridding 90% of its cereals of artificial ingredients by the end of 2016, up from 60% in mid-2015.

“General Mills is successfully transitioning to healthier foods.”

Jack Russo, an analyst at Edward Jones

The company has been especially innovative in the snack market, which it dominates with 26.5% of all US sales. Of note are its cereal bar brands Nature Valley and Larabar. “General Mills has also internationalised the Fiber One brand, which mainly sells cereal bars. It does very well in Mexico and has just been launched in the United Kingdom,” explains Chris Brockman, an analyst at Mintel.

In 2014, General Mills also gained a gem of the organic and gluten-free sector by acquiring Annie's, a California-based company that makes pasta, biscuits and cereal. This purchase allowed it to invest in a new market. “Annie's develops organic products that are very popular with children,” says Brockman. Since it joined the fold of the large US company, the product line has developed even more quickly, especially in the children's organic soup sector.”


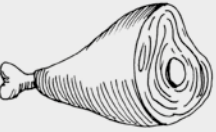


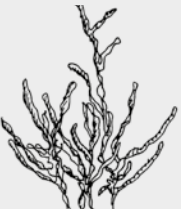
Developing healthy products has allowed General Mills to compensate for its other more traditional divisions – cake brand Betty Crocker saw its sales fall 10% in 2015. “The company is successfully transitioning to healthier foods,” says Jack Russo, an analyst at Edward Jones. “Its portfolio is overtaking the competition.” He recommends buying its shares.

— GIS

THE HEALTHY INGREDIENT COMBO

Overview of the top five favourite nutrients of consumers and brands.

BY GRÉGOIRE NICOLET

	NATURAL SOURCES	EFFECT ON HEALTH	ON THE MARKET
OMEGA-3 	Fatty fish, seafood, algae, canola and flaxseed oil, walnuts, certain genetically modified plants	Reduces blood pressure, improves cardiovascular health and cognitive performance	Dietary supplements (capsules, pills), Omega-3 enriched food (margarine, milk, bread, cookies)
PROTEIN 	Animal proteins (meat) and plant proteins (legumes such as beans)	Develops or maintains muscle mass, contributes to weight loss and management, controls appetite, satisfies daily energy needs	Dietary supplements, protein powders, energy drinks, "healthy" snacks
VITAMIN D 	Cod liver oil, salmon, mushrooms, eggs	Maintains healthy bones, prevents osteoporosis, prevents certain forms of diabetes and cancer, fights rickets in children	Fortified dairy products and grains
MAGNESIUM 	Cereal grains, seafood, almonds	Binds calcium, helps muscles relax (sedative effect), reduces stress, prevents memory loss, and reduces allergic and inflammatory responses	Dietary supplements, chocolate, unrefined cereal grains (made with whole flour which contains more magnesium)
MICRO-ALGAE 	About ten varieties of algae, chlorella and spirulina produced on a large scale	Lowers cholesterol, is a source of protein, antioxidants and trace elements (iron, iodine, fluoride)	Dietary supplement against malnutrition, tea, beer, fruit juice, chocolate

Functional foods for animals

The pet food market could grow to \$98 billion by 2025. The therapeutic foods segment looks particularly promising.

BY CATHERINE COCHARD

Pet foods are becoming just as specialised as human foods, with gourmet, organic and low-fat varieties. Supermarkets and veterinarians are offering more and more products for dogs and cats that promise to make their fur shine brighter, clean their kidneys or improve their general health. "What's really helping the industry grow is our desire to 'humanise' our pets," says Debbie Phillips-Donaldson, editor-in-chief of the US magazine *Petfood Industry*. "Pet food producers are taking advantage of the close bond between us and our pets. If your veterinarian tells you your dog has digestive problems and you see biscuits at the shop that contain an agent for improving digestion, what would you do?"

Like baby food, pet food is unique in that the consumer does not buy the product. And that's a major factor behind the industry's success: buyers feel responsible – a bit like with their children. A study by US firm Mordor Intelligence says the pet food market is worth \$68 billion and could reach \$98 billion by 2025. The functional pet foods sector accounts for \$2.3 billion, and that figure could reach \$4.5 billion by 2025.

Functional pet foods offer the industry endless possibilities for diversification. Just like in the healthcare industry for humans, you can create a product for just about any type of problem, from excess weight, diabetes and allergies, to heart, teeth and skin problems. The main active substances in functional pet foods are omega-3 fatty acids, proteins, peptides, plant-based enzymes and antioxidants.

Blue Buffalo released its figures, which were far better than expected

"Food and cosmetics giants are now looking to develop their portfolio in this segment, and many are starting to buy up niche companies," says Snehika Vadlakonda, analyst at Mordor Intelligence. There are plenty of examples. Mars is developing several brands in pet health and well-being. The company bought Eukanuba – a brand specialising in functional dog and cat food – for \$2.9 billion from

A greyhound in top form at the annual AKC/Eukanuba National Championship, the largest dog show in the United States.



Procter & Gamble in 2014. Mars also owns Buckeye Nutrition, a brand that produces therapeutic foods for horses. In addition, the group owns Banfield Pet Hospital, a chain of veterinary clinics in the United States, the United Kingdom and Mexico.

**Blue Buffalo
expects average
annual growth
of 10% for the
next three years**

Nestlé Purina is the world's second-biggest pet food producer.

In October 2014, the company launched Just Right, a personalised dog food product. Dog owners in the United States can go to a dedicated website and enter their dog's name, breed, weight, level of activity, age, fur type, skin type and food preferences (salmon, chicken, lamb, etc.). A few days later, the customised product arrives at their doorstep.

Blue Buffalo – another company in this line of business – floated on Nasdaq (BUFF) in July. The US company released its quarterly figures on 9 March. And despite recent legal troubles, the results were far better than expected. The company

was hit with a class action lawsuit in the United States for “false and misleading” labelling – the actual composition of certain foods sold in 2008 did not correspond to what was written on the packaging – and could be ordered to pay back \$32 million.

The firm did not appear to be rattled and announced that its revenue increased 12% in 2015 and that it expected average annual growth of 10% for the next three years. The announcement restored investor confidence. Blue Buffalo shares have soared since the company released its results in March. ▲



ZACH MAHONEY

Functional food, lies and marketing

“Treats erectile dysfunction.” “Improves eyesight.”
“Helps digestion.” Some functional food makers will promise you anything. But governments have begun to crack down on the food industry, especially in Europe.

BY CLÉMENT BÜRGE

The food industry seems to have a solution to all our problems. Pom Wonderful boasts the benefits of its pomegranate juice in addressing erectile dysfunction, while Lipton extols the antioxidant virtues of its tea to reduce cholesterol. Meanwhile, Kellogg's claims that its Frosted Mini-Wheats cereal improves children's attention span by 20%. That's wonderful news, but too good to be true.

In 2015, American and European regulatory agencies declared that Pom Wonderful's advertising claims were simply deceptive. In 2006, Lipton was formally banned from mentioning antioxidants in its future marketing campaigns. A complaint filed in 2009 revealed that Kellogg's was basing its claims on comparative studies between children who had eaten its cereal and children who had only had water for breakfast.

That's right. The functional food industry has been sparking controversy for ages. Many nutritionists believe that these products have nothing to offer consumers. “It's a marketing strategy,” says Patrick Leconte, a well-known nutritionist based in Geneva. “Fibre or vitamins can definitely be added to cereal,

but it's still hard to prove the benefits of a product or substance for the human body.”

“It's still hard to prove the benefits of a product or substance for the human body.”

Patrick Leconte, nutritionist

On that basis, “at best, customers waste their money on an expensive product that has no real effect,” the expert says. But in the worst case, the functional food can give people the false impression that they're eating healthy and disrupt a balanced diet. “A person will eat cereal enriched with vitamin C but stop eating apples or oranges, because they believe their diet is balanced,” says Patrick Leconte. “People also eat probiotics to strengthen their immune system. But these microorganisms have the side effect of promoting weight gain, which just ends up weakening the body.”

The food industry has always exaggerated the virtues of its products. In the late 19th century, Coca-Cola explained that its beverage could cure morphine addiction, dyspepsia, headaches and impotence. Until the beginning of the 1930s, Guinness asserted that a pint a day of its beer strengthened the immune system and promoted digestion and sleep. In the 1970s, Danone adverts featured people from Georgia, part of the Soviet Union at the time. The posters claimed that they lived to be older than 137 by eating a yoghurt-based diet.

Misleading information has slipped past for so long because of the loopholes in food regulations. “When a pharmaceutical company releases a new drug on the market, it has to prove its efficacy with costly, rigorous studies,” says Yves Schutz, a professor with the Faculty of Medicine at the University of Lausanne. “Regulations are not as strict in the food industry, which means they can get away with these overblown claims.”

The first rules were introduced in the 1990s, when sales of functional foods took off. But it took until the 2000s before any real measures were taken to regulate the industry and its constant dubious claims. ▶

GUINNESS



GUINNESS FOR STRENGTH

Vintage Guinness posters: until the 1930s, the Irish brewery company claimed that its beer strengthened the immune system.

"The European Union came down hard in 2006," Schutz says. "It asked the European Food Safety Authority (EFSA) to examine all the health claims of products available on the European market."

The food industry has always exaggerated the virtues of its products

Overnight, nearly 44,000 claims were filed with the EFSA. Each manufacturer had to demonstrate, using scientific research, how its food products offered the benefit described on the packaging. The substances under review ranged from Omega-3 to taurine to shark cartilage. Some cases were founded on the Bible or Wikipedia to justify the benefits of their products.

What conclusions can be drawn from this analysis? "It was a disaster. Fewer than 20% of the claims were deemed credible," says Yves Schutz. None of the products were taken off the market, but the European Union forced companies to adapt their advertising campaigns for these products accordingly. Even the highly respected firm Danone, which claimed that its Activia and Actimel yoghurt improved digestive health, had to back down. The French multinational adjusted its advertising campaigns in 2010 based on its own research showing that its two products affected intestinal transit time as much as a placebo.

In Switzerland, the Swiss Federal Food Safety and Veterinary Office (FSVO) keeps close tabs on these

matters. "Today, we have a list of 200 general authorised health claims, such as 'calcium is essential for maintaining healthy bone structure' and 'plant stanols lower cholesterol in the bloodstream,'" says Michael Beer, head of the Division of Food Safety at the FSVO.

However, if product claims do not fall into one of these categories, the manufacturer has to file an application with the federal government. And the claims must be based on scientific evidence. "We want to see clinical trials conducted on a group similar to the Swiss population," the expert says. "For example, they can't be carried out in Asia or on animals."

But if these studies are submitted by the companies themselves, how can we be sure that they're not biased? "We require the raw data used in this scientific research to check the validity of their claims," Beer says. "An ethics committee reviews each application." About

ten new claims are submitted for approval by the FSVO every year. "One or two products are accepted on average," he says. The FSVO tries to align its practices as much as possible with those of the European Union.

These regulatory efforts have significantly improved the situation, but some nutritionists are not entirely convinced. "The food industry often manages to sidestep certain regulations by slightly altering the wording in adverts," says Patrick Leconte. "There are no miracle foods. The key to staying healthy is simply to eat a balanced diet. The human body will take the nutrients it needs from the diversity of the food we eat." But the nutritionist points out that lactose-free, gluten-free and natural products do make sense from a nutritional standpoint. "Science, especially genomics, has shown that some individuals tolerate certain ingredients better than others," the expert says. "Customising our diets can have a positive impact on our health." ▲

History's worst functional foods

RADITHOR, THE RADIOACTIVE WATER

This radium-charged water was sold between 1918 and 1928. Its inventor, William J. A. Bailey, claimed that his drink could treat more than 150 different health problems. Radithor was taken off the market when one of its most loyal customers, the American industrialist Eben Byers, lost his teeth and his jaw came off. Byers drank up to three bottles of Radithor a day for two years.

CORN FLAKES, THE ANTI-MASTURBATION CEREAL

The American doctor John Harvey Kellogg, a fervent evangelical, invented Corn Flakes in 1878 to prevent children from masturbating. He thought that flavourless food would reduce sexual impulses.

KINDER, MAGIC CHOCOLATE

For years, the sweet treat made by Ferrero was sold under the slogan, "Kinder, the chocolate that helps to grow". The European Food Safety Authority prohibited Ferrero from using that wording in 2006. The company had never conducted any studies on the impact of its chocolate on children's growth.

VITAMINWATER, THE DRINK PACKED WITH SUGAR

The beverage launched in 2000 claimed to strengthen the immune system and reduce the risk of eye disease. Since then, several U.S. courts and European health agencies have shown that a bottle of Vitaminwater contained as much sugar as 2.5 doughnuts (33g) and brought no useful vitamin supplement.

“We identify ourselves by what we don’t eat”



Patrick Denoux, a professor of cross-cultural psychology at the University of Toulouse, studies the causes of our obsession with healthy food.

BY JULIE ZAUGG

People are increasingly concerned about what they eat. Where does that come from?

After World War II, people let go of their mistrust of food for the first time in human history. They delegated the control over their diet to public health authorities and placed their faith in the mass production practices of major industrial groups. But that trust was violated in the 1980s in a spate of scandals, such as toxic cooking oil in Spain, mad cow disease and, more recently, horse-meat in lasagna. These days, we’ve practically come back to that widespread apprehension that was typical of traditional societies.

Have we developed a complicated relationship with food?

There’s been a cultural breakdown. A few years ago, it would’ve been unthinkable to tell your host that you don’t eat this food or that for health reasons, because that meant you were accusing him of trying to poison you. Similarly, no one would dare refuse a meal offered to them in most traditional societies. That would be an insult. But that’s become standard for us. We identify ourselves by what we don’t eat, by whatever food – sugar, fat, meat, alcohol or gluten – we take out of our diet.

Does the current discourse about healthy eating contribute to that?

The development of public nutrition campaigns, which recommend eating five fruits and vegetables a day, cause anxiety and guilt by setting unrealistic targets. At the same time, more healthy food is now available, as large food groups realised that there was a niche that could be exploited.

“Public nutrition campaigns cause anxiety and guilt.”

Isn’t it a good thing if food giants start selling food that’s not so bad for our health??

Basically, yes. But they sometimes go too far. Some functional foods make false claims, such as probiotic yoghurt which asserts that it can strengthen immune defences or that sugar for seniors which is supposed to aid in digestion but is in fact one of the most difficult substances for our body to break down. These foods are also much more expensive than “normal” products.

What happens when the obsession with healthy eating becomes pathological?

The individual will gradually eliminate from their diet any foods perceived as unhealthy. Allergens such as gluten and lactose are often the first to go. So is meat, which is considered harmful in our society. Some start taking large doses of vitamins and supplements. I saw someone take more than 80 a day. In the most extreme cases of this disorder, called orthorexia, the person only eats two or three types of food, refuses to eat fruit picked more than 15 minutes ago or chews each bite 50 times before swallowing.

Those people must be in a lot of pain...

Orthorexia is generally a sign of psychological distress. These people don’t feel well, so they think it must come from something they’ve eaten. It’s a very old reflex, which comes from an ancient fear of being poisoned. But as the causes of the condition are psychological, excluding certain foods from their diet will not make them better. ▴



Edible larvae raised
on organic carrots by
the French company
Micronutris.

Food of the future

Insect chocolate bars, in vitro hamburgers, algae drinks... To feed our planet in the future, high-tech companies are ramping up their creativity. Although several products can only be found in labs at the moment, others are already on the market. Here's an overview.

BY JEAN-CHRISTOPHE PIOT

An exploding population, shrinking land and water resources, severe climate change and overexploited oceans – the food equation over the next thirty years will not be an easy one to solve. One thing is for sure: the expanding human population will need more food. Will we eat differently? Probably. Will insects be part of our diet? Why not?

“Cultural resistance is very strong in the West, and food habits change very slowly.”

Catherine Esnouf, Deputy Scientific Director

Although crickets and other insects are rarely found on Western dinner tables, they are regularly consumed in Africa and Asia, where their good qualities are well-known. “Insects are rich in protein and calcium and low in fat,” says Catherine Esnouf,

Deputy Scientific Director at the Institut français de la recherche agronomique (INRA) and editor of the book *Food System Sustainability*. Even better: insects take up little space and produce significantly less greenhouse gas than livestock. A possible answer to food shortages: in 2014, the “Toumou'Délice” experiment in Burkina Faso proved to be successful in addressing malnutrition. People grew accustomed to the bags of fresh, precooked caterpillars which could be kept for more than 18 months.

But there is a long way to go until we see cricket farms spread across Europe, despite the encouragements of the Food and Agriculture Organization of the United Nations (FAO) or the European Union. “Cultural resistance is very strong in the West, and food habits change very slowly,” says Esnouf. The same argument >

REUTERS / CHAWAT SUBRASON



Krill, the favourite food of whales, now subject to certification standards in Europe.

NORKRILL



Chocolates topped with insects by French chocolatier Sylvain Musquar.

AFP / J.C. VERHAEGEN



Schoolgirls pose after getting packets of «HiSo» snacks during a promotion event in central Bangkok (24 February 2015).

applies to krill, the marine equivalent of terrestrial insects: consumers don't necessarily share whales' taste for the diminutive shrimp, which have nevertheless been approved to be sold on the European market as dietary supplements since 2011.

To get past the psychological and cultural stumbling blocks, companies are developing products that are more pleasing to the eye, such as pasta and flour. The American start-up Exo is marketing energy bars made with cricket flour, an environmentally friendly flour made from powdered crickets. The two founders, Gabi Lewis and Greg Sewitz, had the idea of first targeting the members of neighbouring sports clubs, playing on the healthy aspect of their products.

On the other side of the Atlantic, the French company Micronutris, the European leader in insect-based food, markets biscuits, chocolate and mac-

aroons. The company has won over restaurant industry professionals and now believes that the market is ripe for turning towards retail distribution. In 2015, it raised a total of €500,000 with the help of 300 shareholders as well as a crowdfunding platform – a good sign of public interest.

TOWARDS "MEATLESS MEAT"

Developed over the last fifteen years, artificial meat is another major path taken by researchers and start-ups. It does have a somewhat scary aspect, as implied by its nickname "Frankenburger", which was associated with the first synthetic hamburger presented in August 2013 by Mark Post, a researcher at Maastricht University. The Dutch scientist's initiative is, however, not an isolated one – many are trying to create their own synthetic meat. Memphis Meats, a start-up based in New York, recently created a true-to-life beef meatball in its bioreactor. However, this tech-

nical challenge might be completely transformed by Modern Meadow, a Brooklyn-based company that aspires to manufacture meat through 3D bioprinting. The idea is to harvest an animal's stem cells and store them in a printer cartridge. Once generated by a 3D bioprinter, the cells come together to form "living" tissue.

Memphis Meats, a start-up created a true-to-life beef meatball in its bioreactor

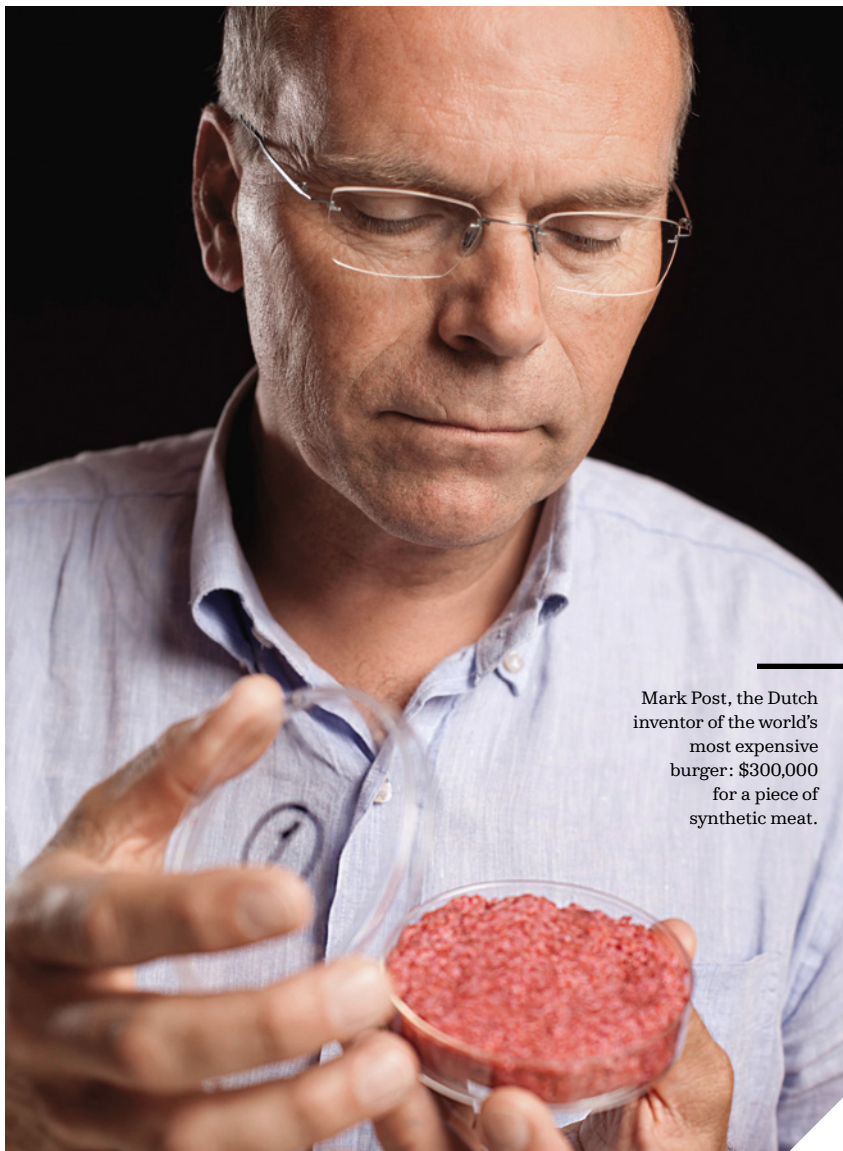
Others claim that they are reinventing the very concept of meat. Ethan Brown, CEO of the company Beyond Meat, says, "Meat is simply a combination of well-known elements: water, amino acids, fats, carbohydrates, minerals... we can take these five elements and give them the same structure as meat." In short, it's a quasi-vegetarian option

that involves producing substitute plant protein-based chicken breasts and steaks. This same principle can be found in the almond milk-based cheese made by Lyrical Foods in California, or the French company Sotexpro's pea protein-based "meat".

Whichever technology wins out, synthetic meat is being sold to the media with a hefty argument – its capacity to provide new sources of protein with no environmental impact or animal suffering. Theoretically, it's a solid one: 70% of all agricultural land is used for livestock and its feed. And meat consumption is increasing – its average has risen from 30 to 42 kilos

per person in the last 25 years. One study by the Universities of Oxford and Amsterdam, led by doctoral candidate Hanna Tuomisto, shows that in vitro meat would reduce greenhouse gases brought about by livestock farming by 96%. "The environmental impact of artificial meat could be much lower than that of meat produced in the traditional way," says Tuomisto, who believes that artificial meat could be part of the solution to feeding a growing population. This fact lends Memphis Meats a great deal of optimism with regard to its meatballs: "We hope to be able to market our products four years from now," says its CEO, Uma Valeti.

There's just one small detail to be worked out: the prohibitive production costs associated with synthetic meat. Examples include \$300,000 for the Frankenburger and \$40,000 for the next-generation meatball. Mass production of in vitro meat would lead to prohibitive costs and would require huge quantities of growth hormones and antibiotics. But this does not discourage Silicon Valley investors. Beyond Meat is supported by Obvious Corporation, the investment fund launched by Twitter co-founder Evan Williams. And Mark Post's synthetic hamburger was sponsored by Sergey Brin, the co-founder of Google. ▸



AFP / JPRESS ASSOCIATION / DAVID PARRY

Mark Post, the Dutch inventor of the world's most expensive burger: \$300,000 for a piece of synthetic meat.

2050: THE FOOD CHALLENGE IN FIGURES

10 billion

The UN estimate of the world population in 2050.

70%

The expected rise in food demand worldwide between 2000 and 2050 (for both human and animal consumption).

1.5 billion

The number of overweight people according to the WHO.

800 million

The number of people currently suffering from undernutrition.

30%

The percentage of lost or wasted food produced worldwide.

Sources: UN, WHO

AFP / CHRISTINE POUJOLAT



The spirulina grower Vincent Rioux. This microscopic algae is gaining popularity for its nutritional virtues.

GMOS: ON THE ROAD TO REDEMPTION ?

Though widely criticised, genetically modified organisms still offer some solutions to the environmental and health challenges to come.

“We have approached the issue of GMOs the wrong way,” says Catherine Esnouf, Scientific Director for Food at INRA. The agronomist feels that the general public’s current mistrust of GMOs stems in large part from the practices of multinationals like Monsanto, accused haphazardly of privatising living creatures, laying waste to biodiversity by replacing hundreds of varieties of rice, wheat and soya with just a few seed strains, and destabilising the largely rural economies of developing countries.

This is just a partial view of the situation according to Esnouf, who invites us to consider the issue in terms of costs and benefits. “Some of the first GMOs were doubtless marketed without precautions, but they are not good or bad on principle. They may allow us to reduce the use of pesticides, improve crop yields and develop hypoallergenic varieties.” And they can even address the consequences of climate change, adds Jean-Louis Rastoin of Montpellier SupAgro. “Finding varieties that are capable of withstanding water shortages and soil salinisation is essential if we are to compensate for the rise in temperatures and curb the decline in crop yields.” This is especially the case in the Middle East.

UNDERWATER CULTIVATION

The third major path that could free humanity from the use of agricultural land is the cultivation of microalgae. These simple single-celled organisms are capable of growing quickly and in large quantities not only at sea but also in polluted waters, where traditional cultivation is not possible. According to a study led by Hanna Tuomisto, “Algae and microalgae could produce 15 to 30 times more oil than corn and soya over an equivalent area.”

Spirulina, a blue-green microalgae, is one of the “stars” of this food group. Rich in vitamins, minerals and trace elements, it is unusual in that it contains the eight amino acids that are normally found only in meat

products. Algama, a new company headquartered in Paris, is developing the spirulina-based drink Spring-wave, centring its marketing on the concepts of well-being and health as well as an image of technological modernity, which breaks with the traditional image of organic products.

Key industrial players are also interested in microalgae, such as the French group Roquette, which since 2014 has produced more than 5,000 tonnes of algae a year at its historical site in the north of France. And that’s only the beginning. The company is convinced that it can run a production chain capable of providing nutritional solutions that are essential for feeding the planet. ▀

“In rich countries, the average daily intake is 4,000 calories”



The food challenge is not only macroeconomic, but sociological and cultural as well, explains Jean-Louis Rastoin, a researcher at the Institut national d'études supérieures agronomiques in Montpellier (Montpellier SupAgro) and director of its UNESCO Chair.

BY JEAN-CHRISTOPHE PIOT

The earth's population will rise to 10 billion by 2050. Will we be able to feed everyone?

On a global scale, there are enough resources available to respond to population growth. However, humanity is being confronted with the dual problem of food distribution and quality. The former is more visible: in rich countries, the average daily intake is nearly 4,000 calories, which is well beyond the amount necessary (editor's note: about 2,500 calories for an adult man). At the same time, the Food and Agriculture Organization of the United Nations (FAO) estimates that 800 million people do not have enough to eat.

“The planet will not be able to sustain itself if everyone eats like a Westerner.”

The second challenge, which has to do with the quality of nutritional intake, is even more worrying

because it broadens the issue of undernutrition to include malnutrition, which affects all continents. Too much sugar, salt, and saturated fat. If we take excesses into account as well, half of the planet is not eating properly. All of this is evident in the explosion of chronic illnesses such as obesity, diabetes and cardiovascular problems.

Faced with this dual challenge, how does the research coordinate with global food production?

Multinationals try to compensate for the defects and deficiencies of their products by fortifying them with the nutrients they lack. But the agroindustrial sector, which is centred on high productivity, is facing restraints that are becoming more and more pressing on the environmental, climatic and social fronts: quite simply, the planet will not be able to sustain itself if everyone eats like a Westerner. Hence the development of new approaches to food – like the

return to short supply chains and fewer artificial methods of production, such as organics. Thousands of start-ups are innovating by exploring the possibilities of using insects, krill and microalgae for food. But we should keep in mind that for the moment, these are just micromarkets.

Why is that?

All too often, food is still seen by the business world as a convenience good that can be industrialised easily. This is false. You can't force a certain product on people on the sole basis that its production is more environmentally friendly. Anthropologists and sociologists have shown that food does not work on the same terms as other consumer goods. Eating is a necessity, but also a social and cultural practice. Gastronomical and cultural traditions are essential: eating insects is a tradition in Asia and Africa, but in the West it is not. There is no magic solution. ▀



Peter Rosenstreich
Head of Market
Strategy

THEMES TRADING

Investing in healthy foods

Theme of the month : healthy foods

Not only are healthy foods good for you, they're also a major business opportunity for companies. Driven by strong demand, the health-food sector generates over 700 billion in annual revenue – and that's just for packaged food and beverages.

That number will likely hit 900 billion by 2020. As more seasoned food companies revamp their older product lines, new companies starting out in this market are actively taking advantage of growth opportunities. The companies mentioned in this issue were taken into account for this month's investment theme.

What is Themes Trading ?

Themes Trading is a tool developed by Swissquote that empowers less experienced investors to trade according to their interests, their knowledge and instinct, while benefitting from the expert analysis of professional market analysts. Whether you're into clean energy, robotics, coffee or video games, there's something for everyone.

How does Themes Trading work ?

1 Swissquote's experts choose a theme based on the latest trends in science, lifestyle or the global economy.

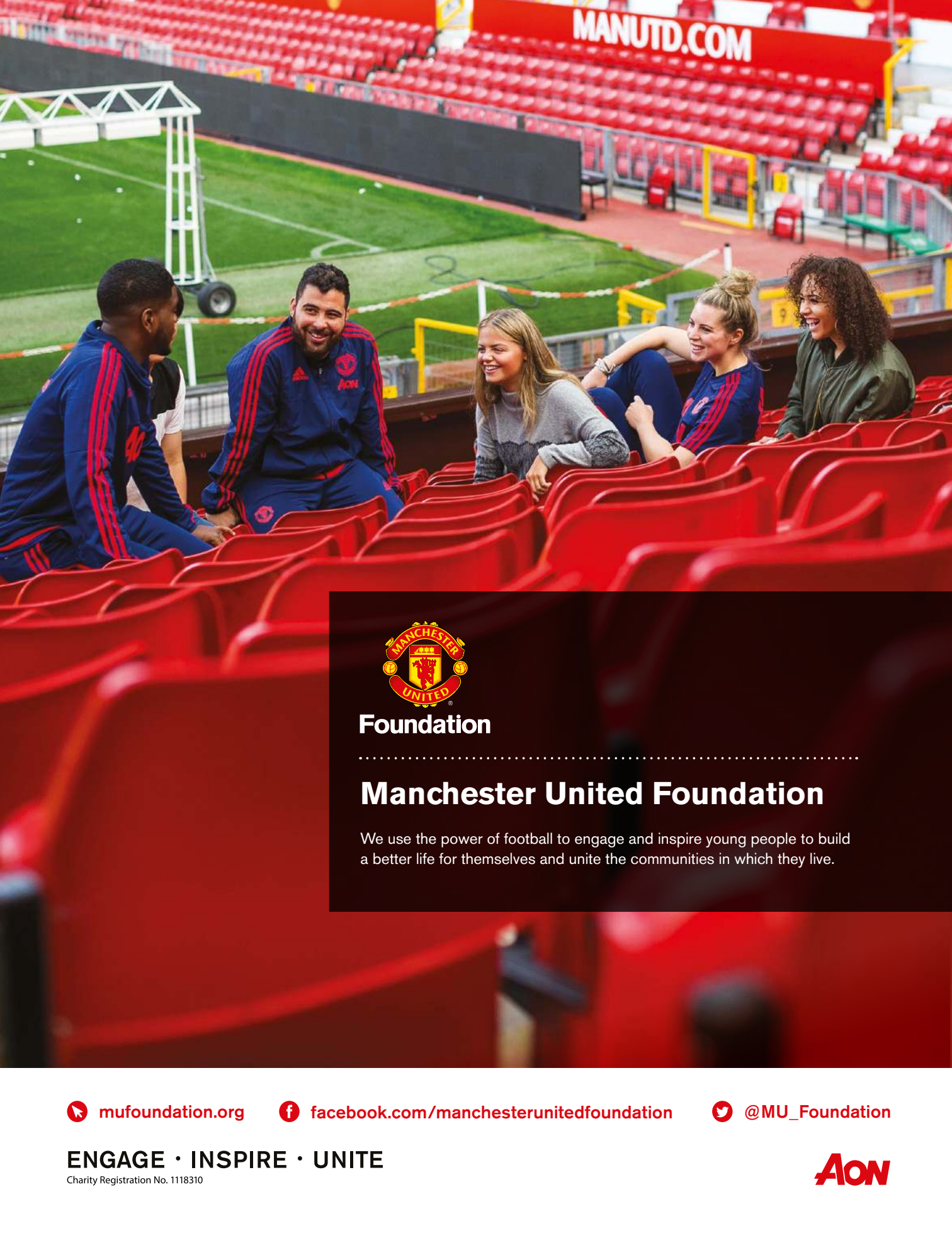
2 They draw up a list of companies that are exposed to the theme and offer attractive value and growth potential.

3 The most promising companies are weighted according to their risk value and added to a theme-based portfolio.

4 Swissquote clients can browse the themes on the Swissquote platform and easily access financial information about each theme and company.

5 Customers can then add shares in their favourite companies to their portfolio, at the click of a mouse.

For more information, go to www.swissquote.ch/themes-trading
Share your experience using the hashtag #ThemesTrading



Foundation

Manchester United Foundation

We use the power of football to engage and inspire young people to build a better life for themselves and unite the communities in which they live.

 mufoundation.org

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ENGAGE • INSPIRE • UNITE

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AON



Match Group cupid goes digital

The US firm is the industry leader
for online dating sites and
apps, a market worth
an estimated
\$2.3 billion.
Here's a
closer
look.

BY CLÉMENT BÜRGE

It wasn't until he settled in Boston, in September 2011, that James* started looking for romance online. With just a few clicks, the 28-year-old student created an account on the dating site OkCupid. The tall young man with floppy dark hair started chatting with two girls at once. One was a plump 24-year-old blond with a taste for travel and all things Latin American. The other was a 31-year-old divorcée with brown locks and tattoos. "I had something in common with both of them, despite their differences," recalls James. "I met them a couple of times and then they vanished from my life."

Since then James has become addicted to online dating. "These sites are perfect for starting a relationship that isn't too serious," he explains. "At the moment, my career comes first and I'm not interested in a long-term commitment." In addition to OkCupid, James uses the Tinder app and occasionally browses on Hinge.

What James doesn't know is that his love life is managed by a single firm: Match Group. The firm owns OkCupid and 44 other dating apps and sites, like Match.com, Meetic, HowAboutWe, Speeddate.com and even the ubiquitous Tinder. According to Bloomberg Business, Match Group owns 22% of the online romance market, which is estimated at \$2.3 billion.

The firm split with its parent company, InterActiveCorp (IAC), in November 2015 and went public. IAC still decided to retain control of the company with an 80% stake in its shares. Today, business is booming. Match Group businesses raked in \$1.02 billion in 2015, a 15% increase compared to 2014.

Match Group owns 22% of the online romance market

The firm was founded by Barry Diller, a balding businessman with chiselled features whose personal fortune is estimated at \$2.3 billion according to Forbes. His wife is the fashion designer Diane von Fürstenberg. Barry Diller is behind all of IAC's biggest deals and is at the heart of the New York firm's online romance strategy. CEO of IAC from 1995 to 2010, he now chairs the board of directors. "He's an outstanding manager, who has successfully invested in many different online businesses," says Daniel Kurnos,

analyst for Benchmark Company. The businessman entrusted his latest online treasure to Greg Blatt, who has managed IAC's online dating businesses since 2013.

LOVE IS AN ALGORITHM

A few years later, we find James in New York. One evening, on one of his dates, he meets Sophie. The charming brunette fascinates James. For their first date they spend the evening wandering the streets of Manhattan. It's love at first sight. They continue dating, more frequently. James falls in love with Sophie's books, her apartment, her scent, her cat. "I swore I would never commit to someone," he recalls. "But this time was different."

Like most online dating sites, OkCupid uses algorithms to analyse user compatibility. They do this by asking questions such as "Do you like horror films? The smell of cigarettes? Do you want to have children with your new partner?" The website creates an ideal compatibility profile for each user and indicates which ones he or she should never meet. James and Sophie were 98% compatible. ▶

THE MAJOR BRANDS OF MATCH GROUP

BlackPeopleMeet
Chemistry
Delightful
FriendScout24

HowAboutWe
Match (Meetic)
OKCupid
OurTime

People Media
PlentyOfFish
Tinder
Twoo

*Name changed by the editor

OkCupid algorithms are based on a programme invented by three Harvard undergraduates in 1965. They created a system to enter data about friends in a computer that weighed five tonnes and find out who would get along best together. The concept operates on the principle that an algorithm will be more effective in determining whether two people are made for each other than chance encounters.

The first real dating sites were created in the 1990s with Kiss.com, Classmates.com and Match.com, along with the emergence of the web and digital photography. But the number of users really exploded in the 2000s when Internet use became more widespread.

Aware of the industry's potential, IAC started investing and acquiring start-ups as fast as it could. In 1998, the firm bought out Match.com for \$50 million, followed by Chemistry.com, Meetic and HowAboutWe. In July 2015, the firm also took over PlentyOfFish, its main online competitor, for \$575 million. The firm also acquired several sites active on niche markets like OurTime, for people over 50, and BlackPeopleMeet, for African Americans. "It's among minorities that we find the most active users, who are ready to pay for these services,"

says Paul Oyer, Stanford economist and specialist in online dating sites. Barry Diller's goal was clear: dominate the online romance market and eventually create a single firm that could ride this wave, which he has done by floating Match on the stock market.

A PROFITABLE ECOSYSTEM

These acquisitions have allowed IAC to rule the online romance industry: "The group has created an online dating ecosystem," says Mark Brooks, an independent analyst. Network users rarely stick with a single site or app. They switch from one platform to another, sometimes within minutes, a bit like someone going from bar to bar in order to increase their chances of meeting a partner." And each visit is an opportunity for IAC to make money.

"There are two ways of making money on these platforms," says the expert. "First, a dating site can bill visitors for monthly subscriptions, which is the case for eHarmony and Match.com (editor's note: from \$10 to \$60 per month). That's the best way to make money because earnings are higher and steadier."

The second way is inspired by the freemium model in the world of gaming. Downloading the app and

using basic functions is free, but additional functions come at a price. This is the model that French app Happn has chosen. "Only men pay to contact women or say they're available," explains Didier Rappaport, CEO of Happn. The freemium model leaves some analysts sceptical. "It can attract more users, but doesn't necessarily generate more earnings," says Mark Brooks. "It's like video games. The app depends exclusively on a small number of users who are big consumers."

The OkCupid site creates an ideal compatibility profile for each user and indicates which ones he or she should never meet

Six months after meeting Sophie, James can't stand their relationship. He feels like he has become his girlfriend's plaything. One evening he decides to tell her how he feels. Three days later she sends him an email: she doesn't want to see him again. "I was sad, but it didn't affect me that much," he says. "When I meet someone on the web, I expect the relationship to be less serious and eventually fall apart."

ANALYST OPINION

"MATCH GROUP CAN GENERATE ECONOMIES OF SCALE"

Match Group's decision to part ways with its parent company, InterActiveCorp (IAC), was a wise one according to Benchmark Company analyst Daniel Kurnos: "Match Group was always the most interesting division of IAC. More value is created for investors." The analyst believes the firm's greatest advantage is the possibility of creating synergies between its different brands. "They can generate econo-

mies of scale and use all their knowledge to make the most of each platform."

Another interesting aspect of the firm is that "it includes a certain number of sites that have nothing to do with dating like Princeton Review, a college admissions test system," says Daniel Kurnos. "And if business is bad in the sector, that could help them offset their losses."

In keeping with this reality, which is the norm for most users, Match Group unveiled a revolutionary app in 2012 that would turn online dating into a real life role-play game: Tinder. The geolocalised dating platform, available as a mobile app, allows users to scroll through photos of singles available in a given perimeter and to 'like' or 'reject' them with a swipe of the thumb. "This app has won over millennials who felt that dating sites were for old folks," says Mark Brooks. "And it allowed Match Group to conquer the dating apps market." >



THE TOP 5 DATING SITES

MATCH.COM THE GIANT

The jewel in IAC's crown, Match.com, is one of the oldest online dating systems. It's also the one that earns the most from its services, with customers spending an average of \$240 per year. The leader on the American market is mostly used by people in their 30s.

Number of users: 59 million active users per month, including 4.7 million paying users
Price: \$30 per month

MEETIC THE EUROPEAN DATING MACHINE

The most popular platform in Europe was acquired by IAC in 2013. It is the European equivalent of Match.com. The site has different names in different countries. It is called Neu in Germany and Lexa in the Netherlands.

Number of users: 42 million
Price: from €15 per month

EHARMONY LOVE IS AN ALGORITHM

eHarmony is IAC's main competitor, with 13.8% market share. The website boasts that it has the best algorithms for finding the right partner for each profile. eHarmony focuses on long-term relationships.

Number of users: 66 million users since its creation, with 780,000 paying members
Price: from \$20 to \$60 per month, and a personal coach (matchmaker) starting at \$5,000 per year

PLENTYOFFISH THE FREE OPTION

PlentyOfFish (POF) is the perfect dating site for newcomers to online romance. POF is free and only asks users a few questions about whether they are interested in starting a family.

Number of users: 100 million since its creation, 3 million active users per day
Price: free, with premium functions from \$7 to \$13 per month

OKCUPID FOR THE YOUNG AND 'IN' CROWD

OkCupid is very popular and asks users over 100 questions in order to suggest potential partners that would be a good fit. Very trendy and accessible.

Number of users: 10 million since its creation, 1 million active users
Price: free, with premium functions from \$10 to \$20 per month

THE TOP 5 DATING APPS

TINDER THE KING OF APPS

Since its launch in 2012, Tinder has dominated the world of dating apps for millennials seeking romance online. Users can scroll through profiles of people located nearby. If two people are mutually interested, they can contact each other.

Number of users: 50 million (estimate), 26 million "matches" per day in 140 countries
Price: free, with premium functions starting at \$10

COFFEE MEETS BAGEL DATING A FRIEND OF A FRIEND

The app uses Facebook accounts to put users in touch with their contacts' friends. "We analyse profiles and only suggest one potential partner a day," says Arun Kang, CEO of Coffee Meets Bagel. "We favour quality over quantity."

Number of users: 21 million
Price: free, with premium functions starting at \$2

HAPPN GEOLOCALISED ROMANCE

Happn detects other Happn users one may have walked by during the course of a day. It indicates a user's interest for a person he/she has crossed paths with. "We try to make the online encounter as realistic as possible," says Didier Rappaport, CEO of Happn.

Number of users: 10 million
Price: free, with premium functions starting at €2

HOWABOUTWE LET'S GO FLY A KITE!

HowAboutWe was acquired by IAC in 2014 and stands out in the world of dating apps. It allows you to organise a date from A to Z and offers activities ranging from sailing or kayaking to visiting an animal shelter to taking a cooking class.

Number of users: 2.3 million (estimate)
Price: free download, then starting at \$8 per month

GRINDR THE FIRST GAY APP OF ITS KIND

A pioneer in dating apps, Grindr has become a cult platform among gay men. Dattch is its lesbian equivalent.

Number of users: 2 million active users per day
Price: free, with premium functions starting at €2.39 per month

Thanks to this aggressive strategy (developing new apps and buying up successful sites), Match Group has crushed the competition. In Europe alone, there are more than 5,000 such services. But very few are as profitable as those run by IAC, or profitable at all.

KEEP THEM COMING BACK FOR MORE

Since he broke up with Sophie, James has gone back online looking for thrills. He appreciates the variety of profiles. "I meet girls that I would never have known because we come from such different worlds," he says. "It's very exciting." But sometimes having so many choices makes his head spin. Recently James met a lovely mixed-race girl for a date "that lasted 24 hours," he says with a goofy grin on his face. A few days later, he went out with a researcher in neuroscience. "Sometimes I feel a little lost and wonder if I shouldn't

be spending more time with just one person," he asks, feeling a bit confused.

"Sometimes I feel a little lost and wonder if I shouldn't be spending more time with just one person."

This paradox is a great advantage for the dating app and website industry. These companies must prevent their customers from finding true love at all costs...because a user who settles down is a customer that's lost forever. Justin Parfitt, a British entrepreneur, explains this logic in

Dan Slater's 2013 book *Love in the Time of Algorithms*: "The industry is thinking 'Let's keep this f-cker coming back to the site as often as we can, and let's not worry about whether he's successful'. There's this massive tension between what would actually work for you, the user, and what works for us the shareholders. It's amazing, when you think about it. In what other industry is a happy customer bad for business?"

But firms can use this for marketing purposes. "Each user who finds true love on our platform becomes an ambassador for our app among his friends and contacts," asserts Arum Kang, CEO of Coffee Meets Bagel, another dating app.

James is very excited. The weekend after our interview he went on his first date with a girl from Argentina after chatting with her online for several weeks. He really is the ideal customer for dating sites. ▲ ▽ MTCB

"Focus on your objectives and you will succeed."

Anthony Martial,
Striker



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In each issue, Swissquote Magazine looks at the image of a listed company through an aspect of its communication or identity. After examining the logo of LafargeHolcim, we now turn to the future headquarters of Swatch and Omega in Biel/Bienne – a tower designed by Japanese architect Shigeru Ban.

Swatch Group at the cutting edge of architecture

BY SYLVAIN MENÉTREY

In just a few weeks, the new production centre for Swiss watchmaker Omega will open in Biel / Bienne. Two other buildings will open at the same site in 2017 and 2018. The first one, built on stilts, will be used as museum space for Swatch, Omega and Swatchmobile. The second – Swatch's headquarters – has a dramatic design and will resemble a reptile biting into the roof of the neighbouring building.

It's a big project that will completely remodel the site where Omega's austere-looking factory has stood for years. The architect behind the project is Shigeru Ban, winner of the 2014 Pritzker Architecture Prize. He rose to fame in the 1990s building houses made of cardboard and reinforced paper for war refugees and natural-disaster victims. His philanthropic endeavours gave him 'starchitect' status, and he now designs museums and other prestigious buildings all over the world. In 2013 he realised the Zurich offices of Swiss publisher Tamedia. The seven-storey is unique in that it is entirely made of wood – an engineering feat for a building of its size. Ban continues to experiment



The future headquarters of Swatch in Biel/Bienne will be complete in 2018.

SWATCH

using renewable materials in big buildings, just as he did when he started out designing emergency housing.

The first two buildings he will deliver to Swatch Group will likewise boast wooden constructions. The Swatch headquarters will be a long, arched serpentine structure with intertwined wood motifs and will be the symbol of the new complex. Its design is a testament to recent changes in the watch industry, where production sites are playing a greater role in brand communication. "Brands are inviting more and more customers to visit their production sites," says Geneva architect Eric Maria, who worked with Jean Nouvel

at Richemont Group. "They need an attractive, cutting-edge building to showcase their luxury products."

Other companies in the industry have also sought to promote themselves as stylish, modern and powerful by way of architectural forays. Just look at the wave of innovative, new buildings designed for watch companies by big-name master builders, including Cartier's new factory in St-Imier (JU) designed by Jean Nouvel, and Vacheron Constantin's new headquarters designed by Bernard Tschumi in Plan-les-Ouates (GE). Ban's wooden serpent is in some way, a significantly more substantial version of

his signature arched light paper structures, and it will surely stand as an impressive urban object. "The goal here is not to blend in with Biel/Bienne's urban history," says Eric Maria. "The building would also fit in New York, London and Tokyo." By choosing to work with Shigeru Ban, Swatch Group has also shown that it cares about the ethical values associated with minimalist construction, which may not have been part of its original corporate message. Eric Maria links this change in direction to the passing of Nicolas Hayek, the former CEO of Swatch. "The new building will certainly be used a lot in images to show that the company is committed to renewing itself." ▲

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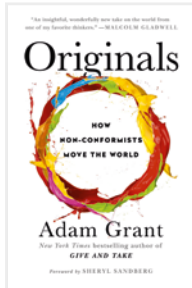
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SWISSQUOTE

TO READ

ORIGINALS: HOW NON-CONFORMISTS MOVE THE WORLD

By Adam Grant (Viking)



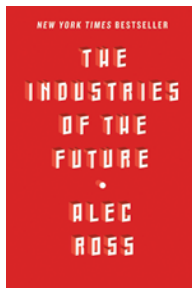
Dean Kamen was a successful entrepreneur in the medical instruments industry who went on to fail with the Segway. Adam Grant uses Kamen's story

to show that just because you're successful in one field doesn't mean you'll be successful in another. Citing a number of other examples, he also suggests that exceptional talent hinders creativity and that the youngest siblings are often the most inventive.

From €14.-

THE INDUSTRIES OF THE FUTURE

By Alec Ross (Simon & Schuster)



Alec Ross was Hillary Clinton's advisor for innovation from 2009 to 2013. He has visited over 40 countries to observe technological progress. In this book, he

looks at robotics and genomics to assess how they will impact the future. He also examines the data sector and its susceptibility to cyber attacks, which have helped create the fast-growing cybersecurity industry.

From €7.-

TO DOWNLOAD

Arte360 IMMERSE YOURSELF IN 360° VIDEO



If you like virtual reality and the European cultural network Arte, you'll love this app. Watching 360° videos is a fully immersed experience – it's like stepping inside the movie. You can virtually climb Mont Blanc, explore space or visit the Château de Fontainebleau.

Free

Apple Store, Google Play

CamScanner PORTABLE SCANNER



This powerful tool turns your mobile phone into a portable scanner that can digitise any type of paper document, big or small (invoices, business cards, receipts). All you have to do is take a picture of the document using your phone. A PDF file is then generated that you can save to your phone or export to an online storage space. You can access the digitised files anytime.

Free

Apple Store, Google Play

Visual Budget BUDGETING MADE EASY



What sets this budgeting app apart from the rest is its clever use of colour. Each category (income, subscriptions, culture, savings, etc.) is assigned a different hue. Analysing your accounts and tracking your expenses has never been easier! You can also manage several accounts at once.

Free

Apple Store, Google Play

Yooture TINDER FOR JOBS



Launched by three former UBS employees, Yooture is Switzerland's latest job-search app. Like the dating app Tinder, Yooture uses clever algorithms to "match" employers with job-seekers according to what both sides are looking for. In February 2016, over 100,000 job offers were featured on the app.

Free

Apple Store, Google Play



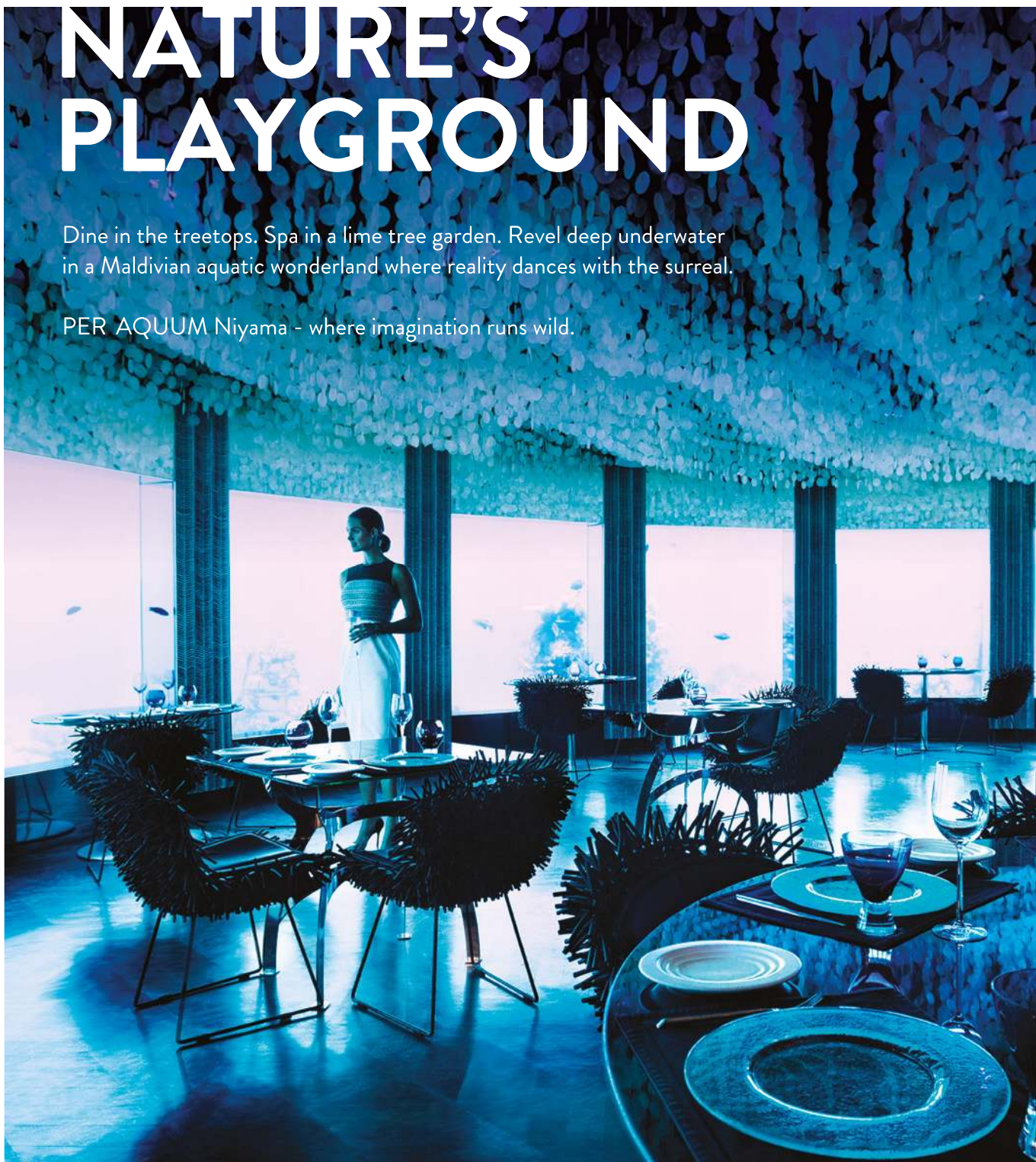
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MALDIVES

NATURE'S PLAYGROUND

Dine in the treetops. Spa in a lime tree garden. Revel deep underwater in a Maldivian aquatic wonderland where reality dances with the surreal.

PER AQUUM Niyama - where imagination runs wild.



TWO WHEELS

THE MOTORCYCLE MADE EASY

Traction control, ABS, LED lights and active suspension are making motorcycles safer. Here we present an overview of the latest driver-assist features.

BY PHILIPP MÜLLER

Power is nothing without control. This was the slogan of the tyre maker Pirelli from the early 2000s and it is still relevant. Perhaps more than ever for motorcycles. These days, a number of production motorcycles pack in excess of 200 horsepower. As engine performance continues to develop, the contact surface of tyres on the road – about the size of a credit card – almost never changes. However, for riders to be able to maintain control of their bikes, motorcycle builders are forced to develop more efficient driver-assist technology. Grégory Junod, a motorcycle racer in the Endurance World Championship and instructor at the Touring Club Suisse, analyses the benefits of these new systems.

Not only can riders now adjust their suspension settings manually, a number of manufacturers offer damping systems that adapt immediately as soon as the throttle is opened based on the motorcycle's braking force or load. "Active suspension is a real advantage because it always guarantees the best balance for the motorcycle," Grégory Junod says. These systems are primarily available on big trail bikes – both powerful and by definition dual-sport – and feature mostly on European models, such as the **BMW 1200 R GS**, Ducati Multistrada 1200, KTM 1190 Adventure and Aprilia Caponord 1200. The Japanese manufacturer Yamaha has also added active suspension to its sport touring model, the FJR1300.

ABS, another feature useful for the safety of the average biker, is nothing new. It first appeared on the BMW K1 in 1988. Nearly thirty years later, the system continues to be developed and enhanced for an ever better response time. In a partnership with Bosch, the Austrian manufacturer, KTM, has recently integrated a stability control system on its 1190 Adventure, which includes the ABS function in curve braking. "When racing, we're used to pushing the limits and are even more effective without ABS. But only in dry conditions," Junod says. On roads, it has proven effective. "As long as you know how to use it," the instructor points out. "You have to learn how to pull hard on the brake lever!"



BMW 1200 R GS From CHF 15,900.-

Other technological innovations bring more subtle advantages. For example LED (on the BMW K 1600 GTL) or Xenon lights to improve night vision, or the automatic dual clutch transmission prominent at Honda (Honda CRF1000L Africa Twin). "The automatic transmission mainly offers comfort but also simplifies things for riders when it comes to emergency braking, as they don't have to downshift," the expert says.

In direct correlation with the increase in power, multi-map technology (Aprilia RSV4 RF) changes engine behaviour. But, as with the anti-lock traction control system (Kawasaki Ninja H2), Junod is not overly enthusiastic about this technology. "These systems are useful in racing, but for your average rider who can control his bike, they're not really useful, except maybe when it's raining." Our trusted instructor also points out that the increase in driver-assisted functions and options could



Honda CRF 1000L Africa Twin From CHF 15,570.-

also be overwhelming or even lead to over confidence.

Some new functions efficient in racing may seem almost superfluous on roads, such as the Quick Shifter

on the Yamaha R1, used to change gears without using the clutch, or, among the various gadgets available, the Data Analyser on the Ducati 1299 Panigale, which recovers data to gauge your performance. ▴



Kawasaki Ninja H2 From CHF 26,500.-

TRAVEL

The unspoilt heart of the Canaries

The Spanish archipelago is mainly known for its beaches. But the greenest of its islands boasts unspoilt nature and contrasting landscapes that can be explored from its amazing walking trails. Discover La Palma and taste its Malvasia.

BY GAËTAN VANNAY

Caldera de
Taburiente
National Park

Rows of vines, blown over by the ocean winds, creep along the black earth. Each vine shoot is protected by a low, curved wall of volcanic stones, hand-built by the winemakers of Fuencaliente. Their painstaking work pays off when, come evening after a long trek, you can relax on a terrace in Santa Cruz, La Palma's capital, sipping one of their delicious Malvasia wines.

To reach these vineyards, visitors can work their way up a winding trail along the arid slope from the now defunct El Puertito, or "little port", exposing themselves to the same bright sun that so generously sweetens Malvasia grapes. As you climb higher towards the Teneguia and San Antonio volcanoes, your feet sink more deeply into fragments of lava. Teneguia last

erupted in October 1971, stretching the land by several hectares which were rapidly covered with more vines.

Starting from the southernmost tip of the island and its vines, you can venture into the heart of La Palma. Perfectly marked out footpaths running alongside the chain of volcanoes lead up to the crest of Caldera de Taburiente. This crater is one of the oldest and largest volcanoes in Europe, overlooking the island from its highest point, Roque de los Muchachos, at an elevation of 2,426 metres. You can wander off the path into one of the many villages along the coast or perched on the mountainside. This topology was formed long ago. When tourism began to develop, the government mapped out hiking trails over the old footpaths carved long ago by the island's ancient >



populations. That's why they tend to be in a line rather than form a loop that takes explorers back to their starting point.

FIVE BIOCLIMATIC ZONES

La Palma is divided into five bioclimatic zones that can almost be covered in a day of hiking. The scenery is so unusually diverse that wanderers feel as though they have made several journeys in one. The dry, coastal zone features scant greenery, while the humid zones are abundant with lush, variegated vegetation. Forests and pine trees can then be found before reaching the arid summit zone. Hikers are advised to dress appropriately

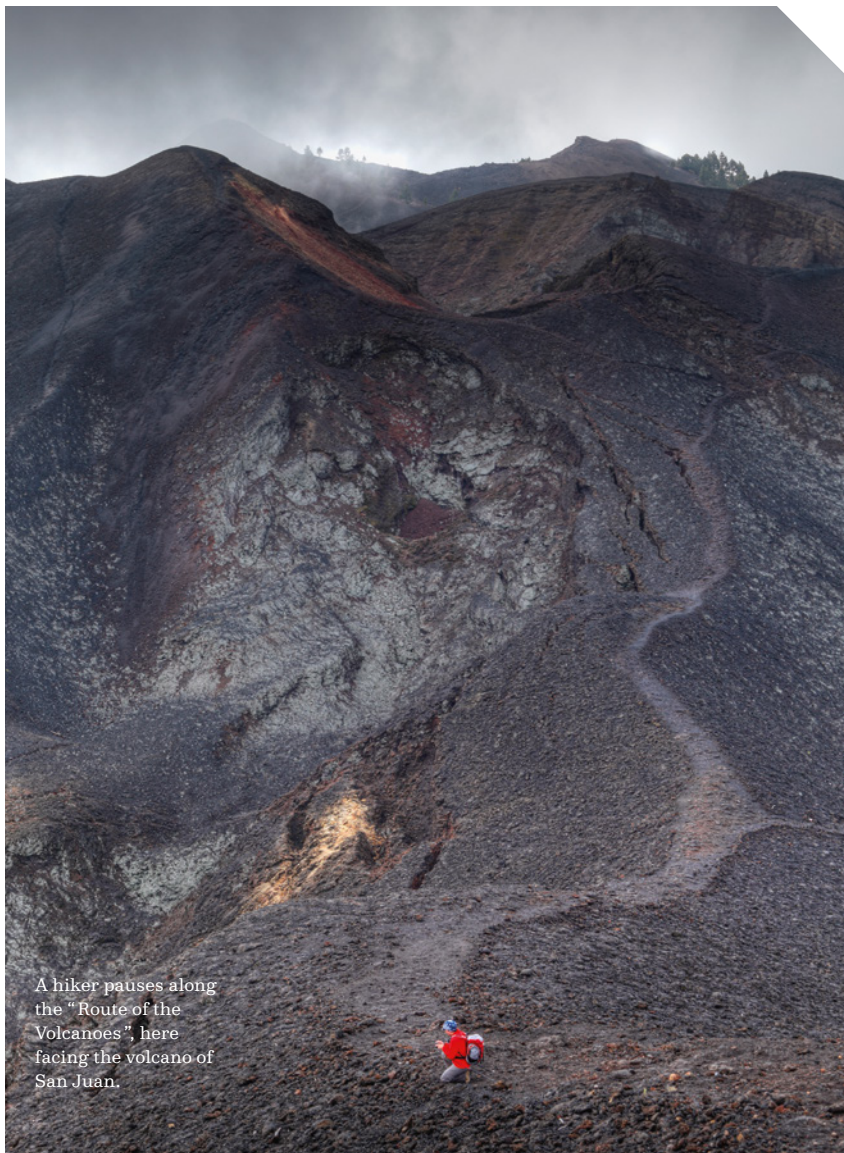
depending on their precise location on the island – ranging from coast to summit – and should expect to constantly be adding and peeling off layers of clothing.

Many of the trails lead from the coast to the mountain tops virtually in a straight line, often along a crest. These are the paths that the island's villagers used to take to reach their crops growing at higher elevations. Today, they give hikers a choice between taking the paths that criss-cross the island horizontally, winding through altitudes of between 1,000 and 1,300 metres and continuing to climb upwards to reach summit on the Route

TAPAS AND AREPAS



On La Palma, you can of course enjoy succulent tapas, but you'll also have the opportunity of discovering arepas. The island's large population of Venezuelans explains this culinary classic brought from their home country, a maize patty split in two like a sandwich and filled with cheese or chicken. Arepas are to be savoured as you sit on a wobbly wrought iron chair on the cobblestones of La Alameda square in Santa Cruz. It's the ideal way to recover from a long day's hike.



A hiker pauses along the "Route of the Volcanoes", here facing the volcano of San Juan.

of the Volcanoes. Long ago, the villagers would take the mountaintop routes to travel between villages, preferring these steep paths through lands tortured by old volcanic eruptions so to avoid detours of several extra kilometres at lower elevations. Today, all these trails have been recycled for tourists and are very well maintained. The degree of technical difficulty is never excessively high, but the walks can be long in some stretches – and steep.

Santa Cruz, the island's historical capital, is still the gem of La Palma

Trails leave from any one of a number of towns located all along the perimeter of the island. Accommodation in private homes (Airbnb) may be small but is widely available and can serve



A colorful stone lane in Santa Cruz de La Palma

GETTING TO LA PALMA

La Palma, the most westerly island of the Canary Islands, can be reached by plane or ferry. Anyone susceptible to seasickness should opt for the plane. The airport is located seven kilometres from the island's capital, Santa Cruz, which offers extensive public transport. Car hire services are also available. La Palma Airport was recently expanded, with several flights a day linking La Palma with Tenerife and Gran Canaria.

For those with stronger stomachs, two shipping companies offer a ferry service from Tenerife, leaving late in the evening, via La Gomera to Santa Cruz, with the return early in the morning.

To get around the island, the best option is a car to reach the departure points for hikes more easily and avoid long walks through partially or completely developed areas to get there. An efficient bus service is available for travel between towns.

The carnival of "Los Indianos", Santa Cruz de La Palma (8 February 2016).

as a starting point for tackling a long hike.

Santa Cruz, still the gem of La Palma and its historical and administrative capital, is also worth a visit. The city's pace has slowed since its former glory days, when any Spanish ship trading with the Americas was required to stop at its port. A few remnants of its past subsist in its many palaces, colonial style architecture and old town full of homes typical of the Canary Islands. Well-weathered staircases lead to small apartments hidden from the sun but with rooftop terraces offering splendid views with the ocean on one side and green hillsides and volcanic slopes on the other. ▲



AFP / DESIRÉE MARTIN

BOUTIQUE

CYCLE ECOLOGY

The bicycles produced by Bamboo Bikes Barcelona, Spain, are handmade in bamboo wood, and every component – including the fork, wheels, saddle and gears – can be fully customised. Sturdy and manoeuvrable, a bamboo bike uses only 10 percent of the natural resources needed to make its conventional counterpart.

www.bamboobikesbarcelona.com

From \$1,370.-

SNIFTER STYLE

Puiforcat commissioned Léo Dubreil, a talented young graduate from the Paris-based arts-and-crafts school Ecole Boule, to redesign one of its iconic creations: the cognac snifter. Shaped like a spinning top, the ultra-modern snifter comes with a lid which, once removed, can be used as a base to stabilise the rounded bottom. The snifter's golden red-finished interior echoes the colour of the cognac.

www.puiforcat.com

About \$2,150.-

DIGITAL DOODLE

The Slate is a smart drawing pad that allows users to directly digitise notes, sketches or drawings done on real paper. Developed by researchers from Iskn, a startup based in Grenoble, France, the pad is equipped with 32 sensors that track the exact position of any pen or pencil equipped with Slate's special magnetic ring. The sensors track the ring and infer the position of the writing instrument.

www.iskn.co

About \$180.-



SCREEN ART

Samsung has joined forces with French designers Ronan & Erwan Bouroullec to create Serif, a TV that could double as a work of art! The set has a single monochrome wooden frame whose profile is designed to look like a capital "I". The ports and connectors are concealed behind a fabric panel and the screen sits on a moveable stand that resembles an easel. The Serif collection is available in ivory white, dark blue or red.

www.samsung.com

From \$790.-

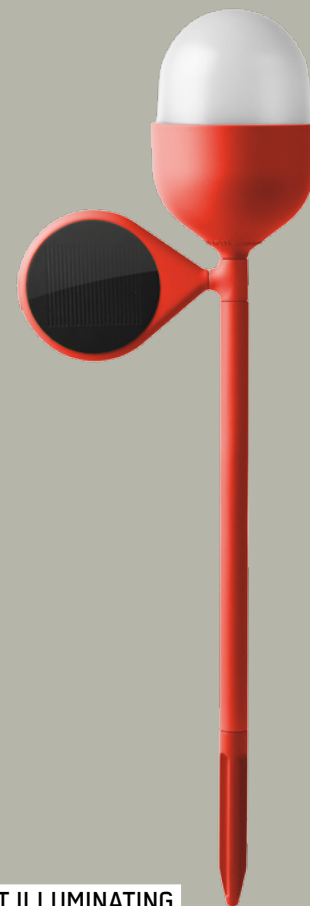


GO DEEP

To delight extreme aquatic sports enthusiasts, Removu has launched R1+, a waterproof and wearable version of its wildly popular live-viewer that can be used to display underwater action filmed with a GoPro camera. Usable to a depth of one metre, the R1+ comes with a screen for adjusting and focusing the GoPro remotely.

www.removu.com

About \$100.-



MOST ILLUMINATING

Working with Ilonna Vautrin, a creative designer from Brittany, the French design brand Lexon has created Clover Garden, an LED light that brings vibrant colour to terraces and outdoor spaces. Weather-proof and rechargeable via a solar cell, Clover Garden is a stylish and eco-friendly way to light up the spring evenings that are just round the corner.

www.lexon-design.com

About \$44.-

ROBO VAC

Neato Robotics is a California-based company that designs autonomous vacuums. The vacuums navigate using a laser and can go deep into corners thanks to their D-shaped design. You can control them via Wi-Fi, and the latest model can clean up to 450 m².

www.neatorobotics.com

About \$850.-



BOUTIQUE

WATCHLIST

FLIGHT TIME

The Breitling Exospace B55 is a connected chronograph with a suite of functions designed especially for pilots. Features include a flight timer, an electronic tachymeter, a chronograph that can record up to 50 split time events, a digital perpetual calendar and a countdown / countup clock.

www.breitling.com

About \$8,830.-



A KEEPER

Six months after launching the Carrera Heuer-01, the backbone of a new collection of chronographs, TAG Heuer has unveiled the automatic COSC-certified Carrera Heuer-02T, with a carbon and titanium flying tourbillon and a power reserve of more than 65 hours. The new model costs less than 15,000 Swiss francs, making it a price leader in the Swiss watchmaking industry for its level of finish.

www.tagheuer.com

About \$15,500.-



WORLD VIEW

Patek Philippe's 5930 brings together two of the features the watchmaker is most famous for: world time and the chronograph. The new model is graced with a blue and silver dial and round case in 18-carat grey gold. The 5930 combines the minimalist design of the Bauhaus-inspired Calatrava 96 introduced in 1932 and "winglet" strap lugs typical of the world time watches of the 1940s and 1950s.

www.patek.com

About \$67,620.-

AS YOU LIKE IT

Zurich-based Brügger is offering clients the opportunity to create their own personalised Swiss-made chronograph online. A web-based Watch Creator tool is used to customise every detail of the timepiece – including the dial, bezel, second and minute hands, strap and case – from among one billion possible configurations. Once the design is complete, a cost estimate is sent to the client and the watch can be delivered to the door within six weeks.

www.bruggler.com

From \$4,470.-



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LORENZO STOLL

HEAD OF WESTERN SWITZERLAND AT
SWISS INTERNATIONAL AIR LINES
BORN ON 2 OCTOBER 1971 IN ZÜRICH

CHURCHILL, MONTE CRISTO AND PADDINGTON



DR

When Lorenzo Stoll was appointed SWISS's Head of Western Switzerland in 2013 he had no professional experience in civil aviation. This graduate of the Lausanne Hotel School began his career at Montreux-Vevay Tourisme before moving on to spend nearly 12 years at Nestlé. It is in fact his background and expertise in customer relations and service that are warmly welcomed at Cointrin Airport, where competition between low-cost airlines is high.

By pampering its customers both on the ground and in the air, SWISS hopes to stand out from its discount competitors, which put sole focus on getting passengers from point A to point B.

A KEY EVENT FROM YOUR CHILDHOOD ?

When we moved from Winterthur to La-Tour-de-Peilz. I was 10 years old and it felt as though we were going to the other side of the world.

THE PROFESSION YOU WOULD HAVE LIKED TO DO ?

Lawyer. But I was put off by the studies which seemed, at the time, too theoretical. So I went to the Lausanne Hotel School, where I discovered the enjoyment and satisfaction of serving guests.

YOUR SECRET HOBBY ?

I collect comic books.

SOMETHING THAT INSPIRED YOU RECENTLY ?

The American astronaut Buzz Aldrin, the lunar module pilot from Apollo 11, shaking hands with the Russian cosmonaut Alexei Leonov, the first man to walk in space, at a conference in Lausanne. Two men who made history.

A SONG THAT SUMS YOU UP ?

Shine on you crazy diamond by Pink Floyd.

A PLACE THAT MADE AN IMPACT ON YOU – AND WHY ?

Cimalmotto, a small village nestled deep in a Ticino valley. Growing up, we would spend our summer holidays there. It was total freedom. We'd come up with new adventures every day.

SOMETHING CRAZY YOU DID RECENTLY ?

I treated myself to five photographs from the *Paper Planes* series by Sjoerd Knibbeler (www.sjoerdknibbeler.com).

THE FILM THAT YOU WOULD'VE LIKED TO EXPERIENCE ?

The Good, the Bad and the Ugly (Sergio Leone, 1966).

THE IDEAL WOMAN ?

My wife.

THE IDEAL MAN ?

Winston Churchill. He's determined, engaged, eloquent and mischievous.

THE IDEAL ANIMAL ?

Bears, for all the imagery they bring to mind, from the wild grizzly bear to the teddy bear Paddington Bear.

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