CLAIRFIELD INTERNATIONAL

INNOVATIVE BUSINESSES: DRIVING THE FUTURE

CLAIRFIELD OUTLOOK 2022

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Innovation: a focus at Clairfield

For our 2022 edition of the *Clairfield Annual Outlook*, we turn our lens to innovative businesses. This focus connects to both our thriving technology client advisory practice and our observation that all sectors are looking to innovate and acquire new technologies.

Innovative businesses are a core client group of Clairfield. We define innovative businesses as those that use new technologies to address problems as well as companies that have adopted new business models and distribution channels. Traditional companies are incorporating innovative processes including automation technology and artificial intelligence into their everyday business. As M&A practitioners, we see that smaller innovative and technology-driven targets are in focus for larger strategic buyers and financial buyers. Innovation implies growth, critical for value creation.

This publication looks at themes in innovation. What environments are conducive to innovation? What are the main drivers? We tackle these questions from an M&A perspective and then ask experts in their fields. We look at new techniques applied to traditional businesses such as railways and retail in interviews with business leaders and innovators. We devote an entire section to the topic of feeding the future using innovative practices in agriculture, with interviews with a country leader and with entrepreneurs.

Innovation in business offers growth and value creation opportunities. At Clairfield we embrace clients' activities in technology, supporting them in tech-enabled business services, software, digital health, and fintech, areas in which Clairfield has developed recognized expertise. In healthcare we focus on subsectors to bring outstanding specialist know-how in service to our clients, be it in healthcare services, medtech, or e-health. With family-led businesses, we work with innovative, hidden champions in global niches just as much as with deep-value industrials or venture-backed consumer internet, e-payment, or cybersecurity businesses.

At Clairfield we are also taking steps to incorporate innovative practices in our own business, with a digitalization process, increased use of data analytics, and an intensified focus on ESG. We look to combine innovative techniques with our brainpower and sector expertise in service to our clients benefiting from sound, entrepreneurial, and expert advice in M&A and financing in what we see as a very active year ahead.

We thank all our contributors for their valuable insights and hope that you enjoy reading this publication as much as we have enjoyed preparing it.

Alexander Klemm, executive chairman
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Innovation themes today

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Technological innovation has become a global race, with global government spending at record highs.

Innovation: the new focus of global competition

In the face of risk, innovate. That seems to be the philosophy adopted by nations confronting a jittery economy and shifting roles on the global stage.

Increasingly protectionist policies, in addition to political, climate, and health cataclysms, are impacting international markets. In order to maintain their own advantages under the clouds of economic downturn and position themselves for the new green economy that will underpin our world in the future, many countries have increased their national efforts to promote scientific and technological innovation.

Global government spending on research & development reached a record high of about USD 2.2 trillion in 2019, the latest year for which figures are available (Global Research and Development Expenditures: CRS). Preliminary data indicates that government investment increased during the pandemic. And the main players may not be who you think they are. The US, which accounted for 69% of all global R&D spending in 1960, accounted for only 30% in 2019. This decrease is not representative of a reduction in American R&D investment, but rather a demonstration of the massive increase in recent investment by other countries. According to the latest numbers, a handful of countries account for over 80% of global governmental spending on R&D (measured in PPP or Purchasing Power Parity): the US, China, Japan, Germany, South Korea, France, the UK, Russia, and Italy.

The Global Innovation Index, published by the World Intellectual Property Organization since 2007, takes various factors into account when compiling its own ranking, including stability of institutions, education level, infrastructure, financial and business sophistication, and creative outputs including number of patents. Though North America and Europe far outpace other regions on the innovation index, recent numbers show a clear shift towards the east, particularly when microanalyzing the data. Asia is swiftly catching up with major outperformers when considering level of development.

The common thread in looking at recent trends is the promise and hope in innovation worldwide. Rather than hitting pause on innovation strategies during times of crisis, governments and companies alike continued to invest in innovation. Innovation has been at the forefront of recovery from the pandemic as companies turned to new ways of doing business, and was crucial in the scientific dedication that led to development of vaccines. Publication of scientific articles, patent filings, government R&D investment, and private investor interest all showed phenomenal growth over this period, leading to our thesis that innovative businesses are driving the future.

Global leaders in innovation (in green on the map) according to the Global Innovation Index

Switzerland	1
Sweden	2
US	3
UK	4
Republic of Korea	5
Netherlands	6
Finland	7
Singapore	8
Denmark	9
Germany	10
France	11
China	12
Japan	13
Hong Kong/China	14
Israel	15
Canada	16
Iceland	17
Austria	18
Ireland	19
Norway	20

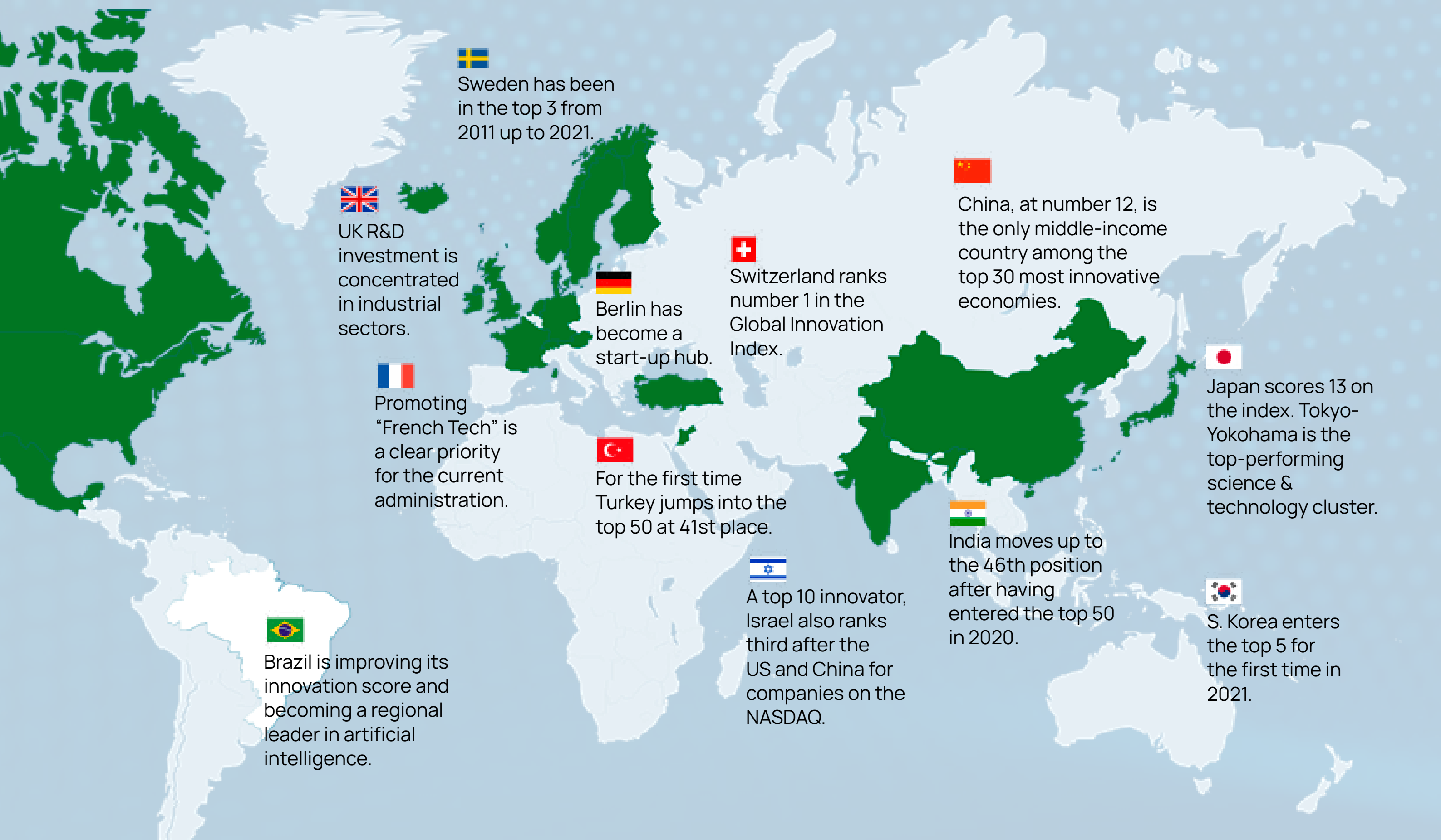
Canada is the top performer for market sophistication.

US contribution to the innovation landscape remains unparalleled, both in numbers and in the popular imagination.

Resilient sectors

As might be expected, pharmaceuticals and biotechnology showed large increases in R&D spending, together with the software and hardware industries. Automobile and transport technology represent the lion's share of private company investment in Europe.

Patents for innovation in greentech show more of a regional mix. Here Korea and the EU are tied, followed by Japan, then China, with the US in fifth place. The pace of public offerings for technology companies worldwide shows a steady increase. From 2019 to 2021 the number of tech IPOs jumped 72% (see table on page 6).



The 7 innovation pillars used by the Global Innovation Index to calculate annual country rankings:

■ Institutions ■ Human capital and research ■ Infrastructure ■ Market sophistication
■ Business sophistication ■ Knowledge and technology outputs ■ Creative outputs

Source: Global Innovation Index

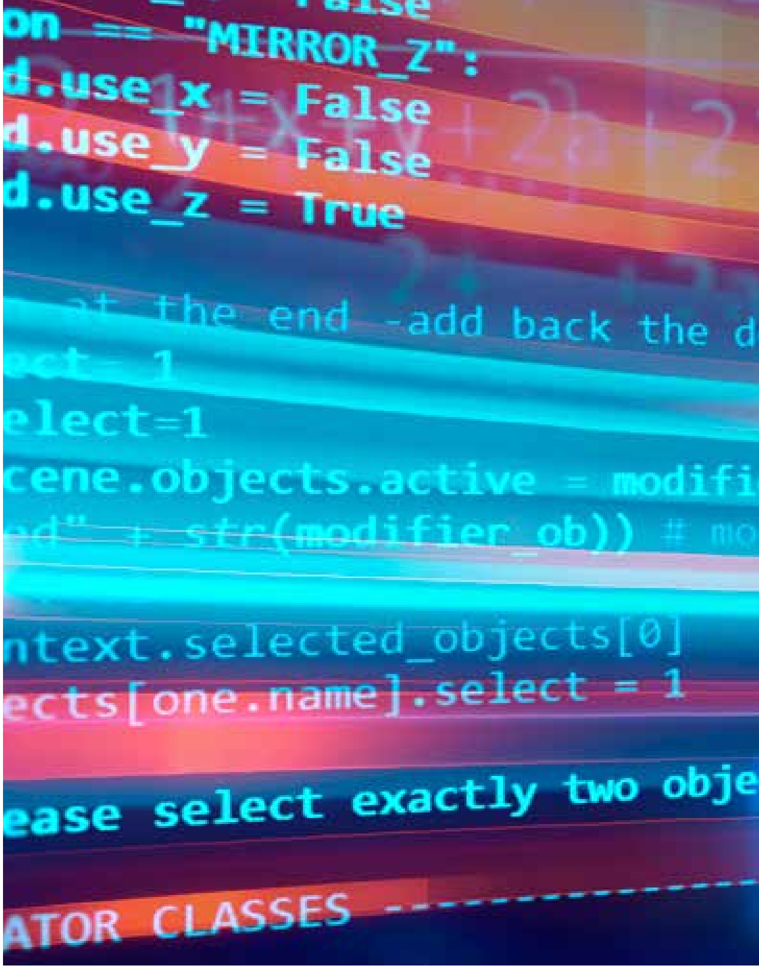
Innovation strategies of major economies

With the recognition of the role of science and technology in economic development, different nations have deployed various future-oriented innovation strategies.

The US has always maintained a leading position in the field of innovation. Industry competition, human resources at the highest professional and technical levels with constant new entries into the labor market from both universities and highly skilled immigrants, a strong business leadership culture, stable market demand, well-established infrastructure, a favorable regulatory environment, and support at all levels of society for industrial development, create conditions that are conducive to innovation. These can be especially observed in "innovation clusters" across the country that bring together businesses, universities, and investors in creative proximity.

Christian Given, director of business development at Clairfield in Atlanta observes "there is no fear of failure entrepreneurially in the US. In fact, in clusters like Silicon Valley, failure can be a badge of honor." Culturally, risk-taking entrepreneurship is championed and there is no stigma around failure as there may be elsewhere. This mindset, in turn, drives even more innovation.

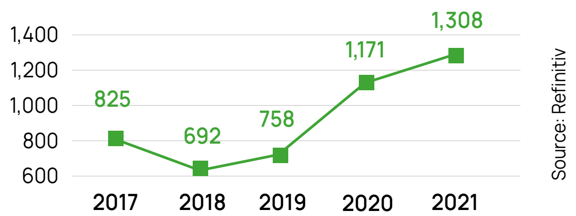
Such strategies clearly pay off. The US ranks first in the world in the number of unicorns, or privately-owned companies valued over USD 1 billion—a total of 488, accounting for almost half of the world's total number, mainly in the fields of internet software and services, e-commerce, and financial technology.



Europe has a thriving start-up scene with well-trained software developers and readily available financing, but transforming these startups into major companies has been a challenge. Europe has only half the unicorns that the US does. Digitalization at European companies also lags behind the US. The EU R&D Scoreboard, which benchmarks industry innovation performance, shows that the US doubles Europe in number of companies that invest most in R&D. In fact, R&D investment by European companies dipped by 2.2% in 2021 while in the US it increased by 9.1%. Of the EU member states, German companies were the biggest investors, at EUR 86.6 billion. France is in second place at 32 billion, followed by the Netherlands at EUR 19 billion.

Still, European technology companies have tripled their funding since last year with 2021 funding hitting over EUR 100 billion. Europe also saw about 100 newly minted unicorns. Most investment was in the fields of e-commerce, healthcare, tourism, vehicles and transportation, fintech, and data management and analysis. Europe is also a leader in "purpose-driven start-ups" that aim to make the world a better place.

Number of technology IPOs worldwide



The importance of startups in forming the new generation of the traditionally strong European midmarket segment is not lost on the EU, which includes its Startup Europe Initiative as part of its strategy on small-and-medium-sized enterprise. "In Germany, we see a strong middle market with market and segment leaders we are calling Hidden Champions. These technology and solution-focused firms have a worldwide leading position in a dedicated niche," says German partner Dirk Middelhoff.

Clairfield partners outside of Europe and the US are equally focused on innovative businesses in their geographies. In Israel, government R&D expenditure accounts for 4.6% of GDP, far exceeding the US, China, or Germany, and its start-ups, among which we count Clairfield clients, are leading international technological breakthroughs in industries such as communications, internet, medical care, agriculture, biotechnology, security, and desalination. Muge Tuna, partner at Clairfield in Istanbul, mentions GXO Logistics, and Gefir, a grocery delivery company, as two Turkish unicorns that stand out in crowded segments yet where there is room for international growth.

India has long been recognized for technical know-how and is becoming a global hub for innovation with the third largest start-up ecosystem in the world and over 50 unicorns. "Indian start-ups have been able to build and deliver success stories on back of strong domestic consumption, a skilled and globally competitive workforce, the digital push provided by recent government policies, and diverse business environment, says Manoj Patkar, Clairfield partner in India. "We still have work to do in terms of improving infrastructure, the ease of doing business, and fundamental research and development capabilities to remain a global frontrunner in business innovation in the long run."

With recent large strides, China has formulated a specific national scientific and technological development plan to become an innovation leader. The plan focuses on several industries deemed to be of future importance including information technology, high-end equipment manufacturing, new materials, green vehicles, renewable energy, and the digital-creative industry. The Chinese government's investment in scientific research has enabled China to surpass more developed nations in many scientific research indicators in just a few years, and Chinese companies are also investing in R&D at a rate far higher than the world's average. The R&D investment of Chinese companies for innovation has already proven fruitful. ICT and Internet companies represented by Huawei, ZTE, Baidu, Alibaba, Tencent, and JD are household names worldwide. China also boasts about 170 unicorns, ranking second in the world. Among them, Bytedance, the developer of TikTok, has become the most valuable company among the global unicorns, with a market valuation of USD 140 billion.

Working with innovative businesses

Clairfield provides advisory to innovative businesses throughout their life cycle and is pleased to support companies that pioneer new technologies in sectors that are highly relevant today, including e-payment and big data, as well as for the future, including electric vehicle technologies and renewable energy.

As trusted advisors, our dealmakers have seen some common challenges at these companies as they strive to grow and attract investment. Dirk Middelhoff, who focuses on technology transactions, says that recruitment has become a large problem. Tech talent is in high demand and the work-from-home trend has clouded the picture. “In contrast to existing employees who have responded positively to developments in home office, video conferencing, and other tools, new employees find that remote working complicates their onboarding and the building or integrating of company DNA,” says Dirk. In terms of specific challenges during a sale process Dirk observes “I have seen innovative, small and mid-sized technology firms with modern organizational charts with low or no hierarchy—teams making their own decisions with little or no management influence. They struggle to describe their day-to-day working methods, and how they will be impacted after a possible acquisition.” Brian O’Hare, partner in Barcelona, comments that while it is exhilarating to work with start-ups, they believe so much in their future that it can be a challenge to get their feet on the ground. “If you’re selling a company based on its growth, you have to make sure that they are actually hitting those growth targets while the investment process is ongoing.”

Muge Tuna, partner at Clairfield in Istanbul, says that the role of the CFO is critical as the CFO helps ensure the long-term success of innovation portfolios by creating alignment between the finance and innovation teams. “The CFO role, within company leadership, has become more of a problem solver as it covers all issues of recalibration, reallocation, sustainability, and productivity, all of which have innovation as a common thread, especially in the era of automation technology and artificial intelligence.”

Innovation in the M&A process

The impact of technology on the investment banking business has been more of a slow burn than a wildfire. With the exception of highly automated capital markets and trading activities, changes have been slow to be implemented in advisory compared to commercial banking, for example. The challenge remains that while clients demand deals to be done quickly and cheaply, behind the scenes the M&A process involves careful research, management of information asymmetries and above all, judgment.

Currently technologies such as virtual data rooms, digital site visits and document and project management systems are used to facilitate the deal process and can reduce time and costs of some tasks. In the next few years we can expect that process automation, big-data analytics, natural language processing, and machine learning will play a role in automating some of the more rote work in financial analysis and beyond. It is now easier to do a deep dive into data and slice and dice it in ways that were not possible years ago. On the flip side, buyers must be prepared to go through a multitude of data points and determine what is relevant.

One very welcome change in the M&A process that is well underway is the centrality of environmental and social considerations as part of the evaluation of a target and good business fit. Sustainability is a key driver of an investment proposition and valuation of a target, which M&A advisors need to address. Yet another innovation that points to a better future. ■

Are neural networks the future of financial modeling?

Clairfield's Giuseppe R. Grasso has spent his career examining big questions on big data

Giuseppe R. Grasso is co-founder of Clairfield Italy and has led many important transactions over his long career in M&A, particularly in the industrial segment. But Giuseppe has always had a side interest in what we might call the history of knowledge, from the early Italian economists of the 1700s with their theory of money to big data analytics. At university he studied economics with a particular interest in history of economic thought and models of the economy based on artificial intelligence.

Giuseppe's interest in the data points that show when a company is thriving led to the establishment of a research arm called KF Economics (KFE) in 2006. This was about the time of the Basel II banking regulation framework, which required capital feasibility studies in banking. Capital risk was becoming a hot topic. Giuseppe called on his university contacts to help develop algorithms to determine how sound companies were. Guided by these algorithms, KFE studies thousands of data points of Italian midmarket industrial companies to identify key factors behind their successes and failures and identify trends.

KFE partnered with Bureau van Dijk (acquired by Moody's in 2017) and served a client base that consisted mainly of Italian companies that used the rating to assess the creditworthiness of their customers. Some banks also used the program, as did some government bodies, including customs duties authorities, who were thus able to extend credit for the payment of duties as goods moved throughout Europe.

KFE

sold a 60% majority to

SEVENDATA

KFE eventually attracted investor interest. In 2021, KFE sold a 60% stake to SevenData, a marketing technology company, while Clairfield Italy retained a minority stake in KFE. SevenData will put KFE expertise to use in further developing its own advanced decision-making system for credit-risk analysis, improving the predictive ability to identify an entity's default risks based on neural network models, the most advanced area of machine learning and artificial intelligence.

The development of KFE closely mirrors the evolution of data science. The original KFE model relied on logistic regression, which was the first statistical technique used in machine learning and is limited to numerical input. Today it has been replaced by other methods. The new methodology relies on neural networks and, rather than being based on numbers as in logistic regression, it encompasses more numerous and diverse data points. Indeed it can be said to be based on "knowledge" itself. Neural networks thus provide a rating model that is far more accurate than the logistic regression model. Even more importantly, they permit the ratings of companies that do not provide public financial statements. In Italy, these "private partnerships" encompass over 80% of all companies—some 3.7 million companies— so being able to assess them is truly revolutionary. Using information including the sector, number of employees, and location, and comparing this data with the information from similar businesses that do have publicly available balance sheets, allows the machine to make deductions about creditworthiness in a process called "supervised learning." Giuseppe compares the process to how a smartphone photo gallery can determine which of its pictures are of cats, based on all the previous information it has learned about images of cats. For M&A, the tool can be used to assess the probability of a liquidity event, or conversely, business failure, taking into consideration the average age of the owner and the board of directors, industry, and size, among other data points.

As an M&A practitioner, Giuseppe is a firm believer in the benefits of technological innovation in the M&A process. Today's technologies expand one's knowledge and help make global connections. There are many online deal matchmakers, for example. He does not believe this is the end of careers in investment banking, however. Predicting the best buyers has far more variables than what machines are able to deal with right now. And crucially, the final and critical mile is still about human connection and trust.

What's in the future for KFE? Together with Equita, majority shareholder of Clairfield Italy, the team is developing three activities. The first activity revolves around Equita's role as an important stockbroker that mediates eight percent of volumes on the Italian stock exchange. The KFE neural network model will allow Equita to aggregate stock activity and track market trends based on stock exchange flows. The second activity relates to Equita's investor research. As anyone who reads investor reports knows, ninety percent of most reports are comments on figures and peer comparisons, which, if automated, would allow analysts to concentrate on their value-add and judicious conclusions. Lastly, the KFE neural networks can determine how news affects stock trends and provide clients with timely information in order to act. It would be dangerous indeed for the tool to make direct stock recommendations, but it can be used to synthesize the direction of news trends in order for the trader to make her or his own judgment call.

What is exciting to Giuseppe today in terms of AI is how it provides the power to connect almost infinite dots in a way that was unthinkable 10 years ago. AI provides a bird's eye view of the world and a lot of power goes along with such quasi-omniscience. The management of knowledge creates new knowledge. As Giuseppe says, "You are studying how a shape can be formed, rather than the area of a triangle."

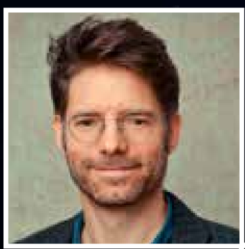
Giuseppe also recognizes what to be wary of in the use of predictive technology. It has been demonstrated that algorithms have the same biases as their creators, and this must be accounted for to avoid prejudices when assigning credit ratings. And in contrast to the industrial revolution, which created many new factory jobs and pulled entire societies out of rural poverty, the AI revolution will eliminate many mid-level jobs. The productivity rise will be huge but it will displace people who need not only means to live but a sense of purpose. For millennia these two needs have been intertwined but they are likely to be decoupled in the future.

How can society handle such an enormous change in how we live? Giuseppe believes some form of universal basic income, perhaps tied to incentives, such as study or volunteer work, may be the best solution. We can foresee a tremendous increase in the concentration of power and wealth in a small number of hands, which history has shown us is a threat to democratic institutions. However Giuseppe's hope is in another lesson to be learned from history, which is that competitiveness and innovation have always contributed to shifting the seats of power. ■

Innovation and a six-step sustainability action plan for 2022

How companies approach sustainability transformation

Georg
von der Ropp



Moritz Gomm

Moritz Gomm is business solution manager of Zühlke Engineering GmbH, a consultancy firm that helps industrial companies innovate and move towards sustainability and digitalization.

Georg von der Ropp is CEO and member of the board of BMI Lab AG, a spin-off of the University of St. Gallen supporting companies in developing innovative business models and building innovation capabilities.

Moritz and Georg lead the Sustainability Circle, a network for manufacturers to exchange experience, network, and have access to expertise on sustainability solutions.

Just when digitalization as a megatrend has been fully embraced in corporate strategies, now the second megatrend arrives with great force: the socio-economic transformation towards a sustainable economy and society.

Both trends share the fact that they affect almost all areas of a corporation and therefore need to be addressed in a cross-disciplinary manner. Both digital transformation and sustainability transformation require action on two levels: transformation of the existing core business, and tapping into new business opportunities created by digital technologies or by green tech and the circular economy. Innovation is at the core.

To successfully achieve such transformation, an innovative mindset is crucial. Companies that focus on customer centricity, agility, or even collaboration with startups as part of digital transformation will be able to combine sustainability transformation with profitable growth more quickly and effectively.

Companies that see their sustainability transformation as an opportunity for innovation are offered a wide range of potential benefits:

- Greater resilience through reduced dependence on resources and avoidance of supply bottlenecks.
- Improved customer loyalty and attractiveness for employees through sustainable business models.
- Preparedness when regulation kicks in.
- Unleashing creativity based on higher environmental and social goals.
- Strengthening brand and image.

Sustainability requirements are new for many decision-makers, but what needs to be done is relatively straightforward. We have developed a sustainability action plan based on consulting experience as well as discussions with more than a hundred leaders from 40 manufacturing companies in Germany, Switzerland, and Austria who have participated in the Sustainability Circle, a German-speaking network of manufacturers on the path to sustainability transformation. The sustainability action plan addresses six areas:

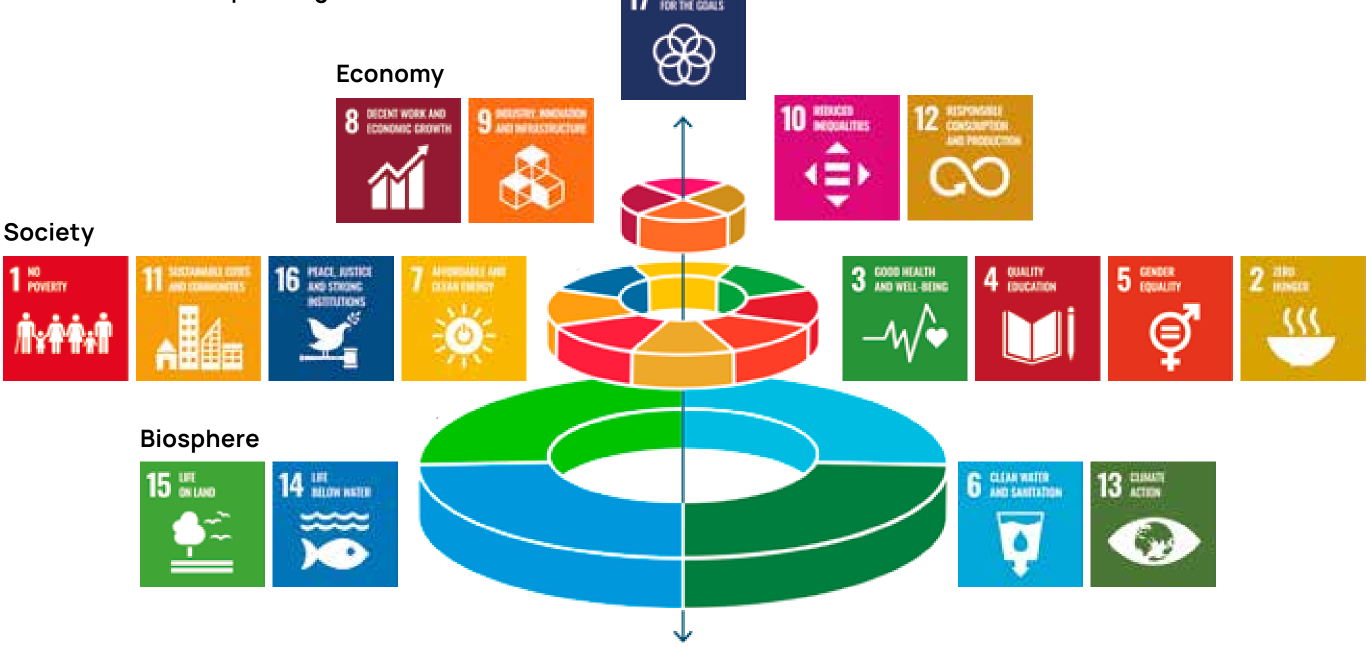
1. Sustainability strategy
2. Targets and reporting
3. Sustainable products and services
4. Sustainable supply chain
5. Sustainable business models and circular economy
6. Organization and culture

1. Sustainability strategy

Sustainability has long since ceased to be just another box to tick and is now a strategic factor for a company's competitive positioning. After all, not only are end customers increasingly demanding "green products," but investors are looking for "green investment opportunities," and in B2B business, sustainability is becoming a hard factor in awarding contracts. Legislatures are also increasingly laying down binding requirements for sustainable action through laws and regulations.

Top management must as a result develop clear and coherent positioning with regard to sustainability: What does our company stand for? What added value do our products and services offer in terms of people, profit, and planet? To which of the seventeen Sustainable Development Goals (SDGs) of the United Nations can we as a company make a specific value contribution? From this, particularly effective levers for more sustainability in the company as well as strategic sustainability goals can be determined.

Sustainable development goals



Source: United Nations; Stockholm Resilience Centre

2. Targets and reporting

In terms of a company's reduction of carbon emissions, management must define strategic targets as well as corresponding measurement criteria. The Science-Based Targets Initiative (SBTi), a partnership between CDP, the United Nations Global Compact, World Resources Institute, and the World Wide Fund for Nature, has defined three sources or "scopes" of emissions: the company's own activities (known as Scope 1), the purchase of energy and air conditioning (Scope 2), and all activities in the upstream supply chain as well as the use of the company's own products in the use phase (Scope 3).

Sustainability reporting is necessary to ensure the effectiveness of the measures and to present the company's own actions to third parties. Standards are already becoming established here by different governmental and scientific entities and NGOs.

Transforming one's existing core business also means creating transparency of one's own footprint. This is possible both at the level of individual products and at the corporate level through life-cycle assessments. The most important environmental impacts and opportunities can be derived from the results and corresponding fields of action can be defined. The measures include, for example, decarbonization by avoiding fossil fuels, improving energy efficiency, or eco-design of products.

3. Sustainable products and services

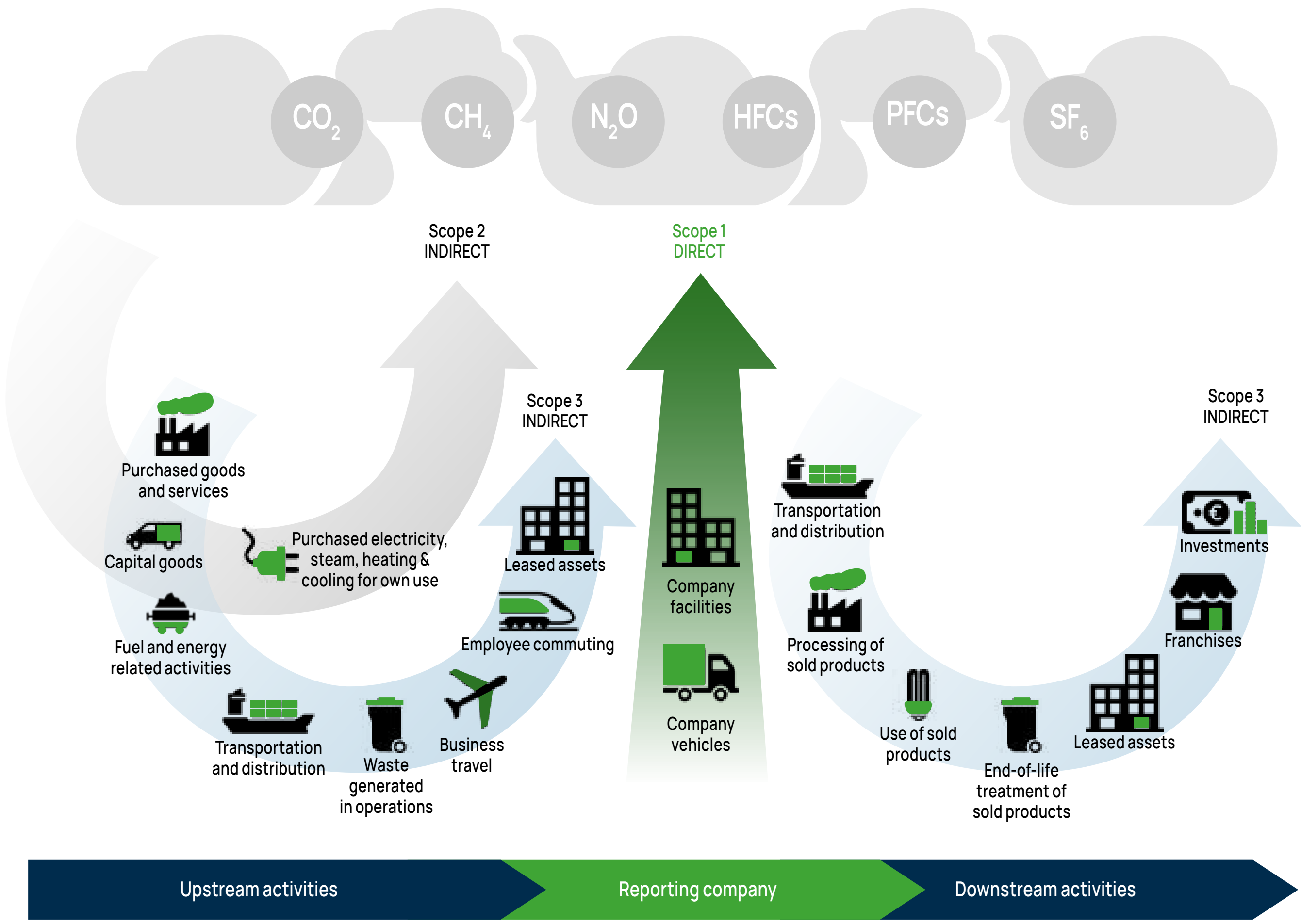
Implementation of sustainable actions requires that existing and new products and services must be rethought: How can products be produced with fewer raw materials and emissions? How can production be made more efficient? How can waste and rejects be avoided? How can raw materials be recovered and reused? How can existing products last longer, through repairs or reuse? Where can bio-materials be used? Such design principles for products and services are summarized under the term "eco-design." R&D departments must be given strict protocols to prioritize these values.

4. Sustainable supply chain

For most companies, the majority of emissions are indirect, arising from upstream in the value chain or at the end user. All links in the supply chain must cooperate and align to reduce the footprint of their own products. Zühlke is currently developing standards and IT solutions to map supply chains and all the players involved. This enables the recording of related emissions as well as measures to reduce them.

In the future, companies will play two roles here: On the one hand, they will demand more transparency and commitment to sustainability from their suppliers in order to achieve their goals. On the other hand, they will also be asked by downstream companies to provide sustainability information and to contribute to reducing emissions.

Emissions from the value chain



Source: GHG Protocol/Science Based Targets Initiative

5. Sustainable business models and circular economy

Successful companies are characterized by the fact that they create a unique benefit for their customers and at the same time generate profitable sales.

How this is done in concrete terms can be described holistically as a business model with four dimensions:

WHO: Which customers and which needs are addressed?

WHAT: What products and services are offered to customers and what benefits do they provide?

HOW: What does the value chain look like, what key partners and which technologies are used?

VALUE: Why is the business profitable; what generates revenue and what are the revenue mechanics that enable profitable growth?

New sustainable business models challenge the traditional logic of producing and selling products and offer new, more sustainable customer benefits through alternative usage and payment models. For some product types, this may mean that devices are no longer sold but provided on a subscription basis or billed according to use.

The most far-reaching approaches are circular economy or Cradle-2-Cradle. Here, the goal is to avoid emissions and waste as much as possible and to keep materials in the loop. This requires cross-company cooperation in the value chain as well as cooperation with new partners, such as recyclers, operators of take-back systems, packaging manufacturers, and so on.

6. Organization, communication & culture

Sustainable transformation requires a change process as company values will be redefined. Sustainability must be organized in order to implement clear responsibilities (organizational structure) and to change business processes where needed (process organization). In addition, there are cultural and communication issues: how can the—usually high—interest of the workforce in the topic be used for the company? How can the change be communicated credibly both internally and externally? What initiatives can come from the workforce?

When communicating, care must be taken to ensure that it is credible and authentic and that "greenwashing" is avoided, as in the age of social media this can quickly have very negative consequences. The rule here is: It is better to do more than you report than the other way around.

The transformation to a sustainable company is an interdisciplinary task. It is important to involve people from different areas of the company and to proceed step by step so as not to overburden the organization. Following the Six Steps to Sustainability as outlined above is a roadmap to help build up necessary knowledge, tackle initial projects that deliver concrete results, and identify areas for improvement that are relatively easy to implement. The results will speak for themselves. ■

For more information on sustainability and innovation, contact senior advisor for ESG Bettina Gereth: bgereth@clairfield.com.

Concrete goals for a successful transition to a circular economy include:

- Close the material loop: Closing the loop is an essential first step on the path from a linear value chain to circular value creation. The loop can be closed either by direct reuse of products or components, by remanufacturing, by traditional recycling, or by biodegradability of materials. The prerequisite is innovative product design: modularity, reversible joining techniques, and the avoidance of mixed materials for simplified disassembly and recycling of the product at the end of its use.
- Improve sustainability in the cycle: Improving the sustainability of the loop through innovation ensures that the loop supply contributes to solving environmental problems by reducing the resources used or by using the products in the loop longer and more intensively. This includes repairability, local production, and the use of renewable energy.
- Select a suitable revenue model: In addition to the one-time sale of a product, other revenue models are available that keep products in circulation, increase customer appeal and offer profitability, from paying for use via a subscription fee, to paying for the product's performance, to cash-back systems that reward a return of equipment that is no longer used. Ultimately the markets will determine which revenue model is accepted.
- Inspire customers through added value from circularity.

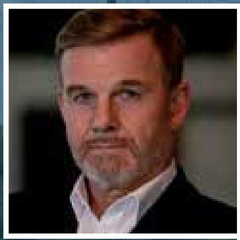
Innovative businesses

Delivering unique technical solutions for railways 16

Cleaning with ozone: an innovative solution for every day 18

Transformation and empowerment at Expondo 22

Innovators in the industrial, consumer, and e-commerce sectors share their thoughts on what it takes to run an innovative business and how to encourage an innovative culture in the workplace.



Delivering unique technical solutions for railways

Q&A with Andreas Buseman, co-CEO & chief revenue officer of Konux

Konux is an innovative railway services company that combines machine-learning algorithms and IoT to deliver unique technical solutions for the operation, monitoring, and maintenance of railways. Using a combination of sensors and AI analytics software, the Konux system monitors facilities remotely and can predict maintenance needs. Founded in 2014, today the company has 120 employees and counts most major world rail networks as customers.

Andreas Buseman is co-CEO & chief revenue officer of Konux. He was formerly CEO of railway technology company Vossloh AG (FWB:VOS).

Konux was an innovative company right from its founding as a solutions provider for the rail industry. Tell us the origin story of Konux. How did its young founders realize that they could use artificial intelligence to shake up the rail industry?

The company was founded in 2014 by Andreas Kunze, Max Hasler, Vlad Lata, and Dennis Humhal. Fresh out of university, they were inspired by the promise of the next industrial revolution and wanted to maximize the positive contribution of digitalization through a global application of artificial intelligence and Internet of Things, which were just starting to become hot topics. The Konux founders had the idea to build a combination of sensor technology and sophisticated software, but then they weren't sure where to apply it. As graduates of the Technical University of Munich, they could have used their technology in many areas: in power generation, in factories, in transportation in general. But they quickly recognized that their IoT technology was ideal for the railway industry. Physical characteristics of rail networks are similar all over the world, which makes it easier to build generic AI models to determine their physical state. The environment that needs to be monitored is constantly changing but the rail network itself remains basically unchanged. This makes it easier for developers to find a "one-size-fits-all" solution to problems.

Fast forward to seven years later: with USD 130 million in investment, the only software-defined end-to-end solution and active in 10 countries, we are just as committed as ever and audaciously believe we can help make rail the mobility choice of tomorrow.

Was it difficult to get railway companies to see how they could work more safely and efficiently using these methods?

The railway business is still very risk averse and set in its ways. Many decisions are made based on sparse, incomplete, and outdated information. So, in many cases it's definitely more of a marathon than a sprint. The hardest part is really about change management. Some railway companies still stick to processes developed in the 1980s. Transforming these longstanding and ingrained processes can drag on for a long time. However, we have often also seen the opposite—railway infrastructure clients who have recognized the value of state-of-the-art technology for their networks and embrace technological change!

What is the future of AI in other industries?

I believe that the first wave of AI companies may have overpromised regarding their ability to deliver value across many industries. They underestimated the importance of domain knowledge and the closeness to the customer. I believe that future AI companies will be focused on a specific vertical and dedicate sufficient resources on delivering lasting impact within it.

What should we be wary of during the coming AI revolution?

I think we are already way too wary. Especially when it comes to industrial applications of AI. The philosophy that "data is the new gold" is not only inaccurate, but also harmful. We all have much more to gain from being open in sharing and learning from "industrial/machine" data than entering an era of data protectionism.

How does Konux continue to innovate? Are new processes and procedures something you look at in your business regularly?

Absolutely. This is exactly why we recently launched Konux Labs, a new cross-functional team, working through our notions and assumptions, market analyses, and technical feasibility studies with full steam. At Konux Labs, we want to identify the best ideas for the next new products on the horizon that help improve railway infrastructure. And what does it take to get them market-ready? We look into new technologies and solutions and identify the products we want to bring to the market within the next couple of years. Developing new ideas, reviewing external input, conducting market analysis, business planning, competition analysis, feasibility studies, and prototypes, the Konux Labs team is constantly evaluating new opportunities. Successful proof of concept jointly with a pilot customer should result in a new compelling product, which eventually goes live and becomes a new addition to the portfolio of future railway infrastructure.

As Konux is a young and innovative business, would you say the management style at Konux is different from the companies you have led in the past?

There are differences, of course. At Konux we have a really flat structure, and a significant amount of "radical candor." People at any level can challenge decisions and take ownership of different topics. That allows us to move really fast, as we don't have to worry too much about the process or titles—we are all simply focused on achieving the best outcome for our customers.

Where do creative solutions at your company come from?

Creative solutions come from three major sources: first, our product team's vision—thinking holistically about the "railway metaverse," if you will, and each step on the way. Second, our customer teams, interacting with users every day, understanding their pains, their processes, and coming up with smart ways to unlock new use cases that make their lives easier. Third, our tech teams, looking at the new frontiers that new technologies can open. We even have a "Festival of Ideas" four times a year. People in our engineering department are encouraged to spend 15% of their time working on self-selected projects unrelated to our product or research roadmap—a.k.a "Moonshots." Moonshots are non-feature specific, exploratory work, which is sometimes hard to fit into the normal prioritization process. Vague, long-term ideas can mulled over, tinkered with, and eventually turned into valuable Moonshots as improvements to tools and methods. At the end of each quarter, people present their ideas, prototypes, or insights to the whole team and it is always amazing to see what they come up with!

Has the pandemic and the events of the last two years forced a new way of thinking at your business?

Not really. Let me start by pointing out that it is my firm belief that rail—after a temporary drop caused by the pandemic—will experience new highs. Tackling climate change remains a long-term challenge for society, beyond the unique situation we are currently experiencing.

This is why today I'm an even greater believer in the vision of our company: Transform railway operations for a sustainable future. Rail can and will play a major role in our long journey to lower CO2 emissions. But it needs to upgrade and digitize its infrastructure in order to cope with increasing demand. The money is there, as well as—looking at the EU Commission's goal of being the first climate-neutral continent by 2050—the political commitment for ambitious changes in transport to achieve a 90% reduction in transport-related greenhouse gas emissions by 2050. Rail is the only transport mode in the EU that has managed to reduce its emissions while preserving growth. So the railway, the safest, most efficient, and most sustainable means of transportation, must be part of the solution when it comes to addressing the environmental crisis. ■

For more information on Konux, contact Konstantin Zygan: kzygan@clairfield.com.

Cleaning with ozone: an innovative solution for every day

Q&A with Steve Hengsperger, founder and CEO of Tersano

Steve Hengsperger is an engineer, entrepreneur, and innovator based in Canada. He is founder and CEO of Tersano Inc., a producer of devices that use ozone technology to create a sustainable solution to clean and sanitize residential and commercial settings. Tersano aims to change the way the world cleans, an especially relevant goal for these times. Steve is also founder and CEO of Advantage Engineering, an industrial-component prototyping and molding company.

Tell us a little bit about your background and education.

I studied mechanical engineering at the University of Waterloo in Ontario and graduated in 1991. During this time, I held sales and marketing roles at companies like IBM and thought I would have a bunch of job opportunities lined up in Toronto when I finished school, but then the recession hit and many companies were laying off staff as opposed to hiring. I ended up finding a job with a tool and mold shop in Windsor to do engineering CAD work. I thought I would be in Windsor for a couple of months, a year at most, but I'm still here now.

Back in 1994, these were the days when computers for doing CAD work cost upwards of $50,000. On top of this, the software we were using at the tool and mold shop cost around $25,000 and the developers put it on sale. I was still single at the time and thought "I could do a little work on the side from home," so I bought the software and set it up. The owner of the shop where I was working kept saying "You'll never make it on your own." Eventually I quit and decided to invest all my time into my business because the other thing I had always wanted to do was get more involved with stereolithography as there was a lot of talk about 3D printing. Within a year, I grew this company, now called Advantage Engineering, to a team of twelve guys and bought the first SLA stereolithography 3D printer in Canada.

What did you see at the time in the technology that other groups doing similar things did not see? How did

you become the first to really get involved in the 3D printing world?

The stereolithography 3D printing machines were very expensive at the time, and weren't really something many companies saw use for, especially in the automotive industry. I ended up talking to many non-automotive customers that were starting to embrace this technology. Many of them were interested in having multiple prototype parts, so I quickly purchased a vacuum casting robotic machine to make urethane parts. My philosophy was to offer the latest, greatest, and best materials to get these prototype parts as close to production quality as possible.

Can you talk a little bit about your philosophy of trying out new concepts and innovation?

I think that much of our innovation comes from listening to customers and understanding the issues or problems that they have, and saying "How do we help them solve that?" rather than saying "Here is what we have." Our initial reaction sometimes is that it's not possible, but once we start working and thinking of different ways we can get to a solution it leads to a lot of innovation and creative problem solving.

How did you transition from the 3D printing and manufacturing industry to your Tersano business?

In our early years, we were doing prototypes for a company called Fantom Technologies, a vacuum cleaner company in the Niagara region. They had the Dyson license so they were the first to introduce a bagless vacuum cleaner in North America. They ran into financial trouble and as a result, many of their engineering staff were out of jobs. They came to me and mentioned that they had brought a water treatment system using ozone technology to the market just before their demise. They said that this device had a lot of problems, but that if we could design one from scratch and make it better, there would be a lot of potential with this product. That is how we started Tersano. This was back in 2001, and shortly after, the EPA, FDA, and USDA all came out with statements that said you could use altered water to sanitize and clean surfaces. This was a game changer so we built a quick prototype home sanitizing system and when we started showing these devices to retailers, there immediately was a lot of interest. We ended up launching both products, our water treatment system and home sanitizing system, because our goal has always been to replace chemicals. Looking back, we were way ahead of our time because now everyone is looking for sustainable alternatives to common problems. Back then, the word "green" was rarely used, and now sustainability is at the forefront of everyone's minds.

At the time, what potential did you see in the product even though it had previously been unsuccessful?

When we made the decision to start Tersano, we were looking only at the water treatment system. In hindsight, when we look at the product that we launched to consumers (the home sanitizing system), we kind of shake our heads and wonder why we thought people would buy that – the bottle was only good for fifteen minutes between charges and it took up to five minutes to charge. We ended up shifting our focus onto the B2B world because retail was very challenging. However, in B2B we could grow organically and spend more time talking to customers and making the product better, which is where the real innovations came. This was around 2008, and by 2010 we had a device on the market that created the sanitizing solution instantaneously so there was no longer a charging time. This model of our product had a useful time of 45 minutes, and a year later we came up with another important innovation, the cartridge, which extended the useful life of our product to 24 hours. The magic of our product is that for both the residential and B2B products, you just put regular water into the device. For example, in an office building or hospital or airport, you can simply hook up to a tap in the janitor's closet.

> **"I think that much of our innovation comes from listening to customers and understanding the issues or problems that they have, and saying "How do we help them solve that?" rather than saying "Here is what we have.""**

> Our products are often faced by a lot of skepticism, especially on the consumer side, because it starts with just water and seems too simple to be true.

What are the top benefits of using your product versus traditional cleaning chemicals that are prevalent in the market today?

Our product basically only uses water and oxygen as inputs, and then converts that solution into a powerful cleaner, deodorizer, and sanitizer. That in turn then turns back into water and oxygen so it is very sustainable and has no negative impact on the environment. As an example, if you're cleaning with a mop and bucket and dump the dirty water down the drain, that dirty water contains all the chemicals you used to clean. With our solution, there's no chemicals involved. The beauty is that all we're doing is adding an extra oxygen atom into the water, making ozone instead of O2. You can get our product on your skin, splash it in your eyes, and even drink the solution by accident without it harming you in any way. In our early days, we sold based on simplicity since we offer a single product that can replace many different cleaners. Now, we also promote the fact that our solution is chemical-free, residue-free, and scent-free, which is very attractive to many government buildings and schools. Another differentiator is our high slip coefficient of 0.9 compared to 0.6 for chemical products. One of our first clients, a hotel in Vegas, saw 70% less slip and fall lawsuits after using our product.

How has the B2B part of the business contributed to the company's credibility?

For example, we are on McDonald's approved list of chemicals and we're the only on-site generation sustainable product that they have. We are also the first choice for some of the biggest contract cleaners in the world such as ISS, Sodexo, and Compass.

Seeing as how most of your experience was with building tools and the like, how were you able to pivot and make an innovative cleaning solution?

I always tell people that you go to school to learn how to learn. Very few of us do in the real world what we learned in school, so when it came to Tersano, I viewed it as a challenge that I could embrace and learn from.

Can you tell us a little bit about what the road map looks like for Tersano? Any interesting features or applications that you have planned or that you're just getting started on?

We are working on a few things. One of them is to add IoT capabilities to our products. Our devices already get plugged into an outlet and utilize power, so this will be relatively easy to do. Another project we are working on is building a dashboard tool for customers that can track how much solution of Tersano they used. This will allow them to make public claims as to how many liters of chemicals they no longer use. Another use case for this dashboard tool would be for billing customers for the amount of solution that they had used; this way they are not pre-paying but are using Tersano products as they go every month, similar to electricity or natural gas.

What does success look like to you? What are the big milestones that you are hoping to achieve, and what do you need to achieve this success?

On the B2B side, we would like to get to a point where we have 10% market share or something significant versus our current market share right now. I also wish people would be more open to believing that a technology like ours can work and replace harsh chemicals. Tersano products are often faced by a lot of skepticism, especially

on the consumer side, because it starts with just water and seems too simple to be true.

Funding would help accelerate growth plans. This would be a two-pronged goal as in order to grow, we would need funding to get the products to markets and for R&D, but then also funding for the software development side of it as well.

As a Canadian-based business, do you have global ambitions or geographies on which you want to focus? In which countries today have you had the most success so far and where do you see opportunities going forward, and to what extent is this driven by the regulatory environment?

Even though we're Canadian, Europe has been our biggest market so far. They seem to embrace sustainability a lot more easily and quickly than North America. A challenge we have is that we need to get regulatory approval in each country. As a company, we're very proud that we know where we stand in every country around the world, we know the path to get regulatory approval in each country, and that's something we're working towards. Many of our competitors don't take the same amount of care in getting regulatory approval.

Our two best distributors in Europe are the UK and France, and we have a good distributor down in Australia as well. We also see lots of opportunity in the surrounding areas such as the whole Nordic area, which we believe is a great opportunity since they focus a lot on sustainability.

How do you market your products and get them into the right hands?

We've tried a variety of marketing strategies. Lately, we have been using influencers to market our products and actually have seen success with micro-influencers. For example, for larger social media content creators, even though they may have millions of followers, if they're promoting something that doesn't align with their brand or not what their followers are interested in, then it doesn't work.

So you generally use influencers with smaller followings?

Yes, micro-influencers generally have less than twenty thousand followers. Our target market is the 25- to 34-year-old age group, and the next best age group for us is 35- to 44-year-olds which is why our Facebook engagement is relatively high. We also target the 65 and over age group and this demographic buys the most iClean Minis. This happened because it was originally so expensive, and the older age group could justify the cost. Now that prices are lower, we're finding that the younger generation are increasingly purchasing it. We also see a lot of potential in the younger demographic because they are most appreciative of using less chemicals around their homes.

Is there anything else that you think readers should walk away with that we may not have covered?

I would love readers to walk away with a sense of how our product works so efficiently and why it was such a significant technological innovation. We can clean and sanitize most things from greasy surfaces to bacteria on your hands, and have even successfully been tested five different times against Covid. People call us "magic water" or "Harry Potter water" because it basically does everything and replaces a lot of everyday cleaning products. ■

Clairfield is currently advising Tersano on its fundraising. For further information, contact Oliver Khan: okhan@clairfield.com.

Transformation and empowerment at Expondo

Q&A with Nicholas Holdcraft, CEO of Expondo

Nicholas Holdcraft is CEO of Expondo, a leading e-procurement company with over EUR 100 million in sales. Headquartered in Berlin, Expondo offers branded products for the professional and semi-professional trades. Nicholas has had a distinguished career in various C-level positions in white goods with Electrolux, mobility with Govecs, and since 2020, with Expondo.

2021 marked an important step in the development of Expondo. Expondo underwent a major transformation from being a founder-led business to professional management, coupled with senior debt refinancing and a minority equity investment from long-term growth investor, Credit Mutuel Equity.

A Clairfield advisory team led by Alex Klemm, chairman of Clairfield, and Piotr Kolodziejczyk, partner of Clairfield Warsaw, assisted Expondo in this process.

The company was founded by two founders selling industrial scales on eBay. What propelled them to recognize the potential of what we might call niche e-commerce?

The "rocket fuel" as we call it in Expondo was the relentless search for high-margin products that were simply not available to purchase online in Europe.

As CEO, how do you see the transformation of the business to professional management and define clear dedicated areas of responsibility at C-level, including innovation?

The transformation from a founder-led organization to a functional organization driven by professional management was a long-time goal of the founders which really began to take hold in 2020. It was supported by the belief that true functional experts in their respective areas could bring more depth and know-how from other leading e-commerce companies and industry best practices.

The transition process was a distinct two-step process. The first step was the hiring of top function managers in 2019-2020, first a CTO, then a CCO, and then an internal promotion of a COO. The CMO was named in November of 2020, which brought the team another level of depth in performance marketing and industry best practices around optimizing ROAs. The focus on each hire was their ability to bring innovative and industry-leading solutions into each function.

After the functional team was established, step two was to bring in an experienced CEO who would lead the team, interact with the shareholders, set the vision, and drive annual cornerstone projects forward. I was appointed to this role of the group CEO effective January 2021.

Since then management has been driving customer-facing innovation and product development at a rapid pace, launching more than 2,500 products in 2021 and outperforming projected net revenue by over 15%.

What are your ambitions in taking Expondo forward into the future and how will you maintain the innovative pace?

All of us at Expondo are pulling towards our 3HAG (3-Year Highly Achievable Goal) of EUR 300 million revenue by the end of 2024. To achieve that, we are growing innovation through our new headless e-commerce shop, opening new markets, and continuing the exponential growth of our already diverse product portfolio. The plan involves the implementation of innovative warehousing solutions as well as innovation in our product launch cycle.

Our promise is to share the new experts' shopping experience as the next e-commerce revolution in terms of simplification and effectiveness.

What values do you strive to instill in your team and overall organizational culture?

All of us at Expondo are really excited about our core value transformation. For years the three values at Expondo were partnership, commitment, and performance, which served the organization very well during those growth years when the company was limited in the number of employees. One-word values were easily communicated and understood by all.

Now the organization is 500+ strong people with additional hundreds of suppliers and partners located around the world. We needed more descriptive, actionable company core values that we could drive forward as our Expondo DNA. Together working with the employees from a wide area we have identified five core values that are close to our hearts:

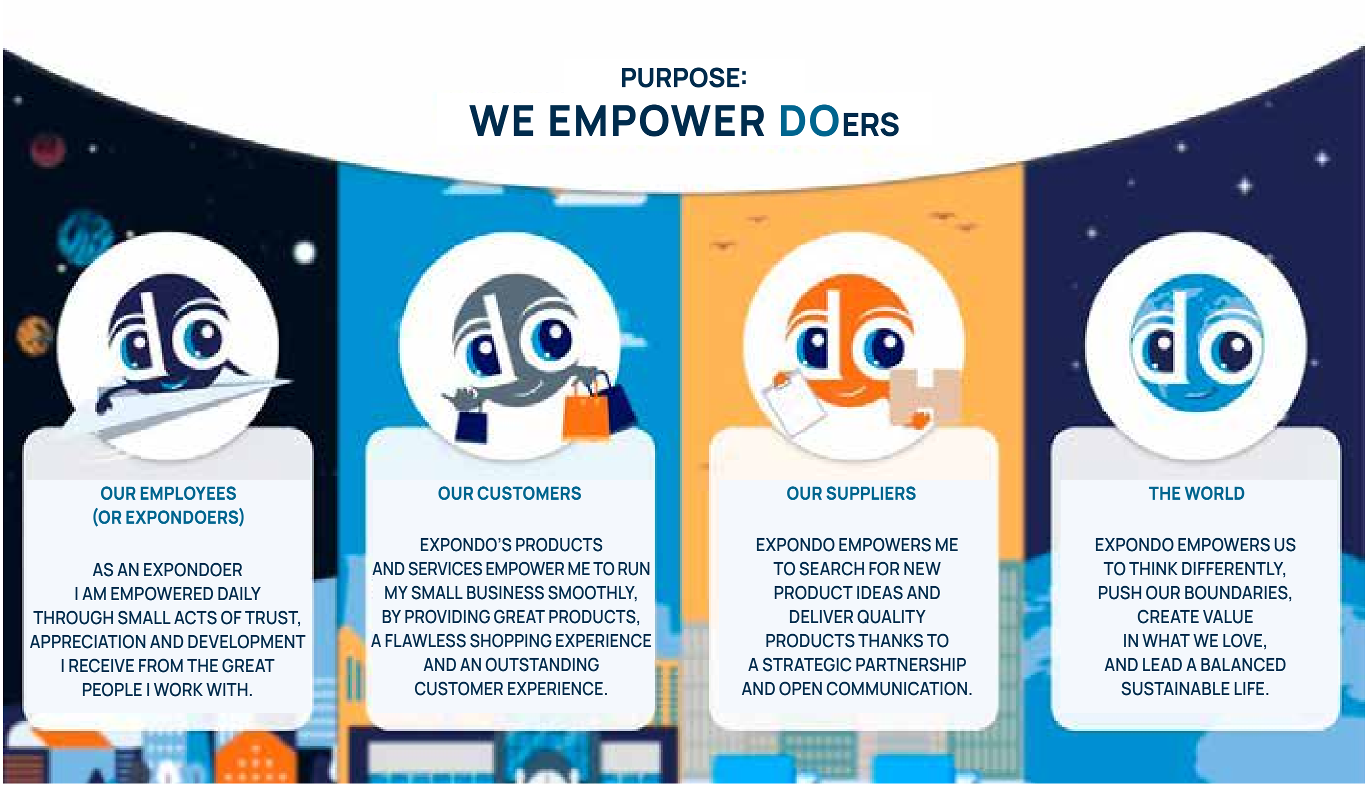
- Promoting a lifesaver mentality
- Focusing on data
- Giving space to passionate can-doers
- Fueling positive energy
- Outlearning ourselves

Each one of our core values has an icon associated with the concept and has "cool behaviors" and "uncool behaviors" describing how they can be emulated in our workplace. It is very important that they are not just "values on the wall" but they are actually driving what we do every day and are being lived by each of our Expondo employees. With our values I always say, "it's not about what you preach, it is about what you tolerate in your core values and culture." At Expondo we have amazing core values driving a first-class working culture that attracts top-talent and retains our current Expondoers!

How do you define the concise vision and mission?

Expondo's vision and mission have been transformed into one simple purpose in 2022: We Empower Doers. After a year and a half of trying to explain and push a complicated vision and mission statement to the organization, customers, and partners we realized that it just was not resonating and that we can get across a similar message with one powerful purpose statement. This realization came with the help of Scaling Up experts from the famous book written by Verne Harnish. We developed it together with the input from stakeholder groups from each key area and communicated it to the four audiences in 2021 (see the graphic, next page).

In the future we will continue to build on our communication strategy to really hammer home that Expondo is about empowerment in every aspect of the word. From the use of our products, to thinking differently, and so on.



Where do you see innovation opportunities along the value chain to strengthen Expondo's USPs?

Our innovation opportunities lie within the customer experience area. In 2021 we became laser focused on improving customer experience, from the first moment of contact until well after the products arrive and are in use. We have developed an entire customer experience group to update management on key project progress. We also launched a program called Customer Muse where once a month everyone from management calls customers directly with a specific set of questions aiming at deep diving into certain information. I believe it is instrumental in changing the perspective of leadership to focus on the customer-first approach. These are among other significant steps in this area, and we will continue to innovate for our customer in 2022 and beyond.

What potential do you see with your new minority shareholder to innovate in the context of a value creation roadmap?

We see that our minority shareholder has amazing M&A experience and we are currently exploring opportunities to leverage that experience and know-how in our operating model at Expondo. Keep your eyes open in 2022 for further news in this area!

How does an e-commerce company deal with competition from Amazon these days?

We see Amazon as a partner and not competition. As big and scary as the name sounds, they have their own internal innovation issues that they need to overcome in their own local markets. In the nearly one year since Amazon has opened its platform in Poland, we have actually seen our share of own shop sales increase. Amazon has issues with backend technology, and its product selection after one year is still very limited. Due to its household name, Amazon has driven traffic online which in the end has ended with transactions on our own shop.

We are doing a sizable double-digit percentage of our business through Amazon in which we plan to grow YoY by a double-digit percentage in the upcoming three years.

Where do you get your ideas for new products and product lines? Where do creative solutions at your company come from?

We are focusing on future trends of hobbyists and professionals in the area of a sustainable future. Any niche which is green, sustainable, and has a high total addressable market is where we focus.

Creative solutions in Expondo come from the people, not top management. We are often surveying, polling, and doing group work to come up with creative ideas for our products and processes. It is a very collaborative environment.

What does innovation mean in your business? Apart from new products, where else do you see room for innovation?

The hard truth about innovation is that it's one part creativity and one part discipline. Unfortunately, the creativity part of innovation gets all of the spotlight. It's

The hard truth about innovation is that it's one part creativity and one part discipline.

so cool to hear about a creative game-changing idea that we all think "I should've thought of that." In reality a lot of people probably did think of that idea, however they were unable to have the discipline to go out and do it. Go out and garner the resources, assess the risks, and drive it through to fruition. Discipline in our processes, constant pursuit of new ideas, and discipline about sticking to the framework of success: this is where real innovation happens.

Expondo expresses this through our "Get it Done" mindset which we drive into our daily business and you can see it in our values; we are "passionate can-doers." We celebrate people who live that spirit of not only having the creative idea but also being disciplined enough to go out there and make it happen!

Have the events of the past couple of years pushed a new way of thinking at your business?

The emphasis on diversity has been reinforced during the pandemic. Diversity of our product portfolio, but also the diversity in our thinking and geographical location of our people. In order to stay innovative we need to be open to new ideas from our staff and external partners. Achieving this requires a very diverse internal culture as well as people from diverse backgrounds.

We continue to drive diversity in our product portfolio by launching new categories that we believe are the future of sustainable hobbies, such as organic gardening and vertical horticulture. This will further deepen the diversity of our product portfolio resulting in a more balanced and risk-reduced global revenue stream. We have bolstered our category management team and product development in 2021 bringing in key players from around the market to drive new ideas and initiate change.

Now that you are a global company, do you find that different cultures value innovation differently?

I believe that despite being a global company with people located around the world working remotely, we don't need to change their local culture around innovation. What we are doing is building a unique Expondo culture that has parallel values around innovation which they can plug into and be a part of. As mentioned in a previous answer, one of our very first values is to have an "amplified focus on data," which is directly related to an area of innovation that we have the entire company focused on. In order to "win" against the competition we need to not only collect, understand, and amplify the customer data—we need to create a competitive advantage with it. We are doing that by driving that data-driven feedback directly into our product innovation and improvement cycle. In 2022 we have three specific projects in place to automate this process, making it even faster and limiting the human interaction to get the data from the customer into the products our customers have in their hands. ■

For further information on Expondo, contact Alexander Klemm: aklemm@clairfield.com.

Feeding the future

The European Green Deal: fundamental changes to combat climate change 28

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High-tech greenhouses and hydroponic tomatoes 35

HVAC leader invests in green solutions 38

Food is central to life and innovations in agriculture will be essential to feeding a growing population, but at what cost? Our interviews with an EU legislator and business leaders show different approaches to the contribution of agribusiness to climate change, and some very creative solutions.

The European Green Deal: fundamental changes to combat climate change

Q&A with Miroslav Toman, Czech agronomist, businessman, and diplomat

Miroslav Toman, the Minister of Agriculture of the Czech Republic from 2018 to 2021, is a Czech agronomist, businessman, and diplomat. He has played an instrumental role in the negotiations around the European Green Deal, the plan to make the EU carbon neutral by 2050.

On July 14, 2021, the European Commission adopted a set of proposals regarding EU climate, energy, transport and taxation policies aimed at reducing greenhouse gas emissions by at least 55% by 2030 compared to 1990. What impact will this have on the agricultural and food processing sector in Europe?

The impacts of the “Fit for 55” legislative package on the agriculture and food sectors as well as on other sectors such as forestry will mainly be indirect. The changes and extensions of the greenhouse gas emissions trading system proposed by the European Commission are likely to lead to higher prices of fossil fuels such as coal, natural gas, and diesel fuel. The cost of these fuels makes up a significant part of farmers’ and food producers’ variable costs. It will thus be necessary to anticipate either an increase in variable costs or significant investment into new technologies and vehicles. In both cases, the increased cost of food production will be reflected in food prices, or it will have to be covered by EU and national support.

Neither the new package nor the issued strategies were accompanied by the impact analyses that many countries, including the Czech Republic, asked for. The estimates that are available show that, in addition to rising food prices, there is also the risk of a decline in agricultural production.

Who will be the biggest driver of Green Deal enforcement, or who will be the most biased against

it—the European Commission, national governments, local or international companies, banks, or citizens?

The biggest drivers of the Green Deal are undoubtedly the governments of several ambitious EU member states, the European Parliament, the European Commission, a few corporations, several groups of citizens and also some non-governmental organizations. On the other hand, there are a number of EU member states and companies, citizens and NGOs that have criticized the Green Deal, especially in terms of the implementation of new European strategies, the possible negative impact on some sectors, and also the social impact.

Are there ideological conflicts among EU states in the design and adoption of the measures?

Of course. There are different starting conditions in each EU member state that must be reflected. The goals in the Green Deal are very ambitious. The Czech Republic is trying to find a common solution with the European institutions, which is often very difficult. It is obvious that not everyone can be completely satisfied. The main thing for the Czech Republic is the effort to maintain the competitiveness of the European agricultural and food sectors with the lowest possible administrative burden. For example, in the food sector it is proposed to introduce uniform nutrition labeling on all packaged products. The Czech Republic does not support the current proposal compared to the other EU member states, as it is misleading to consumers and, for example, does not take into account the portion of food consumed.

How will these measures affect the companies currently operating in the agricultural and food sectors?

Fundamentally. The European Commission has set requirements to reduce the use of pesticides by 50%, to leave 10% of arable land uncultivated, and so on. The pressure of retail chains on low food prices and increased demands on farmers in situations where less money is spent on the Common Agricultural Policy than before, is also playing an important role. Farmers and food producers will have to deal with all of this. In recent years, the Czech Republic has seen growing consumer interest in foods with higher quality standards, especially foods with minimal or no residue of crop protection products. People prefer fresh, local, and regional foods more than ever before in the modern era. As a result of this pressure from consumers, the requirements of food chains for food quality are also increasing, especially for fruit and vegetables. However, this repositioning of what is on offer can also pose a risk to the retail chains in the event of a reduction in consumer purchasing power.

Does the proposal envisage a certain set level of food production or self-sufficiency for individual states or is this a matter for national governments? Will the enormous amount of transportation of food and agricultural commodities across Europe end? Will the "Farm to Fork" strategy enforce production and consumption within one state or region?

The strategy talks about supporting regional and local food, but there is currently no known firm plan of support from the European Commission. In no case is it expected that the European Commission will issue a directive dictating what each country should produce and in what quantities. In its strategy, the European Commission has promised to support the reduction of dependence on long-distance transport through the creation of shorter supply chains. This means supporting so-called short supply chains and regional and local foods that have a lower carbon footprint. The Czech Republic agrees with this approach and is already supporting this direction today.

"The Czech Republic, with more than 15% of organically farmed land, is one of the countries with the most widespread organic farming in the EU. Countries such as Germany and France are at the level of 7.5% and countries such as Poland, Romania or the Netherlands are below 4%."

Will different measures be taken for each EU member country with regard to the structure of their agricultural production? After all, there are significant differences within individual member countries, for example, in average farm sizes, intensification of animal production, and so on.

The set of instruments adopted at the EU level will be uniform, but they must be broad enough to allow individual member countries to choose the measures that will allow them to achieve the Green Deal's objectives at lower costs while taking local conditions into account. With the goal of achieving 25% of agricultural area organically farmed by 2030 for example, the Czech Republic demands that the differences among individual member states be taken into account when assessing compliance with the targets. The Czech Republic, with more than 15% of organically farmed land, is one of the countries with the most widespread organic farming in the EU. Countries such as Germany and France are at the level of 7.5% and countries such as Poland, Romania or the Netherlands are below 4%. It should be a matter of priority that these countries will make the biggest effort to expand organic farming areas.

What financial budget is in place at the EU level to support the Green Deal? Are there studies that determine how many tons of emissions will be reduced in the food and agriculture sectors with the planned investments?

Achieving the Green Deal will be supported by a number of EU financial instruments. For the period 2021-2027, the EU budget for the Common Agricultural Policy is EUR 378.5 billion. In addition 30% of the EU's multi-annual budget (2021-2028) and the EU's NextGenerationEU (which is designed to support post-pandemic recovery) will be invested into green investments. Plus, the member countries must devote at least 37% of the funds they receive under the Recovery and Resilience Instrument to climate investment and reform (a total of EUR 672.5 billion), i.e., mainly from the National Recovery Plan.

> **"It will be very difficult ... to maintain the current price levels of food if energy prices are dramatically higher than in the previous years and other costs rise as well."**

In the agriculture and food industries, the primary goal is not to reduce greenhouse gas emissions, but to protect biodiversity and other environmental components (water, soil) by supporting organic farming and reducing the consumption of crop protection products and mineral nitrogen fertilizers. In the Czech Republic, it is the energy sector that has the main share of greenhouse gas emissions, and that is where the largest reduction in these emissions must take place. Greenhouse gas emissions from agriculture make up only about 6% of the Czech Republic's total national emissions, and this share is one of the lowest in the EU.

So far, there are no such studies, nor are the ways to achieve the planned goals defined. In addition, the implications of all the measures proposed by the European Commission are not known yet. The Czech Republic, together with other member states, called for the identification of individual impacts to ensure that the proposals submitted by the Commission would be effective and beneficial. Within the framework of the adopted strategies, several public consultations were announced for some projects (for example, on the proposal to reduce food waste), in which entities that are interested in or directly affected by the issue can contribute their opinions, suggestions, or comments. These will then be evaluated and will be one of the contributions to the overall impact assessment of the measures.

One perspective is the reduction of emissions and the other perspective may be the risk of rising food prices and agricultural commodity prices. Won't the consumer ultimately pay for the implementation of the new legislation in the form of rising food prices and increased national debt?

The European Commission proposals may significantly complicate business in the food industry and be a significant financial burden, although the strategies already aim to ensure that food produced in the most sustainable way will also be the cheapest. The financial impact on the sector will depend on the parameters of the individual measures, their scope, and in what time horizon they will be adopted. However, due to the establishment and compliance with the new requirements, food prices may increase even in a fundamental way.

Reducing food waste will help in part, but in my opinion, it will be very difficult, or rather impossible, to maintain the current price levels of food if energy prices are dramatically higher than in the previous years and other costs rise as well. After all, everybody is already seeing the effects of higher prices of gas and electricity on the finances of households and businesses.

What should entrepreneurs in the agriculture and food sectors prepare for over the next 10 years? How will their businesses be affected by decarbonization?

It will be a fundamental and multi-faceted change. They should prepare for the need to invest heavily in technology, transportation, marketing, and distribution chains. They should also prepare specific projects to reduce energy consumption, increase energy efficiency, and maybe find

Agricultural emissions and projected emissions by key EU member states

Sources: National emissions reported to the UNFCCC and to the EU Greenhouse Gas Monitoring Mechanism provided by European Environment Agency (EEA), Member States' greenhouse gas (GHG) emission projections provided by European Environment Agency (EEA) a way of producing energy from renewable sources. And last but not least, they should be actively interested in the possibility of supporting these investments and projects from new and existing European and national financial programs, such as the Modernization Fund or the Common Agricultural Policy strategic plan.

It will be essential that the EU does not remain alone in its efforts, the whole world must join in, otherwise the EU will lose its competitiveness.

Will current conditions be sufficient for companies affected by this strategy or will they have to invest significantly in innovation and new technologies?

Of course, in the future it will be necessary to innovate, no industry will avoid this. Czech farmers are constantly innovating their technology. Bear in mind that the development of new agricultural technology is not rapid, and technology evolves gradually. Of course, the new legislative requirements place increasing demands on farmers and the environmentally sound management of their farms. Should there be a major turnaround in a particular technology that would require the critical support of the Ministry of Agriculture, it must definitely be a subject of discussion. Next year, for example, it is expected that the European Commission will propose a revision of the directive on the sustainable use of pesticides, which will, among other things, address the wider application of precision agriculture—drones. The Ministry of Agriculture of the Czech Republic has long supported innovation and new technologies from European and national resources. From national resources, it is a subsidy program "Support for the processing of agricultural products and increasing the competitiveness of the food industry" and European support from the Rural Development Program called "Processing and marketing of agricultural products," which is a subsidy for investments in agricultural processing and marketing for small and medium enterprises.

Do you think that companies in the agriculture and food sectors are sufficiently innovative and can cope with new trends, including the upcoming Green Deal?

Some companies are very innovative and are already involved in producing energy from renewable sources for their own consumption, for example, or publicizing the carbon footprint of their products. Others have not dealt with it yet. However, it can be expected that if the new legislative framework is adopted and current trends are confirmed, these companies will also have to pay more attention to innovation. In the food sector, technological equipment innovation is the main issue. It should be noted that some products can only be produced by certain specific production methods. So, innovate yes, but not where it is not possible or unnecessary.

How do you personally perceive the planned structure of the Green Deal? Are there any measures that you would supplement or remove?

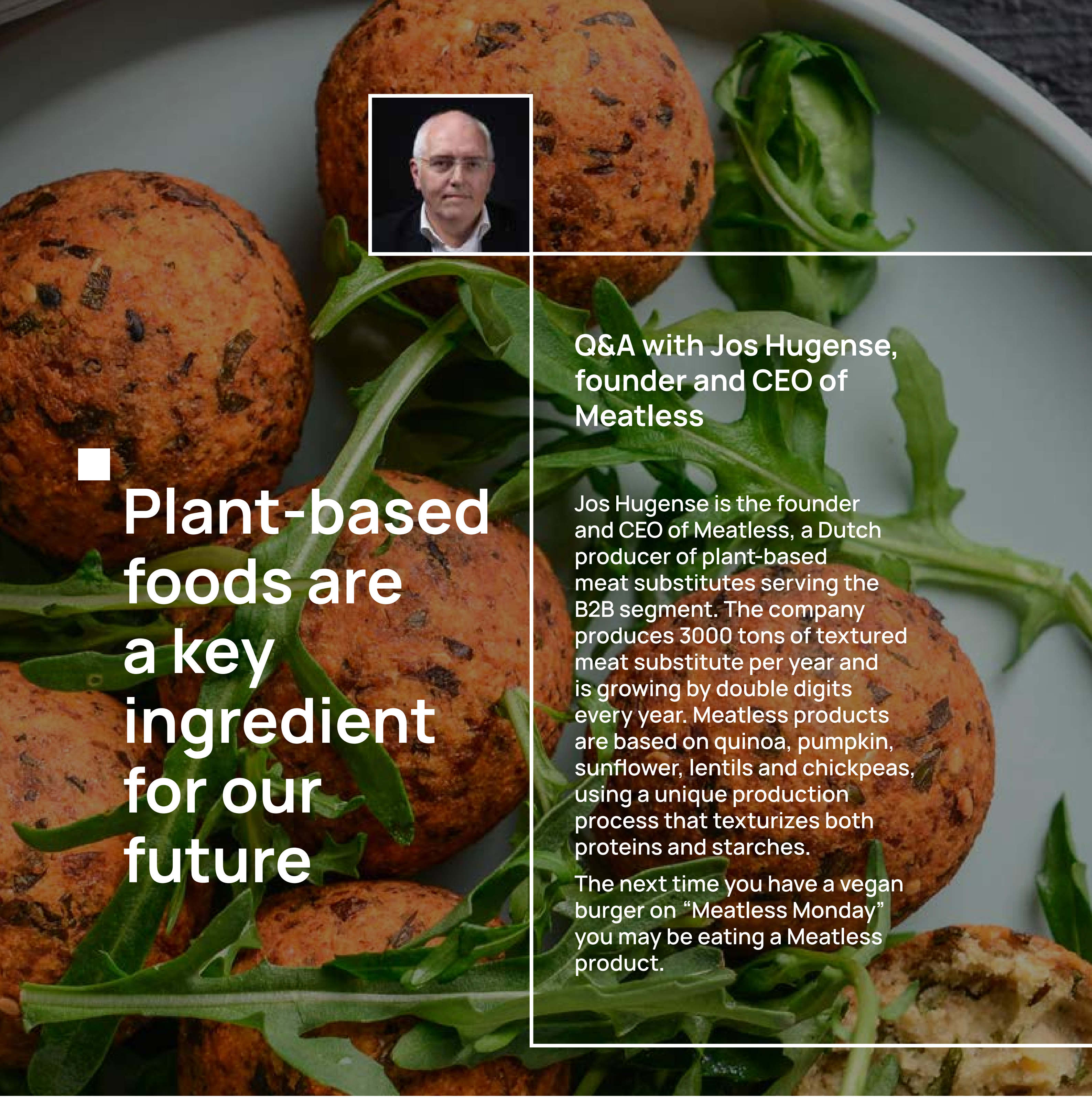
I see the need to combat climate change and protect the environment as important. However, the individual steps leading to this goal must be realistically set and on the basis of expert analyses and analyses of the financial impact of individual measures that we consider a necessary precondition for the implementation of any new strategy. Maintaining the competitiveness of European agriculture, fisheries, and food is absolutely crucial for the Czech Republic. The achievement of the objectives will be conditional on the introduction of new technologies, which will require substantial investment both in the technology itself and in the training of staff. I see some of the goals set by the Green Deal strategy, such as the goal of achieving 25% of agricultural land in organic farming, as very ambitious and setting great demands on funding to ensure that they are achieved. In terms of measures to reduce greenhouse gas emissions in agriculture, the processing of agricultural residues and biodegradable waste in biogas plants has been proven to work in the Czech Republic. The Common Agricultural Policy strategic plan is now preparing support for agroforestry, which should contribute not only to soil protection and biodiversity, but also to the long-term storage of carbon in the soil in the form of organic soil as part of so-called carbon agriculture, a new concept of the European Commission to reduce emissions of greenhouse gases.

"In the food sector, technological equipment innovation is the main issue."

I understand the need for the EU to be a world leader in the field of climate change, but I would like greater communication between European officials and member states, as well as among farmers, food producers, foresters, and fishermen. Only in this way will the proposals be feasible in practice.

Without fluid communication among all stakeholders, we risk building our own barriers in our processes and production chains. ■

For further information on agribusiness and the European Green Deal, contact Milan Bílek: mbilek@clairfield.com.



Plant-based foods are a key ingredient for our future

Q&A with Jos Hugense, founder and CEO of Meatless

Jos Hugense is the founder and CEO of Meatless, a Dutch producer of plant-based meat substitutes serving the B2B segment. The company produces 3000 tons of textured meat substitute per year and is growing by double digits every year. Meatless products are based on quinoa, pumpkin, sunflower, lentils and chickpeas, using a unique production process that texturizes both proteins and starches.

The next time you have a vegan burger on "Meatless Monday" you may be eating a Meatless product.

Meatless produces innovative textured plant-based ingredients as fish and meat substitutes for the large food-processing industry worldwide. This seems like an area that is poised for huge growth. Tell us what you're seeing from inside the sector.

In the past several years we have seen huge growth in the plant-based sector, in both dairy and meat substitution. A third promising market, fish substitution, is now evolving and fast growing. In Germany alone, sales of fish substitutes increased over 600% in the past two years. Recently Bloomberg predicted that the plant-based alternative market might grow from just under USD 30 billion in 2020 to USD 162 billion in 2030, an eight-fold increase in just a decade, reaching 7.7% of the total human consumption of proteins. Bloomberg bases its forecast on the success story of plant-based milk, which has entered the mainstream.

In 2030 the world population will hit 8.5 billion, a fact that will force the market to look seriously at efficient plant-based alternatives, if only for food sufficiency. We know that consumers today are motivated by concerns about both health and sustainability.

So, yes, the market, though still niche, is growing exponentially with promising outlooks all over the world.

Meatless was founded in 2005. How have your customers changed over the years?

The plant-based food segment evolved from a niche market growing at a steady clip to a huge business with exponential growth. Though not unexpected, the rate of relative growth at this moment is tremendous and never seen before in the food industry. In countries such as the UK and the Netherlands, 2020 growth was over 25%. In the past decade and a half, companies in this field transformed from pioneering ventures, or smaller departments within larger companies, to professional production companies that deliver large volumes of vegetarian and vegan consumer products for distribution in supermarkets and quick-service restaurants. Plant-based is now taken very seriously in the food business, whereas in 2005 it was seen as a very small niche for a limited number of consumers.

Curiously enough, Meatless began as an offshoot of a meat-processing company. How did your knowledge transfer from meat to vegetarian products?

Actually the knowledge to develop plant-based consumer products is similar to meat processing. Lots of rare and highly technical meat-processing know-how is applicable to the technology we now use for plant-based products. To give an example, we re-invented the production of vegan sausage for a number of customers using the same techniques used in the meat industry. The core of our product is a special plant fiber, and we discovered the process to produce it at one of the big sugar companies. We refined that technique into the Meatless concept using our experience in meat-processing technology.

How much demand do you see today from your former colleagues in the traditional meat-and-fish-based market for innovative solutions and for a change towards sustainability?

It is very clear that a shift is slowly occurring in the western world from animal-based protein towards more plant-based products. At the moment in countries like the Netherlands, Canada, and the UK, we have five times as many vegetarians under 35 years of age as over 35 years of age.

Large meat, dairy, and fish producers recognize that trend and want to get involved in the alternative markets as it threatens the growth of their business. In the past five years, plant-based was growing fast and that growth is expected to continue. So, a large number of the big meat and fish companies is integrating plant-based in their activities, which from a business perspective is a logical and sensible thing.

According to the United Nations, over 85% of the world's marine fish stocks are now fully exploited, overexploited, or depleted. More and more we realize that sustainable food production is not only an environmental issue, but also a matter of sufficiency.

Scarcity and the cost price mechanism will force everyone in the food sector to produce more product using less resources and the start of all food production—plants—will play an essential role in this quest for a better diet.

Where do your new ideas come from? Do you have a team dedicated solely to innovation?

We have an R&D team of two, closely cooperating with five people in sales who translate customer requirements to R&D. Meatless is R&D-driven: we re-invented mimicking whitefish back in 2013, and we have created lots of new techniques and ideas such as tuna and sausage substitutes, as well as new varieties in the textured product. It's a creative and not always structural process in which we give our people the freedom to think and try new things. This process leads to surprising and sometimes brilliant new products in the market.

> **“The plant-based food segment evolved from a niche market growing at a steady clip to a huge business with exponential growth.”**

To facilitate the R&D team and future expansion of R&D activities within the company, a spacious new test center is currently being built, including equipment similar to that in use by our customers. It will support a professional approach to product development for customers using Meatless products in their processes and gives us the ability to do professional bench testing of new innovative concepts.

We are convinced that a next stage of development will target lower cost prices and competitiveness in the market, a new challenge for plant-based food.

How much research and testing lies behind introducing new products, such as those currently under development, made of pumpkin or kidney beans?

The lead time for new products differs, but usually from idea to high-volume production, we are talking years. The development of fava started in 2017, and the first high-volume production contracts begin in 2022. Certainly, when it's necessary to test different crops, it can take a long time before we have the exact raw material we want. However, we are convinced that the investment is worth it, as bringing more variety to this business is key to success in the future.

Can “high-tech” and “ecological” go hand-in-hand?

The market now places a premium on minimally-processed products, which is important. At Meatless we have always sought the most efficient way to produce, using as few resources as possible. Ecological is not just organic or “natural,” it's also about reducing resources used per kilo of product. We are proud that Meatless is the most efficient plant-based textured product available and we have the lowest footprint per kilo of product in the business. We use whole foods, do not separate proteins, and use gentle processes and seaweed extracts to bind our product.

Is it high-tech? We don't think of ourselves that way. It is a technique to prepare food, in the same way you boil an egg or make a sauce.

What was the impact of the pandemic on your business?

We had growth in 2021 of over 60% so in terms of revenues, there was no negative impact whatsoever. However for R&D, it has been a challenge not to be able to travel and test new products together with the R&D teams of our customers all over the world. It is still a handicap to not be on the spot to assist customers with development and scaling up of production of consumer products. We have made the best of communication technologies that are now the norm, but we really look forward to the day we can visit our customers in person again.

Do you take sustainability into consideration in your supply chain, packaging, and other processes?

Yes, we do. For example, we bulk pack. Our packaging is functional and cannot be easily altered, but we also look closely at things like sustainable transport. We are in the process of introducing renewable energy into the company. Within 10 years we aim for a reduction of 35% greenhouse gases per kilo of Meatless product. The program to do that is in place and will be carried out in the next few years.

Sustainability is a constant process and we all must take a critical look at ourselves, even an innovative company such as ours. ■

Clairfield has advised Meatless since its founding in 2005. For more information on Meatless or alternative foods, contact Frank de Lange: fdelange@clairfield.com.

High-tech greenhouses and hydroponic tomatoes

Florian Gostner

Daniela Gostner

Q&A with Florian Gostner and Daniela Gostner

Florian Gostner is CEO of Fri-El Green House, a subsidiary of Fri-El Group, one of Italy's main producers of renewable energy. Florian was previously CEO of Fri-El Biogas Holding before creating Green House, a 100% innovative business.

Daniela Gostner is CFO of Fri-El Green House.

Fri-El Green House grows hydroponic tomatoes under the brand name H2Orto using heat energy that is a byproduct of the Fri-El Group biogas plants. The company produces 20,000 tons of vine, cocktail, and cherry tomatoes a year, and serves the major Italian supermarket chains.

Fri-El Group is a producer of energy from renewable sources. That in itself is a sustainable and innovative goal. On top of that, a branch of the Gostner family now supports high-tech greenhouses. Can you tell us more about the background of the Green House project and the inspiration behind this innovation?

The Gostner family were pioneers in renewable energy, founding the precursor to Fri-El in 1994. So we really know the renewable business inside and out. The Fri-El Green House business was started by the second generation of our family in 2016. At that time Fri-El was operating more than 22 biogas plants, each producing 999 kW of energy. The idea was to recuperate the wasted heat energy from these biogas plants. Our original plan was to build a greenhouse of one or one-and-a-half hectares next to each biogas plant, but ultimately we decided to make one large investment in the Ostellato location. We saw the huge potential of the site as it offers extensive gas lines, high voltage power lines, a lot of space for future expansion, and geothermal heat to run the greenhouse with 100% renewable energy.

In just a few years Fri-El Green House has become an important producer of greenhouse tomatoes, grown with a hydroponic system that has minimal environmental impact, without polluting the ground or groundwater. Moreover, using hot water, which is a byproduct of the biogas plant, and thanks to the LED lighting system, the company is able to produce tomatoes throughout the year.

What are some of the innovations you've incorporated into operations at the Fri-El greenhouses?

The main innovation we've incorporated in the project was the use of 100% artificial light using LED technology. The technology was the result of a research project we performed together with the University of Bologna to develop a lamp which was ideal in terms of efficiency and light frequency in our climate circumstances. We now have 220 km of these LED lights running through our greenhouses, which is key especially in the winter months.

We also have a high-efficiency co-generation with a CO_2 recovery system, which purifies the exhaust gas to introduce it into the production cycle of the plants, stimulating their growth.

Furthermore, we have a control system that controls the climate in the greenhouse and monitors plant growth. Finally we have a highly automated warehouse with a tracking system to reconstruct the path of each harvested fruit back to seedling.

Can "high-tech" and "ecological" go hand-in-hand?

In our case "high tech" features are used to improve "ecological" aspects. To list just some examples:

- We use a system to recover and store rainwater that allows us to use 30% less water than traditional cultivation.
- We reuse drain water from the plants after purifying the water with UV technology, which permits a further reduction of 30% in water use compared to conventional growing.
- Our latest-generation LED technology reduces energy consumption by more than 60% compared to traditional sodium lamps.
- In the near future we will use 100% geothermal power instead of gas for heating and lighting the greenhouse.

Are new processes and procedures something you look at in your business regularly?

We constantly improve processes and procedures, especially in the post-harvest phase to improve labor efficiency. Specifically we have implemented automatic loading and unloading of harvesting trolleys as well as automatic feeding of packing lines and custom storage-management software to optimize internal logistics and monitor packing productivity.

In 2019, you received the Responsible Innovators award of the Emilia-Romagna region. Does your future strategy include new research and ways of optimization of the current concept? And if so, are you thinking about the responsible side, or the innovation side, or both?

Our future strategy includes, of course, ways to optimize the current concept. The biggest challenge is the optimization of energy use, or rather, the use of renewable energy to produce electricity for the lamps and heating in an economically and ecologically sustainable way. The

outcome of this is the reduction of CO2 emissions. Our goal is to transform the company into a completely carbon-neutral entity in terms of energy production by 2025.

Has the pandemic pushed a new way of thinking at your business?

Yes, the pandemic impelled us to find a more sustainable solution regarding energy resources. Furthermore, the recent increase in energy prices to a level that is no longer sustainable for companies has made the search for energy solutions more urgent than ever.

How do you see the future of circular economy? Any major changes to be expected in the next two to four years?

The reuse of material in general will become more and more important and the circular economy will become fundamental to make businesses profitable. Every year we try to find new solutions to reduce the waste of materials and to push towards ecological and reusable material to lower the environmental impact of our production.

In our case, this has meant using recyclable packaging, using beneficial insects, avoiding waste of water by recovering rainwater, and finding a solution to reuse or compost the plants at the end of the production cycle.

What can you tell us about the financials of Fri-El Green House? Is it possible to have a profitable business using this model or must the incentives be other than economic?

In the long term, the implementation of proven technologies that increase production capacity and reduce environmental impact will be profitable even without subsidies. Obviously, the research and development of these technologies have significant investment costs that are not always paid back immediately and for this reason the companies should be encouraged by public administrations.

In the specific case of hydroponics, to be profitable without incentives it is necessary to optimize the level of technology, agronomic know-how, and commercial capabilities. We were able to draw on technological expertise from Fri-El's 25 years of renewable energy experience.

We also gained some hydroponic knowledge from advisors from the Netherlands, but the climate in our region is very different to the Dutch climate. Many important aspects were basically experimentation and learning by doing.

To reach the commercial goals we invested in personnel to create a solid sales network.

I think the model can be adopted more widely in Italy. The Netherlands has thousands of hectares and a huge amount of exports. In Italy we have better conditions in terms of climate, labor, and market conditions. A possible challenge is the complexity of this business, since it is capital, labor, and technology intensive.

Emilia-Romagna is famous for its gastronomy. What has been the feedback from foodies on H2Orto tomatoes?

Our clients appreciate the taste first and foremost, and then our sustainable production methods. Other additional values of our vegetables are the nickel-free certification and food safety since we work in a controlled environment and apply strict hygiene protocols and integrated pest management. Therefore, our products are appreciated not only in the high-gastronomy arena, but also in high-volume supermarkets. The path for the future is for sustainably produced food to be served on every table. ■

For more information on Fri-El, contact head of Clairfield's energy sector group Marino Marchi: mmarchi@clairfield.com.

Timo Tauber

Arthur Sturm

HVAC leader invests in green solutions

Q&A with Timo Tauber and Arthur Sturm, the M&A team at Viessmann Invest

The Viessmann Group is a world leader in the manufacture of heating, industrial, and refrigeration systems. The company was founded in 1917 and remains a family-led business after four generations. Today the Viessmann Group has over EUR 2.8 billion in revenues with 13,000 employees, and production sites, distributors, and sales offices throughout the world.

As part of its "Leap to Net Zero" strategy, in 2021 Viessmann invested in Priva, a smart building and green-tech solutions company. Priva develops hardware, software, and services in the field of climate control, energy efficiency, and optimal reuse of water. Its products are used in greenhouses, urban farming, and indoor growing environments such as offices, public buildings, retail, hotels, healthcare settings, and museums.

The huge success of Viessmann Group is not the only story. The latest generation has recognized the leadership role it can play in combatting climate change. Today Viessmann aims to make sustainable heating, ventilation, and cooling solutions accessible to everyone, as well as to make its own manufacturing process carbon neutral.

Viessmann, with a long history in climate solutions, recently invested in Priva, a process-automation specialist in vertical farming. Priva isn't the typical Viessmann investment. What drives Viessmann to invest in innovative businesses?

The HVAC industry, and thus the greater energy sector, is undergoing a massive paradigm shift. As a society, but also as a company, we are distancing ourselves from fossil fuels and are switching to renewable energy sources and sustainable electricity. For example, regulatory changes in many countries have prohibited or will soon ban oil-and-gas-based HVAC solutions.

In the past, Viessmann was a product manufacturer. With our corporate vision "we create living spaces for generations to come," the objective is to provide sustainable seamlessly-integrated climate solutions and a corresponding (digital) service offering for the residential and commercial space.

To become an integrated climate solution provider, it is not enough to sell only products that are CO2 neutral. Products need to be intelligently integrated using IoT and a networking cloud. To achieve integration, one needs building automation, a higher-level system that intelligently networks and controls the various products in a building to ensure the highest level of energy efficiency, lowest cost level, and minimal environmental impact.

The Viessmann Group is heavily invested in the HVAC industry and is constantly looking to diversify its asset base, both geographically, meaning outside of Europe and the DACH region, and also via segments that are related to the core business and pose expansion opportunities.

How does your investment in Priva address these trends and drivers?

From a bird's-eye perspective, Priva is a process automation specialist that has been very successful in applying its expertise and knowledge to the two verticals of horticulture and building automation.

The investment in Priva has two strategic benefits. On the one hand, Priva's building-automation business segment enables access to building-automation know-how and products that do not need to be developed in-house. This is in line with the notion that it is not sufficient to sell products that are CO2 neutral, but that we also need to move forward to become an integrated solution provider. This is a recurring theme in all of Viessmann's transactions.

On the other hand, Priva is the world market leader for climate control in vertical farming and aims to diversify Viessmann's business operations. Vertical farming is not a core business segment of Viessmann, but vertical farming is another facet of climate solutions in a new and exciting industry, which aligns with Viessmann's vision of sustainable living spaces for generations to come. The horticulture and vertical farming segment is interesting as an attractive growth market and addresses the global questions of how future food can be produced in a climate-neutral and energy-efficient way.

Ultimately the investment of Viessmann in Priva not only anticipates an expansion of our core business by accessing building automation, but also serves as a diversification strategy. However, investments of Viessmann Invest will continue to be oriented around Viessmann's core business.

Has the pandemic forced a new way of thinking at your business?

The Viessmann Group has been fortunate enough to make it through the Covid pandemic very well. Of course, we had the pleasure of introducing remote working for our employees, with only the critical production remaining on-site under strict hygienic conditions. At first it was a shock, but it soon became evident that the pandemic was an opportunity for the core business of the Group, including from an M&A perspective. The pandemic has also shown that some industries and segments, such as the HVAC industry, can be highly crisis-resistant. Thus, the Covid pandemic has served as an accelerator for our activities, specifically in the areas of climate efficiency, CO2 neutrality, and regulation. This is also seen in the deal landscape, as we closed eight transactions in 2021.

In general, the HVAC industry has experienced rapid development over the past two years. Ventilation plays a critical and central role in healthy indoor spaces. For example, going forward every real estate developer will make sure that filters and sufficient airflow are in place to enable on-site working despite a pandemic situation.

Are new processes and procedures something you look at in your business regularly? How does Viessmann tackle the proposition of becoming an integrated climate solution provider?

The megatrend of climate change is a key industry driver and is a catalyst for change in our business processes. With global building stock accounting for approximately 40% of global CO2 emissions, which is more than the emissions from cars and planes combined, it is of utmost importance that newly installed products are CO2 neutral. Large amounts of capital are being invested to retrofit current building stock with climate-neutral solutions, especially now that people are spending more time at home. This has also increased the regulatory requirements for products in the residential sector. This is something we look at regularly and intensely in our line of business.

Even before the COVID pandemic, it was Viessmann's objective to become an integrated solution provider, from design and build to product manufacture to installation and maintenance. The pandemic has demonstrated that end-customers prefer one point of contact, rather than multiple parties that offer different services.

> “Vertical farming is not a core business segment, but it is another facet of climate solutions in a new and exciting industry, which aligns with Viessmann's vision of sustainable living spaces for generations to come.”

Do you think unions of traditional industrial businesses with innovative green businesses are something that we can expect to see more of?

Absolutely! Companies that are not actively positioning themselves in a sustainable manner and looking at innovative solutions are setting themselves up for failure in the medium to long term. In our industry, everybody that bets on outdated fossil fuels, such as oil and natural gas, will disappear from the competitive landscape. One need only look to the automotive industry as a reference.

The Viessmann Group started discussing innovative solutions for its business operations back in 2016/2017, when there were only a handful of companies actively addressing the climate impact of their business operations. The future will see a combination of different solutions and innovative technologies to address climate change, rather than a single technology to govern everything.

Viessmann is actively positioning itself in a manner that is sustainable. For example, a couple of years back, Viessmann had the opportunity to invest/acquire several large natural gas-based product manufacturers but decided to pass on the opportunity. It would be unthinkable to invest in such companies today. The only reason Viessmann offers natural gas-based solutions today, and will continue to do so in the future, is because we as manufacturers are already able to operate them based on hydrogen.

Looking at the urgency of climate change and the Viessmann heritage of embracing innovation for a better future, we are happy to be positioned as leaders in the industry and the business world in seeking and implementing green solutions for our company and customers. ■

For more information on Viessmann, contact head of Clairfield's industrials sector group Albert Schander: aschander@clairfield.com.

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Clairfield's industry expertise in six strategic sector verticals demonstrates the understanding of value drivers and financial expectations, and is crucial for quick access to global and local players. We also highlight our growing practice in debt and capital advisory.

Business services insights

SECTOR HEAD

Angus Russell
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Stable activity in the sector shows that outsourcing trends continue.

While there are a variety of business models within the business services sector, in general it proved to be resilient in 2021, reflecting high levels of recurring revenue, strong future order books, and revenues being underpinned by non-discretionary and critical services. This performance has meant that business services assets are regarded as safer havens and, therefore, reduce investors' risk exposure in turbulent times. In addition, the sector continues to benefit from clients' continuing to outsource non-core activities.

We expect the following three key trends to continue in 2022:

- Further divestment of non-core assets—the pandemic has encouraged both small companies and large corporates to focus on their core service offerings and adopt a strategic focus.
- Increased appetite for technology-driven business service assets.
- Greater volumes of consolidation (there is a strong cross-selling opportunity between services assets, particularly in industries with low margins and a reliance on scale to generate sufficient margins).

An area that has exhibited particularly high M&A activity has been the recruitment industry, driven by the reactivation of the job market and the "big quit." Financial sponsors have been active accounting for some 46% of deals.

In our own practice we have noted increased activity in testing & inspection and services related to digitalization. Recent large deals have shown that the private jet industry, another area of focus for Clairifeld, is more resilient to Covid than the commerical flight industry.

Deal spotlight

kiwa was sold to SHV

Sale of Dutch TIC leader to investors

Trusted advisor to client growing from EUR 20 to 600 million turnover

Kiwa, founded in 1948, is an independent global company in testing, inspection and certification (TIC). Kiwa works in a wide variety of market segments, ranging from drinking water, energy, construction, and healthcare to food, feed & farm, and medical & pharma. Kiwa employs over 5,500 people in offices in more than 35 countries across Europe, Asia-Pacific, North and Latin America.

SHV is an investment firm that is active in 64 countries with over 51,000 employees. SHV companies focus on energy distribution, cash-and-carry wholesale, heavy lifting and transport, industrial services, animal feed and aquafeed, oil & gas, and private equity (NPM Capital).

With SHV, Kiwa found a new shareholder with a well-known culture that will invest in accelerating its growth, while SHV further diversifies its portfolio with the acquisition.

Clairfield International was first introduced to Kiwa when advising Gastec in its sale to Kiwa in 2005. We became the company's trusted advisor in Kiwa's carve-out from 13 Dutch drinking water companies in the same year. In the years that followed, Clairfield advised Kiwa in separating its commercial TIC activities from research activities; the sale of Kiwa to ABN AMRO Participations; and implementing Kiwa's consecutive refinancing and buy-and-build strategy. After advising Kiwa in its sale to NPM Capital in 2011, we assisted the company in further optimizing its activity portfolio, including the divestment of the Shield Group in 2019.

After partnering with Kiwa in its trajectory from EUR 20 to 600 million turnover, Clairfield acted as lead advisor in its sale to SHV, which will support the company in its growth path towards EUR 2 billion in sales.

Other transactions in testing, inspection & certification

FRANCE/BRAZIL
Trescal acquired GERO and MEC-Q

GERMANY
Tentamus acquired BLS analytik

UK/FRANCE
CORREL Rail Limited was sold to SGS

NETHERLANDS
TNO innovation for life was sold to FDI

Selected subsectors

Customs services

ITALY/NETHERLANDS/GERMANY
SERNAV was sold to Customs Support a portfolio company of Castik Capital

NETHERLANDS/UK
Customs Support acquired UK Customs Solutions Limited

NETHERLANDS/ITALY
Customs Support acquired Mollica S.r.l. Macc S.r.l.

NETHERLANDS/SWEDEN
Customs Support acquired Tullxperten

Business transformation

AUSTRIA/FINLAND
TIPCO was sold to Nomentia

US
Cumberland Group completed a buyout led by existing management

GERMANY/FRANCE
devoteam acquired Alegri

NORWAY/SWEDEN
TECHSTEP Making work mobile acquired optidev TrueMobile Solutions

Consumer & retail insights

SECTOR HEADS


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Home consumption is driving consumer M&A to record levels.

Crossborder interest, a huge amount of liquidity, and stellar returns for food companies are all anticipated to push activity levels to a record high in 2022. Large trade acquirors are expanding their product portfolios through the acquisition of high-performing smaller brands and companies as well as distressed businesses that need a turnaround solution. There is significant competition among private equity buyers for high quality food & beverage businesses operating in growing and resilient subsectors, which is driving up multiples. International M&A remains at a high level.

Work-from-home, work-out-at-home, and doing-everything-at-home are driving several consumer trends from the highs of the snacking sector to the lows of hospitality. Consumer products for use at or out of home such as exercise bikes and other gym equipment, games, crafts, and DIY materials are on the rise.

Other trends we note:

- As retail opens up, the direct-to-consumer market, which saw accelerated growth over the last five years and especially throughout the pandemic, is experiencing a channel shift.
- Amazon remains a force to be reckoned with.
- M&A activity within the plant based sector continues to grow as larger plant-based corporates both in the UK and overseas seek to expand their portfolio and companies operating in other sub sectors look to enter the market via acquisition. We expect this trend to continue into 2022 with companies operating in the meat sector likely to consider diversification in light of market trends and growing demand for plant based products.
- The pet food sector shows resilience as the market reflects an increase in pet ownership and focus on natural and high-quality food.
- Multichannel retail is the future for all players including independent shops and farm stores. D2C is a must.
- ESG considerations are affecting strategic decisions as well as consumer decisions as companies seek ethical sourcing and green credibility.
- Vertical farming and controlled atmospheres are a huge innovation in the industry, as highlighted in our client interviews in this publication. See page 26.

Deal spotlight

TRANSGOURMET acquired for EUR 200 million GM FOOD IBERICA

Foodservice acquisition from Chinese group

One of the largest recent food wholesale and retail transactions in Spain

Clairfield International acted as financial advisor to Transgourmet on its acquisition of GM Foods from Chinese companies Bright Food Group (72%), JIC Investment (18%), and Group Donghuatong (10%). Bright Food International of Shanghai, China is listed on the Shanghai stock exchange and JIC Investment is a Chinese state-controlled entity.

GM Foods was founded in 1950 as Miquel Alimentació in Vilamalla (Girona). The company operates 72 Cash & Carry throughout Spain with 3,400 retail points of sale managed through franchise agreements under the Suma, Spar, and Proxim brands. The company has over 2,500 employees.

Transgourmet is Swiss-based wholesaler of food products operating both the cash & carry and foodservice formats. Transgourmet is the 2nd largest cash & carry and supplies wholesale operator in Europe with a presence in Switzerland, Germany, France, Poland, Austria, Rumania, Hungary, and Russia. In 2020 Transgourmet had revenues over EUR 8.5 billion. It is part of the CHF 30.5 billion Coop Group based in Switzerland.

The opportunity was originated by Clairfield. We advised on bidding strategy to closing in a highly competitive auction process including due diligence, valuation, bidding strategy, drafting of offers, and SPA negotiation.

The transaction concludes a successful five-year ownership by the Chinese, having transformed GM Foods from a EUR 890 million revenue company in 2015 to around EUR 1.2 billion in 2020. With the transaction Transgourment enters the Spanish market in a leading position.

Other transactions in foodservice & retail

BRAZIL — Boa Supermercados was sold to PATRIA

FRANCE — Rolmer was sold to FRENCHFOODCAPITAL

UK/NETHERLANDS — jupiter acquired CoolFresh International

FINLAND/NORWAY — FORT DELI was sold to Orkla

Selected subsectors

Apparel

ITALY — LIMONTA sold 25% to T.I.P.

MEXICO/SWITZERLAND — VICKY FORM was sold to the shareholders of zentrix

NORWAY — MINIMEIS Advisor to Minimeis in connection with its private placement

BRAZIL — gri.Ga. was sold to enjoei

E-commerce

GERMANY/POLAND/FRANCE — expondo sold a minority stake to Crédit Mutuel

NETHERLANDS — PROFORTO raised financing from nobel capital for change

FRANCE — amsterdam air was sold to NOTUS

UK — MAKE MY BLINDS was sold to MZURI

Energy, cleantech & resources insights

SECTOR HEADS

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Renewable outlook is solid thanks to growing climate change awareness and favorable pricing.

The transition to a more sustainable and clean energy market has significantly progressed in the past two decades, and the outlook for the renewables industry remains solid for the coming years thanks to several factors. The renewed and even enhanced commitments from the member states of the Paris Agreement towards the limitation of global warming to 1.5° by 2050 were recently reassessed and confirmed by the G20 and through several Conferences of the Parties. ESG criteria is penetrating at different levels (policy makers, regulators, financial markets, citizens and consumers, and industries). Significant technological improvements have made renewable energy sources the cheapest energy worldwide, especially against the most recent rally in traditional commodities. Lastly, the debt market supports this activity with relatively low interest rates and increasing availability of diversified financial sources.

M&A will remain robust, driven by the following trends:

- Progressive electrification of consumption.
- Favorable regulatory frameworks at country levels.
- Additional ramp-up in the RES annual capacity installation and phase-out of older thermoelectric assets.
- Penetration of new technologies (hydrogen, storage, hybrid systems) and new energy models (power purchase agreements, energy management, services, network balancing, capacity payments).
- Market concentration at the progressive expiry of incentives frameworks.
- Additional portfolio rotation into stocks with high energy and ESG standards.
- Sustained valuations for players in the sector.

Deal spotlight

caprari
pumping power
sold a majority stake to
AMBIENTA
leading to the incorporation of Wateralia

Energy efficiency attracts sustainability-focused private equity

Clairfield advises Caprari Group on the sale of a majority stake to Ambienta SGR

Founded in 1945 by Amadi Caprari in Emilia Romagna, Caprari Group manufactures and services energy-efficient pumps and motors for integrated water cycle management. Its products directly contribute to protecting crops from draught and increasing yield as well as collecting and treating wastewater. Caprari Group has three production facilities—in Italy (Modena and Rubiera) and Turkey (Konya)—and 10 international subsidiaries. In recent years this family-owned company generated EUR 100 million in revenues and approximately EUR 10 million of EBITDA.

Operating out of Milan, London, Paris, and Munich, Ambienta is one of Europe's largest and most experienced sustainability investors. The firm was founded in 2007 and currently manages more than EUR 1.5 billion of assets. Ambienta SGR is its fund that invests in sustainability-focused Italian companies. Ambienta uses its proprietary methodology, the Environmental Impact Analysis, to assess its portfolio companies' sustainability metrics.

Ambienta acquired the majority of Caprari through a buyout transaction. With the investment in Caprari, Ambienta created Wateralia, a platform for the consolidation of the water solutions sector through M&A. Wateralia is controlled by Ambienta and the Caprari family holds a significant minority interest. This operation was financed by a sustainability-linked loan (SLL), which will allow the group to benefit from a reduction in the cost of financing upon the achievement of predetermined ESG and sustainability objectives.

Other transactions in innovative technologies

AUSTRALIA
erm POWER
invested in
alliance automation

NETHERLANDS
FASTNED
acquired
MisterGreen
FAST CHARGING NETWORK

FRANCE/UK
SICAME Group
backed by
EQUISTONE
acquired
boddingtons electrical ltd

NETHERLANDS
EALYZE
was sold to
NPM CAPITAL

Selected subsectors

- Recycling

NETHERLANDS
KARGRO
Worldwide in casings
was acquired by management in an MBO

FRANCE
Management & naxicap
sold a majority stake in
2B ENVIRONNEMENT
to
CAPITAL EXPORT
Garibaldi Participations
Capital Développement

DENMARK/GERMANY
M. LARSEN
Vognmandsfirma A/S
sold a majority stake to
REMONDIS

- Renewable energy

ITALY/US
CONVERT
ITALIA SPA
was sold to
valmont

FINLAND
POHJOLAN ENERGIA
was sold to
MB Funds

FRANCE/AFRICA/JAPAN
BBOXX
raised USD 50m from
Mitsubishi Corporation

NETHERLANDS
INNAX
acquired
Technion

Healthcare insights

SECTOR HEAD

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Medtech innovation drives frothy healthcare market despite Covid roadblocks.

Aside from a few tranquil islands of extraordinary opportunity such as consumables, vaccines, respirators, etc., 2020 dragged down overall healthcare volume by almost 40%. The healthcare snap-back of 2021, looks to close at record levels only exceeded by frothy record year 2019. Relatively easy government infrastructure spending and insatiable PE appetite for any form of secure, reimbursable cash flows, have bid up exotic areas such as biopharma, but it is the rationalization of the healthcare service sector itself that has truly captured PE attention, and with good reason. Whether a dental, urology, radiology, or cosmetic surgery clinic, private equity sees a vast market to find, consolidate, and exploit synergies.

The US remains the most fertile healthcare market by far and continues to drive global statistics. Mega-deals in excess of USD 5 billion in value made up 42% of 2021 deal value, and were also, for the most part, PE driven. The largest transaction of the year was the USD 34 billion sale of Medline to a PE consortium led by Carlyle. Medline, one of the largest medical supply manufacturers in the US, is reported to be the largest leveraged buyout since the financial crisis. Note that Medline provides a broad array of consumable and OEM medical products, and as such throws off predictable, stable cashflows that can be further optimized via digitalization. In 2021, EBITDA multiples from 12-15X were the norm with historically high leverage levels.

At the other extreme of the market, a flurry of SPACs searching for quick wins largely via biotech and drug development opportunities, will be interesting to watch as many of the unicorns from 2019 are now distinctly hornless.

Covid has most definitely accelerated the continuing trend toward all things digital. Hesitancy observed in Europe and elsewhere over patient confidentiality may have to be rethought politically, as the global healthcare system also struggles to deliver services as efficiently as possible.

As the healthcare sector booms on, it would be remiss not to address the lack of acceptable public healthcare infrastructure exposed by Covid. The patchwork nature of regulation within Europe and perhaps in other parts of the world may also receive increased political attention as there is a slow and steady crisis brewing in the private and communal hospital sector as insolvencies have been papered over by low rates. The first sign of a true market rate rise might coincide with the recognition that government can no longer afford unending increases in healthcare expense. At the time of this writing, US pharmaceutical pricing remains quite high and recent roadblocks to Biden's social and infrastructure legislation are likely only a postponement of an invariable reduction in select public healthcare and pharmaceutical costs.

Should the world finally "normalize" in 2022, valuations linked to higher rates are likely to come in with the next wave being the rise and implementation of AI to curtail costs. Likewise, innovations in how drugs are developed, produced, and brought to market are cutting time to market almost in half. Coupling AI with fully digital medtech platforms that at some point in time self-correct via "deep learning", could and should revolutionize healthcare provided we have the political will and savvy to create and exploit pools of "big data." We're well on our way in healthcare and it will indeed be an exciting, brave, new, (and more volatile) world.

Deal spotlight

Omaeläin klinikka was sold to EVIDENSIA

Growing investor appetite in the pet care industry

Clairfield advises Korona Invest on the sale of Omaeläinklinikka to Evidensia

Korona Invest sold Omaeläinklinikka, a Finnish veterinary chain, to IVC Evidensia, Europe's largest veterinary care provider. The acquisition strengthens Evidensia's position as Finland's largest provider of high-quality veterinary services. Omaeläinklinikka and Evidensia together form the largest veterinary chain in Finland with 50 clinics and over 1,400 employees. Evidensia's net sales in the previous financial year were approximately EUR 70 million and will increase to approximately EUR 90 million after the transaction.

The pet market has boomed during the last few years, catching investor attention. The number of pets and spending per pet are on a steady rise. Developments in veterinary science have increased the availability of more sophisticated treatments and life expectancy of pets. More than ever, pets are seen as a family members. Pet owners expect increasingly sophisticated care and are willing to pay for it. All of these factors made Omaeläinklinikka a very attractive target for both local and international investors.

Omaeläinklinikka is the second largest veterinary chain in Finland and the largest independent platform in the Nordics with 13 units.

IVC Evidensia, originally founded in Sweden, has operations in 12 countries and 1,700 individual veterinary clinics. Its main owner are funds advised by EQT.

Other transactions in animal care

AUSTRALIA: nvc was acquired by VetPartners

FRANCE/BELGIUM: Dumona was sold to DCM

BRAZIL: FVO was sold to H.I.G. CAPITAL

GERMANY: GBA LABORGRUPPE acquired iPDP INSTITUT PIELONER

Selected subsectors

Medtech and devices

NORWAY/SWEDEN: max manus was sold to Conscriptor

GERMANY/US/FRANCE: ottobock. sold certain assets of FREEDOM INNOVATIONS to PROTEOR

FRANCE: Laboratoires Humeau was sold to INTUITIS investisseurs privés

NORWAY: HEPRO -easy life was sold to AddLife

Dental care

POLAND: dentaurus and medicadent were sold to INNOVA CAPITAL

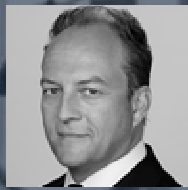
GERMANY: pluradent was sold to DEUTSCHE MITTELSTANDSHOLDING

FRANCE: Prodont Holliger was sold to ACTEON backed by Bridgepoint

POLAND: TWÓJ UŚMIECH was sold to TAR HEEL CAPITAL

Industrials insights

SECTOR HEADS



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High multiples and winning segments in the industrial sector drive high levels of M&A.

Deal flow continues to be strong in the industrial sector and a busy period of dealmaking is expected in 2022. High multiples have attracted vendors to the market including private equity firms that are running sale processes earlier than originally planned and corporates that are divesting non-core assets. Owner-manager fatigue is a factor in driving privately owned businesses to the market: entrepreneurs who guided their businesses through the pandemic (and in some instances also survived the financial crash of 2008) are choosing to de-risk rather than go through another period of upheaval. Innovation trends continue to drive the sector with further industrial applications in automation, digitalization, 3D modeling, Internet of Things, and artificial intelligence. Now more than ever companies value innovation to stay ahead of the curve and provide products and services fit for the future.

Supply chain issues are affecting many aspects of industry. Evaluating target business' underlying performance continues to be challenging as bounce-back from Covid is tempered by supply chain problems and volatile materials prices. We see insourcing of mission-critical production parts in order to reduce shortage risks in the supply chain. This onshoring and near shoring of supply chains are creating opportunities within the sector even while labor shortages and wage inflation are ongoing concerns for vendors and acquirors. Meanwhile order books of civil engineering and construction companies continue to be full in 2022, partially due to these supply chain issues as well as public and private spending.

Sectors experiencing elevated levels of M&A activity include instrumentation and controls, automation, building products, and packaging. In subsectors including HVAC and sensor and meter technology, companies are shifting towards lucrative service, installation, and maintenance business models. Sectors which were quieter in 2021 are improving positions now, with increased levels of M&A activity expected. Commercial aerospace is not yet out of the woods, but order books are filling with a likely increase in businesses coming to market in the second half of the 2022. Many of these businesses will have put exit plans on hold while waiting for the market to rebound.

We are happy to note increased focus on ESG and sustainability in classical industrial sectors such as agricultural machinery, shown by the shift towards efficient and climate-neutral solutions including the use of drone technology and electrification of machinery.

We are optimistic that 2022 will likely see the largest ever Clairfield transactions in terms of deal value, reflecting our excellent midmarket positioning and structured client development.

Deal spotlight

LUCART
SHARING THE FUTURE
acquired
esp
a great deal of difference

Crossborder paper & packaging transaction

Clairfield advises Lucart during a complicated period

Lucart Group is a multinational group that, with its over 60 years of history, is the European leader in paper for flexible packaging, the Italian leader in tissue paper, and the main producer in Southern Europe of ecological tissue paper for the consumer market. The Group employs over 1,600 people in ten production plants in Italy, France, Spain, Hungary and Germany, processing approximately 400,000 tons of paper per year.

Formed in 1990, Essential Supply Products Ltd (ESP) is one of the UK's leading independent manufacturers and converters of disposable tissue products. Based in Worcestershire, ESP supplies tissue paper products and dispenser systems for the away-from-home market with just-in-time supply and around-the-clock production.

The acquisition was of great strategic importance for Lucart Group, allowing the consolidation of its presence in the UK, the second-largest market in Europe for tissue paper. ESP meanwhile needed an investor to grow the company sustainably and to its full potential. Clairfield was appointed as the buy-side advisor as Lucart had previously worked with the Italian team. Seeing the transaction through was no easy task throughout the pandemic. While some sectors ESP served, such as catering, were negatively impacted, other sectors such as healthcare and hygiene, continued at high levels of activity. Site visits and meetings were conducted online as the Italian team was unable to travel to the UK. Meanwhile, Brexit made ESP an especially attractive target.

The Clairfield team in Milan and Birmingham UK worked together seamlessly to get all parties to agree on the terms of the deal in the midst of a turbulent time and in advance of potential capital gains tax changes in the UK.

Other transactions in packaging

UK/JAPAN
premierpaper
was sold to
OVOL
Japan Pulp & Paper Group

FRANCE
NCI
acquired
SOPANO

FRANCE/US
STERIMED
INFECTION CONTROL
backed by
SAGARD
acquired
3 subsidiaries of
amcor
(France, Germany, Spain)

CANADA
RICHARDS PACKAGING
acquired
CLARION
MEDICAL TECHNOLOGIES

Selected subsectors

- Construction and building products

ITALY/BELGIUM
BH Srl
holding company
acquired 40% of
IVAR
from
BEGETUBE

NETHERLANDS
Bolster.
INVESTMENT PARTNERS
sold
holonite
to
BUVA

FINLAND/SLOVENIA
STALA
was sold to
KOVINOPLASTIKA LOŽ

ITALY
IGI SGR SpA
PRIVATE EQUITY
and management
sold 100% of
FIMO
to
WISE EQUITY

- Industrial products

BELGIUM/GERMANY
Hydro
sold
Hydro Precision
Tubing
to
AURELIUS

UK
STUART TURNER
ENGINEERED TO EXCEL
acquired
MIKROFILL
ETHOS BOILERS

GERMANY/SWEDEN
JOST
acquired
alö
from
ALTOR FUNDS

FRANCE/JAPAN
ETI
Euro Techniques Industries
sold a minority
stake to
MODEC

Technology, media & telecom insights

SECTOR HEADS

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2022 should remain a transition phase for TMT players: a mix of flourishing companies, plenty of cash, but also Covid's shadow and lingering shortages.

As we all hope for the end of Covid, it continues to impact the tech, media & telecom industry. As in 2020 and 2021, TMT players who benefit from the digital transformation/automation of the economy and the larger proportion of time spent at home will emerge stronger: software, marketplaces and e-commerce, VoD platforms, and online services.

Nevertheless, as the semiconductor shortage is expected to continue until the end of 2022 at least, most industries will remain affected by manufacturing delays or shutdowns. The EU and US plans to relocate some chip suppliers will not bear fruit in 2022. In the TMT space, this will impact not only hardware and device manufacturers and cloud computing data centers, but also machine-learning systems, smartphones, and cars.

The global software industry is expected to grow at around 6.5% per year over 2022-2025. M&A transactions are boosted by high valuation multiples, showing 14x EBITDA multiple on average since 2020 while listed peers are trading at around 15x 2022e EBITDA. More and more transactions involve technology PE firms. Key drivers in the sector are virtual connectivity, digital transformation, cloud migration, cybersecurity, software development and SaaS, and artificial intelligence.

M&A should remain robust in 2022, considering both high multiples in sectors such as SaaS, medtech, and e-commerce enablers, and venture capital investment (around EUR 300 billion worldwide) that has accelerated the rise of unicorns, especially in Europe with 44 in France and Germany alone. Unicorns should then implement a buy & build strategy towards new geographies and complementary technology to accelerate their growth. Competition and scarcity of quality assets will drive prices higher. All in all, it will be another robust year for technology M&A.

Deal spotlight

WEB GEO SERVICES
backed by
Seventure
KARISTA
irdi
was sold to
CAPZA

Growth equity transaction for a software company

Clairfield advises Web Geo Services on its sale to private equity firm CAPZA

The shareholders of Web Geo Services sold a majority stake to CAPZA Growth Tech fund with the aim of creating the leading international player in geolocation intelligence.

Founded in 2009, Web Geo Services built its reputation by becoming the top partner of Google Maps and reseller of the Google Maps platform in Europe. The company focuses on five sectors: retail, finance, e-business, smart mobility, and travel & hospitality. Web Geo Services has also developed its own proprietary platform, “Woosmap”, a set of independent APIs dedicated to B2B2C business use cases such as store locators, geofencing, data search, and payment transaction cleaning.

Led by its two founders, Mathias Fliti and Jean-Thomas Rouzin, the company operates in eight countries with offices in Paris, London, Amsterdam, Berlin, Milan, Madrid, Mumbai, and Singapore. With a turnover of about EUR 25 million in 2020, Web Geo Services has experienced strong organic growth in recent years, with more than 450 blue chips clients including AccorHotels, Decathlon, EDF, Frichti, Decathlon, McDonalds, and Nissan.

CAPZA enters the Group’s capital as a majority shareholder, alongside IRDI Capital Investissement, an investment fund based in southwest France and historical shareholder of the company, which has decided to reinvest in the operation. The Web Geo Services’ management team will reinvest their full proceeds in the company. Other historical financial shareholders (Seventure Partners and Paris Region Venture Fund managed by Karista) are fully exiting during the transaction.

Other transactions in software & apps

BRAZIL
locaweb
acquired
bling! CPlug pagcerto samurai experts

FINLAND
Confirma Software
acquired
tietoaika.fi

UK/US
VIVINO
USD 155m in Series D funding
advisor of the largest shareholder
NEPTUNE INTERNATIONAL

FRANCE
Diapason
was sold to
Apax PARTNERS

Selected subsectors

IT services

TURKEY/CANADA
ETIYA
received an investment from
QUEBECOR

AUSTRIA/GERMANY
OPEN NETWORKS
was sold to
BECHTLE

FRANCE/POLAND
orange
acquired
BLUESOFT EFFICIENT SOLUTIONS

UK/US
ICC GROUP
was sold to
SERVICE EXPRESS

Fintech

DENMARK/POLAND
nets
acquired
P24

SPAIN
pagantis
sold
¡qué bueno!
to A SHAREHOLDER OF THE GROUP

UK
i-movo
was sold to
PayPoint

BELGIUM
itsme
Equity raise of EUR 24.7 million

Debt & capital advisory insights

SECTOR HEADS

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Clairfield's debt & capital advisory team focuses on acquisition financing, fundraising, leveraged buyouts, debt refinancing, debt restructuring, project financing, and public-private partnerships.

We are living through a unique moment in the economy. After much fear of post-pandemic recession and the dip in GDP growth due to lack of consumer spending, the economy is booming and the worry now is that the high level of liquidity coupled with low interest rates is leading to high inflation.

The local situation in the Nordics proves instructive. Prior to the pandemic, the Nordic company balance sheets were in great shape. Once the pandemic hit, local banks offered many loan facilities to keep companies afloat during what was foreseen to be a period of long economic hardship. Ultimately, for many sectors the Covid impact was not as heavy as feared and the money was never lent. In the Nordic region as a whole, financial institutions were receiving more money than they could lend, and at the same time, they were losing money every day from the negative interest from the European Central Bank.

While the debt market shows tremendous regional variance, our team notes some common themes:

- Refinancing deals are at record levels due to both high performance of companies in many sectors and the multiple avenues of funding available. A lot of money trying to find a home could turn quickly if markets turn sour.
- More sources of funding, whether debt or equity, are available than ever before and from diverse sources outside banks and pension funds, including debt funds and private debt providers. Private equity buyouts create lending space and PE players are moving to private lending and providing debt financing as well.
- Green and sustainability-linked financing are the trends to follow. The European Central Bank is introducing measures that will oblige banks and financial institutions to link their borrowing against ESG targets. Indeed, many banks are already applying ESG ratings to all borrowers and we expect this practice to roll out further.

The economic forecast for Europe is unclear and is matter of political debate. Interest rates in the US have picked up and inflation could remain for the medium term in spite of protests from the European Central Bank. The best course of action in terms of financing needs is very local and best discussed with an advisor since circumstances change so quickly. Funding is available but companies need to understand how to get access to it, understand what the lenders need to see, and negotiate the best terms.

Deal spotlight

Terra Patris

Negotiation of EUR 39 million syndicated sustainability-linked loan

Debt refinancing with sustainability-linked loan

Finnish industrial company Terra Patris refinances EUR 39 million debt portfolio

Clairfield advised Terra Patris on refinancing its debt portfolio with a syndicated EUR 39 million sustainability-linked loan. The new three-year loan facilities agreement with two one-year extension options includes sustainability targets related to the share of renewable electricity out of Terra Patris' total electricity consumption and the Group's personnel's average annual sick leave days, a common metric at heavy-manufacturing companies to ensure a safe workplace and attention to physical and mental well-being of employees.

Terra Patris Oy is a Finnish family-owned company with subsidiaries in leisure marine industry, construction equipment industry, contract manufacturing, and the forestry industry.

Clairfield is pleased to assist Terra Patris on its first sustainability-linked loan. Over the last several years, sustainability-linked loans have become the mainstream for publicly listed Finnish corporates. We expect this development to progress to private companies as well. Clairfield is well-positioned to advise public and private firms with sustainability-linked loans.

Selected transactions

FINLAND

versowood

Renegotiation of EUR 80 million senior debt portfolio

FINLAND

FIXCEL

Negotiation on senior debt financing

ITALY

EUR 30 million Long-Term Facility

BELGIUM/FRANCE

VIVALTO HOME

refinanced credit facilities through

RIVAGE INVESTMENT

with an EUR 112 million bond issue

GERMANY

Capital advisory for

LAGUSO

NETHERLANDS

QWIC

attracted growth financing from

DEHOGEDENNEN CAPITAL

MEXICO/US

CATTRI

acquired

lightbox

BELGIUM

BROUWERIJ MARTENS

Private financing

BELGIUM

bam COFELY

reached financial close on the Brabo II project

GERMANY/POLAND

expondo

was refinanced with senior debt

BELGIUM

Member of the STAR consortium Advisory to the Belgian state

sfpi fpim

on the disposal of BNPParibas, Proximus, Bpost, Belfius, Ethias, National Lottery, Brussels Airport, and other assets

FINLAND

Terra Patris

Renegotiation of EUR 40 million debt portfolio and additional debt financing

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