Annual Report 2019

THIRD GEAR

HSE·AG

“NOTHING IN LIFE IS TO BE FEARED, IT IS ONLY TO BE UNDERSTOOD. NOW IS THE TIME TO UNDERSTAND MORE, SO THAT WE MAY FEAR LESS.”

Ascribed to Marie Curie

Content

hseag.com

Dear Clients and Partners
Dear Employees
Dear Shareholders
Dear Stakeholders

It is our great pleasure to present the annual report for Hombrechtikon Systems Engineering AG (HSE·AG) after another successful year.

We have succeeded in establishing a strong and sustainably profitable business within a period of just three years. We, as the founding team, were always convinced of the success of HSE·AG. Nevertheless, we are overwhelmed by what we have achieved and the outlook for the future. No-one really expected this extraordinary success.

Intensifying our focus was a crucial factor for this. Based on our starting premise, which is still valid today, that “engineers are always needed”, we realized very quickly in discussions with our clients that our true competence is based on a deep understanding of their specific problems. Thus, as an innovation partner for our clients, we focused increasingly on these core competencies in the automation of nucleic acid, protein and cellular laboratory processes.

Contrary to intuition, our actual addressable market has grown continuously thanks to this focus. We identify suitable projects rapidly and precisely. Our clients benefit from greater added value, and we can continue to adapt better to their needs. As a strategic innovation partner, we now develop the requirements and from this the specification. We design and develop the products and can also arrange production with complete cost transparency. We ensure technical support throughout the life cycle and also provide a global repair service. Furthermore, thanks to our understanding of complex laboratory applications and the challenges of automation, we are also able to produce innovations independently for our clients. We are particularly proud of the proteome purification system, PreON, which our client PreOmics launched in June 2019. Due to the rapid development of mass spectroscopy, proteomics – the simultaneous analysis of the proteins in an organism – is becoming increasingly important, and not just for basic research. It is already foreseeable today that this will develop into a valuable tool for medical diagnostics – especially for oncological diseases. However, up to now, the very time-consuming, complex and error-prone sample preparation has prevented wider use of the technology. PreOmics has greatly simplified this process, enabling many scientists to make greater use of proteome analyses, for example in pharmaceutical research. Together with PreOmics, we developed a platform that automates this process for routine use. With costs of CHF 1,000 per analysis, expensive errors can be avoided and, at the same time, the reproducibility can be increased considerably.

We have identified a comparable task in current genome research. While the costs for genome analysis have continued to fall sharply, sample preparation is still a very diverse, complex and time-consuming process. Complete automation of procedures is costly and a lot of effort is required to adapt these to a variety of processes which is the reason why

only a few standard procedures have been automated up to now. We have developed various modules for substeps for our partners that are also easy to use by less qualified personnel.

Orders received

The 2019 financial year has demonstrated impressively that our focus is greatly appreciated by both start-ups and established companies. In 2019, we increased our new client business by a substantial 305% to CHF 3.1 million. Despite the planned decline in business with the QIAGEN Group, total sales increased by 41.9% to CHF 12.3 million.

We were very pleased that the service contract with QIAGEN was renewed. This allows us to seamlessly continue the successful collaboration of the last few years. We successfully advanced projects with all existing clients and, in many cases, entered into new contracts. In addition, negotiations are underway with leading life science companies for large systems development and technology projects, so that we can expect further strong growth in our new client business in the coming year.

Employee development

Our employees are crucial for our success. For most companies, shareholder value is still of utmost importance and determines the priorities. Clients take second place and employees come last. We feel that this order is wrong, because nothing happens without the people who work with commitment, creativity and passion for the clients, products and company. Client relationships thrive on personal contact. Each service for our clients is only provided thanks to the commitment of our employees.

OUR VALUES – OUR DNA

HSE·AG is built on six core values that are shared by all our colleagues. They are our DNA, playing a key role in defining our performance as individuals and as an organisation.
Enjoyment: We work on projects that interest us, with people with whom we enjoy working.
Usefulness: The projects we engage in should benefit our clients, our colleagues and society. We continually improve ourselves as individuals and as a company.
Ambition: We strive for excellence and continually push our boundaries to build something bigger than ourselves. This is the source of our satisfaction.
Grounded in reality: We make well-considered, disciplined and fact-based decisions. In doing so, we confront the hard realities, draw appropriate conclusions and focus on the best possible implementation. Pressure from tight deadlines must not affect the quality of our work.
Seeking out the best solution: We are curious and open-minded, guided by truth and transparency. We encourage and seek feedback in order to learn rapidly.
Fairness and respect: We treat everyone fairly and with respect. We communicate openly and honestly. This forms the basis for respectful and mutually challenging discussions.

We are therefore convinced that maximizing self-determination enables our employees to perform to the best of their ability and, thus, to achieve greater personal satisfaction. Transparency and openness are required to allow goal-oriented development of the company with the greatest possible degree of self-determination. All employees are therefore regularly informed in staff meetings, departmental meetings and individual discussions about the company's goals as well as its business and development. Everyone has access to the information required so that the best possible decisions can be made. A clear vision and mission with main long-term goals for a three-year period, broken down into the short-term using policy deployment, mean that everyone can align their actions independently with the goals of the company.

The dynamism we have achieved in our new client business and the high level of employee satisfaction encourage us to continue along this path and to show great appreciation for our colleagues.

Looking ahead

We expect the life sciences and diagnostics market to continue its dynamic growth over the next few years. The main driving force is the globally connected world with an ever-increasing and ageing world population, and a growing demand for medical devices. At the same time, the cost pressure in the diagnostics industry is creating a growing demand for automated laboratory processes. For their part, the manufacturers of life science tools and diagnostic systems want to make their cost structures more flexible by outsourcing. This creates an increasing demand for development and innovation service providers. Technological progress adds to these factors. The revolutionary findings in the life sciences are opening up new markets with huge potential. Next-generation sequencing enables, for example, non-invasive prenatal diagnostics (NIPT) or nucleic acid-based immunotherapies, which create completely new treatment options for infections and in oncology. Finally, the CRISPR technique provides new approaches for individualized gene therapy. In all cases, the need for novel automated solutions increases as use widens. With its application and development expertise, HSE·AG is uniquely positioned to take advantage of these trends and to help shape them.

Hans Noser
Chairman of the Board

Michael Collasius, Ph.D.
Chief Executive Officer

“HSE•AG strives to maintain a workplace culture that promotes continuous personal development. I enjoy working with the bright minds here who are passionate about what they do.”

Cheuk Fan Yolanda Yuen Blandeau
Verification & Test Engineer, HSE•AG

VISION

We help our clients achieve their next scientific breakthrough.

MISSION

By combining our application and engineering expertise, we aim to develop superior tools that enable our clients to understand the key principles of life.

In doing so, we implement systems and processes that meet the precise needs of our clients.

PROMISES

1 We focus all of our energy not only on meeting our clients’ expectations, but also on exceeding them whenever possible. We aim to ensure they receive the greatest possible added value and the best possible quality.

2 The consistent application of our clearly defined processes and the uncompromising implementation of all requirements of our clients and regulators ensure the safety and performance of our products and services.

3 All of our employees at all levels are required to comply with all applicable specifications of our clients and the authorities and to ensure effective quality management at all times. We want to make a clear difference for our clients through our high-quality services.

4 To continue to boost our performance, we embrace continual improvement methodologies in compliance with regulatory requirements. We set objectives for the systematic management of these processes and review them regularly.

Repurposing as an innovation concept

The next industrial revolution in the life sciences is just around the corner. Following genome analysis technologies, we can now also automate the analysis of the proteome – the proteins present in cells at a particular point in time. This paves the way for treatments such as novel cancer therapies that are precisely tailored to individual cell changes. For example, the immune system can be specifically activated to fight cancer. As with DNA sequencing, HSE•AG is also actively involved in this revolution. The know-how of nucleic acid technologies can be applied directly, as CTO Konstantin Lutze points out using specific examples.

Mr. Lutze, HSE•AG has a long history in the development of automated solutions for DNA and RNA laboratory methods. At first glance, there are significant chemical differences between proteins and nucleic acids. How different are automated solutions for sample preparation of each of these polymers?

There is surprisingly little difference. The basic physical techniques are the same. In both cases, reagents are pipetted, samples are shaken and column chromatography is used for sample processing. Thus, the mechatronics of the automated solutions are almost identical. This gives us the advantage that we can set up proteomics solutions on our proven systems for nucleic acids. This not only significantly reduces the development effort, but also guarantees high functional reliability right from the start. The interaction of liquid handling, incubation steps and rapid purification using spin columns has already been optimized. This enables us to concentrate on the specifics of the relevant application and to develop a marketable solution much faster.

Can you give us an example of such a new development based on nucleic acid technologies?

The best example of this is the start of our development partnership with PreOmics in Munich. We developed an innovative method using mass spectrometry that not only accelerated sample preparation for quantitative analysis of all active proteins in a cell by a factor of ten, but was also highly standardized. It will give the whole field of proteomics additional impetus. When we first met our counterparts from PreOmics, we immediately saw the potential to automate the entire process. At that time, PreOmics was still focused on optimizing chemical and molecular biological methods. For this reason, they initially showed little interest in exploring automation options. However, they provided us with sample material and their reagents. We then developed the first prototype independently within three months. Our interdisciplinary team simply made the appropriate adaptations to a device for nucleic acids. PreOmics was completely convinced by the result.

“THE INTERACTION OF SOFTWARE, MECHATRONICS AND PROCESS TECHNOLOGY HAS ALREADY BEEN OPTIMIZED WHICH MEANS WE CAN DEVELOP MARKETABLE SOLUTIONS MUCH MORE QUICKLY.”

“NOT ONLY DID OUR FIRST EXPERIMENTAL DEVICE WORK FASTER, THE INDIVIDUAL RESULTS WERE ALSO MUCH MORE REPRODUCIBLE THAN THOSE FROM THE BEST MANUAL PREPARATIONS.”

Not only did our first experimental device work faster, the individual results were also much more reproducible than those from the best manual preparations. This marked the starting point for development of a marketable device. Since September 2019, the so-called PreON has been used successfully by customers in pharmaceutical research and by universities.

Why did you undertake the project independently?

This demonstrates the uniqueness of HSE·AG. On the one hand, we are excellent contract developers who know our technologies inside out and who do everything possible to meet the specifications of our clients. On the other hand, we are also enthusiastic automation engineers with an extremely profound knowledge of laboratory processes. We not only understand exactly how the individual steps in the devices interact with each other, we also understand the upstream and downstream processes. Our objective is to always find ways to integrate these into the device. In the field of DNA sequencing, we played a key role in this step-by-step development of automation right from the first microtiter-plate robot in 1996 through to the complete sample-to-result solutions in the form of today’s next-generation sequencing platforms.

Does this mean you are always working towards an end-to-end solution?

On the one hand, yes. We are always focused on end-to-end solutions that optimize all procedures in a particular laboratory process from A through Z. But we also always think outside the box for the current application. How can a particular method be used in another field? We know from experience that falling prices resulting from automated technologies make a method attractive for completely new user groups. Take DNA sequencing for example. Since the cost of complete genome analyses fell to just a few hundred dollars, these analyses have become a powerful research tool in areas such as archeology and genealogy. Previously, this was not a customer base for sequencing technology providers. Not to mention the continuous stream of new potential applications in medical analytics. With our extensive and, above all, broad experience in the laboratory environment, we are often better able to see such opportunities than manufacturers, who are mostly fixed in a very focused specialist area.

“BESIDES UNDERSTANDING EXACTLY HOW THE INDIVIDUAL STEPS IN THE DEVICES INTERACT WITH EACH OTHER, WE ALSO UNDERSTAND THE UPSTREAM AND DOWNSTREAM PROCESSES. OUR OBJECTIVE IS TO ALWAYS FIND WAYS TO INTEGRATE THESE INTO THE DEVICE.”

“WE ALSO ALWAYS THINK OUTSIDE THE BOX FOR THE CURRENT APPLICATION, BECAUSE WE KNOW FROM EXPERIENCE THAT FALLING PRICES MAKE A METHOD ATTRACTIVE FOR COMPLETELY NEW USER GROUPS.”

What kind of diversifications do you see for the PreON?

For example, we are currently working on a module that combines the PreOmics process with a labeling reagent system so that, in future, up to 16 different samples can be analyzed simultaneously in one single mass spectrometric analysis. The main difficulty in automating these combined processes lies in the very high moisture sensitivity of the labeling chemicals. If the open reagent tubes are on the pipetting robot for too long, this can render them useless. Therefore, the process needs to be interrupted to load the reagents onto the device at the right time. We have now developed a space-saving component that cools the reagents for hours and reliably overlays them with argon. This means they cannot come into contact with the humidity that is harmful to them and the process can be automated without interruption. In addition, the extremely expensive labeling chemicals remain stable under argon and can, therefore, be used again if they are not completely used up in a series of experiments. In future, laboratories will either be able to perform many more or much more detailed proteome screenings for the same price. This will pave the way for many new analyses.

“WITH OUR PLATFORMS AND OUR EXTENSIVE EXPERIENCE IN THE LABORATORY ENVIRONMENT, WE ARE OPTIMALLY POSITIONED FOR SUCH APPLICATION-SPECIFIC DIVERSIFICATIONS AND ADAPTATIONS.”

And what about nucleic acid technologies? Do these still have potential for innovation or has this been exhausted?

Not by a long shot. More and more specialized devices are needed for particular applications. And, as you know, appetite comes with eating. More and more research and development areas are recognizing the new opportunities that cheap analyses open up for them. For example, we are working on direct integration of the spectrometer functionality into sample preparation devices. In this way, we enable space-saving and cost-saving in-process quality control steps, which today are either performed manually or with time-consuming integration of the reader provided. With our platforms, our in-depth technology know-how and extensive experience, we are optimally positioned for these application-specific diversifications and adaptations. Because we are intensively involved with these questions, we always find new and innovative solutions. As I said, we always think one step ahead of our development products. For me personally, this is one of the main attractions of my daily work.

From service provider to innovation partner – from genome to proteome

HSE·AG has been fully productive since the company was founded. A service contract enabled the company to seamlessly continue its activities for the QIAGEN Group. Since then, the company has successfully expanded its focused competencies to include new clients and additional application areas.

Over the past three years, HSE·AG has successfully established itself in the fields of proteomics and cell analysis, building on its many years of extensive experience in the automation of nucleic acid laboratory processes – from the first automated plasmid purification system in the 1990s to a fully integrated next-generation sequencing platform. HSE·AG engineers and scientists not only implemented requirements intelligently but, as strategic partners, also produced more and more independent innovations for clients.

Successful platform taken to the next level

The launch of the QIAcube Connect in January 2019 marked a milestone in the collaboration with QIAGEN. This takes the automated platform for centrifuge-based nucleic acid purification – launched in 2006 and uniquely successful with many thousands of units sold – to the next level. Within a total project time of only 1.5 years, a new design, automatic decontamination, WLAN and Bluetooth connection as well as a large touchscreen significantly simplified use and ensured seamless digital integration.

One-stop-shop for the entire life cycle

The one-stop-shop business model is one of HSE·AG's groundbreaking successes of the first few years. As a development service provider, HSE·AG not only assumes responsibility for industrialization of a system, but also ensures efficient production of devices and provides reliable support over the entire life cycle.

By being involved in all steps from concept and technology selection to establishing and managing the supply chain, production and service organization, HSE·AG employees can optimally align the individual areas and, for example, focus from the outset on technologies that simplify subsequent production and maintenance. The one-stop-shop approach is anything but new for HSE·AG. As a former department in a large corporation, HSE·AG has decades of experience in the comprehensive support of complex laboratory devices over the entire life cycle.

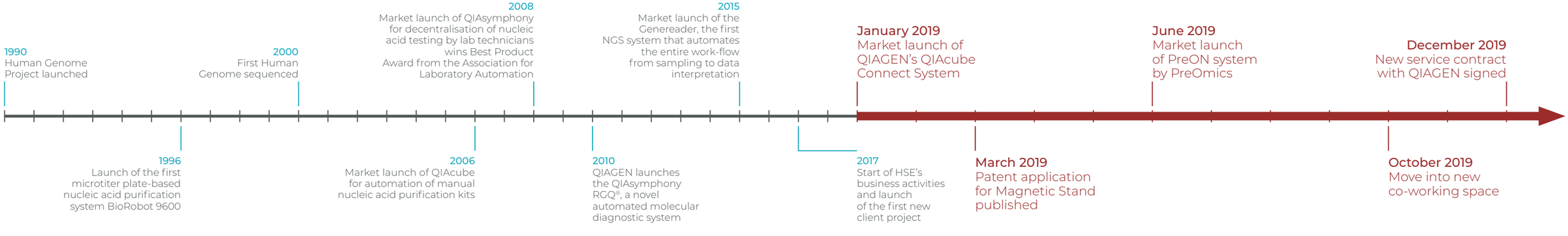
Innovation partner for revolutionary proteome technology

The PreON proteome sample preparation platform is an impressive example of how HSE·AG, as an innovation partner, can expand existing competencies into additional application areas and market segments. It was developed in just one year together with the Munich-based PreOmics, and officially unveiled at the ASMS conference in Atlanta in June 2019. Using an innovative method, the spin-off from the Max Planck Institute of Biochemistry has massively simplified the complex processes involved in preparation of the cellular proteome for mass spectroscopic analysis. The PreON automates these innovative sample preparation processes thereby facilitating widespread use of proteome analyses in biological research and medicine. Understanding the relationship between transcribed DNA and the protein translated afterwards is vital to understand cellular functions and development and analysis of diseases. The PreON was received positively by the market and the first systems sold in a very short period of time.

As the basic physical techniques such as pipetting reagents, shaking samples and column purification are essentially the same as those used for nucleic acid purification, HSE·AG was able to base its automated solution on the sophisticated concept of a DNA platform. This reduced the development effort and ensured great reliability right from the start.

Optimal space for future innovations

HSE·AG moved into a new co-working space at the end of 2019. An additional floor at the company headquarters in Hombrechtikon was converted into rooms to optimally promote teamwork. With mobile furniture and rooms that can be divided flexibly, the work space can be adapted to current project needs. Specific rooms can be created for interdisciplinary teamwork, workshops, client meetings as well as assembly and functional testing of prototypes, depending on needs. HSE·AG has, thus, created optimal conditions for the expected further growth of the company, also in terms of jobs.



Who holds the keys to the future of synthetic biology?

Few life science sectors have been gaining similar economical traction like synthetic biology. Leaps in genome sequencing and engineering technologies now allow us to create custom genetic constructs and reprogram living organisms, which opens new ways to produce drugs, chemicals, biofuels, materials and much more. According to Forbes, the synthetic biology industry has raised over $12 billion in funding in the past 10 years, with $4 billion in 2019 alone. But for the industry to truly take off, the field needs systematic automation. Laura Turpeinen, Associate Marketing Manager at HSE•AG, describes how for the industry to truly take off, the field needs systematic automation.

Challenges in engineering biological systems

Together with systems biology, synthetic biology is a platform for translating advances in genomics, proteomics and molecular biology into real-world applications. The key to this production orientated approach is in applying engineering design principles to biology. Synthetic biology uses protocols from molecular biology to design, build, test new genetic constructs that express a desired product. Through continuous improvement, engineering biological systems with custom functionalities should become increasingly dynamic and inexpensive for future industries.
Yet despite its elegance, the design-build-test-learn cycle is all but straightforward. Making the bioengineering steps work seamlessly is key to production success, which requires instruments and workflows with uniform standards. Synthetic biologists therefore need to collaborate with teams of automation engineers, fluidics experts, computer scientists, software designers and regulatory advisors to bring their solution to the market. This interdisciplinarity brings its own challenges in synchronization as biologists, used to the messiness of complex biological systems, are now expected to guarantee production efficiency and predictability.
By its nature, synthetic biology relies on trial and error. Reaching a desired phenotype through continuous debugging and reprogramming can require designing, testing and screening for 100,000s of gene variants, and where computers have automated data collection, most workflows in mutagenesis, mutant characterization and candidate enrichment rely mostly on manual labor. The need to generate and analyze high-throughput, reliable and reproducible experimental data calls for laboratory automation.

Automating synthetic biology

Incorporating programmable tools is essential for any industrializing process and the same is for synthetic biology. Robotics can be used to automate virtually all aspects of the synthetic biology workflows. This includes next generation sequencing, DNA extraction, PCR set-up and clean-up, cell transformation and transfection, colony picking, biochemical and cell-based assays, and protein purification and expression screening. Currently, programmable robotics are missing from assembly lines that could bring synthetic biology to a commercial scale. Whether they are liquid handlers, sample purifiers or custom incubators, any solutions for eliminating manual steps will be more than welcome.

Further, performing reactions in small volumes and increasing throughput through standardized microfluidic cartridges (or Lab-on-a-Chip devices) will increase the turnover of results. As an example, a UC Berkeley team described a programmable, automated microfluidic platform, on which DNA libraries can be seamlessly de-

signed, constructed, transformed into a host chassis and screened for desired functionality. Similar end-to-end technologies built on cell-free in vitro environments will eliminate the need for organism-specific technologies and create more predictable manufacturing platforms for scale-up production.

In addition, synthetic biology relies on developing reproducible data on a massive scale. Once a useful gene circuit has been established, synthetic biologists need to arrive at the same result again and again with minimum variability and ideally so that anyone can reproduce the same end goal. Biologists estimate that over half of publications contain reproducible results, an alarming statistic which currently includes the developments in new gene therapies and genome editing tools. Further, most methods in synthetic biology projects are unstandardized, tedious, repetitive and highly error-prone for humans, but ideal for robotics. Standardized tools and protocols will especially improve the quality control required for healthcare applications of synthetic biology.

Most importantly, workflow automation will lower accessibility barriers and transform synthetic biology into a field of open innovation. Robotic instruments enabled cheap and fast genome sequencing within 20 years, and the same is expected for genome synthesis. A revolution in automated laboratory tools will allow more students, researchers, and start-ups and large companies to create unprecedented future solutions for industries, medicine and the environment.

Today's technological bottlenecks

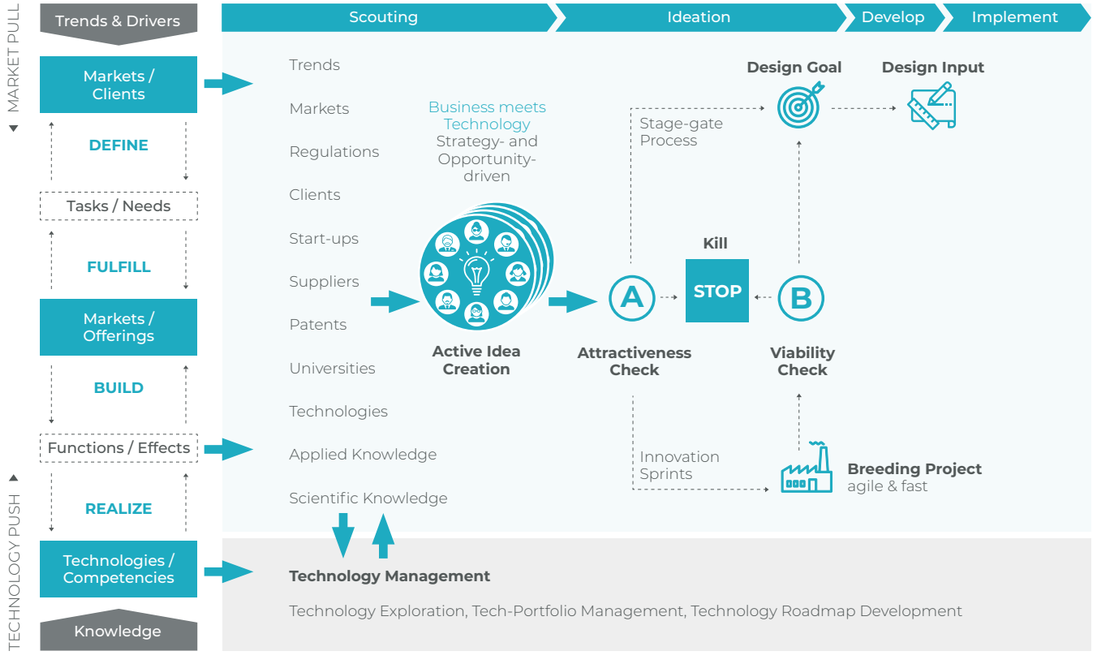
Since the field of synthetic biology itself is made of multiple parts, simplifying synthetic biology workflows into a single instrument is the holy grail for instrument developers. However, since the field is in its early flux, new molecular methods could make trendy instruments useless. Therefore, it's understandable for life science instrument providers to feel uncertain on where the field is going and where to invest. Fortunately, nearly all work around synthetic biology revolves around DNA manipulation. This means that every breakthrough tool in the following areas will make the genetic code cheaper, easier and safer to handle and consequently impact the entire industry.

Firstly, quick and accurate genome sequencing is essential for true verification of engineered synthetic constructs. Methods to look out for include automating NGS workflows. However, these are limited to a specific base pair range. A transition into targeted amplicon sequencing would be ideal for high-throughput organism engineering, since it is more cost-effective and would deliver a higher coverage, allowing for detection of rare variants, whereas long-read and whole exome sequencing would be better suited for genome therapy and personalized medicine.

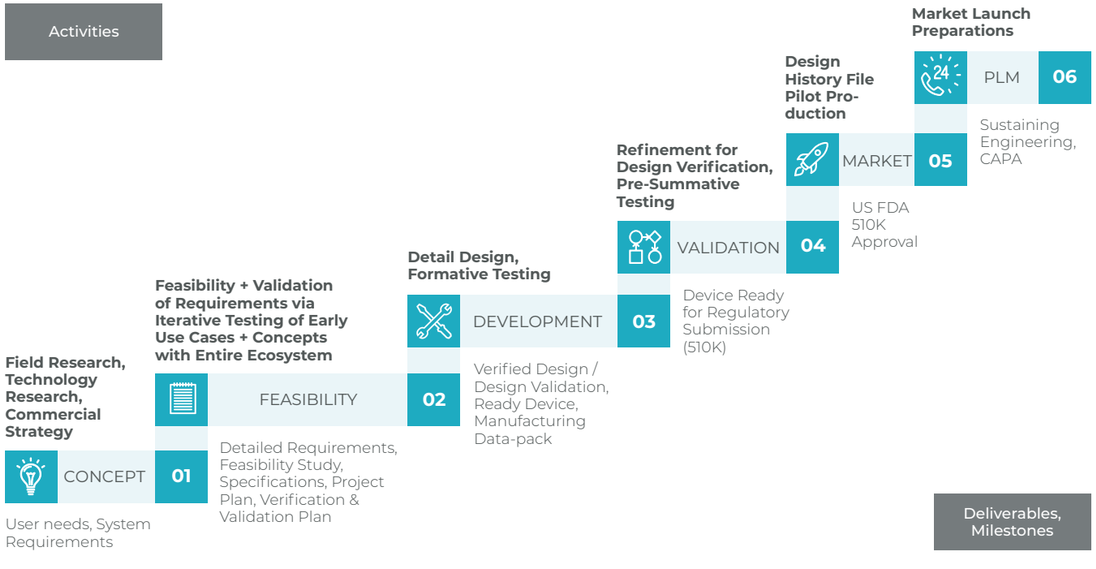
Secondly, synthesizing desired strands of DNA or RNA is a key method in synthetic biology in need of laboratory automation. Automating steps within the DNA assembly and production workflow will bring down the cost of DNA design and ordering. Though not yet commercially available, advancements circle around enzymatic DNA synthesis, which would create longer nucleotide reads than chemical synthesis and be more environmentally friendly. Indeed, the whole industry is still waiting for a custom DNA printer, which would enable researchers and companies produce their own DNA on the spot without outsourcing. This will become increasingly important for the rise of DNA-based data storage as well as concerns over data privacy and ownership.

And finally, the example of CRISPR/Cas9 engineering rising from a virtuously unknown tool five years ago to changing how we carry out mutagenesis shows the dynamics of the synthetic biology field. Now, targeted genome editing tools are moving from a handcraft to industry-grade instrumentation. Various steps in genome engineering workflows can be simplified through automation: guide RNA design and synthesis, transfection and transformation and analysis. Importantly, improvement is needed in editing efficiency and accuracy. CRISPR still has a risk of off-target effects, making validation testing paramount for gaining public trust. Though flooded with investments, the synthetic biology industry faces a vast technological challenge in order to fully realize its potential. Here, instrument providers have a unique opportunity to become enablers of progress. As seen with NGS technologies, the need to analyze, write and edit DNA through automated tools is likely to accelerate. However, it's easy to become overwhelmed by which of all the possible workflow steps to automate first and how to remain relevant in the next five years.

INNOVATION PROCESS AT HSE•AG



WE DRIVE ALL PHASES OF SYSTEM DEVELOPMENT



Enthusiasm as a key to success

Ambitious, quality-conscious, useful, fair and respectful: many companies are committed to these values and goals. However, the extent to which they are also lived in everyday life is often a different matter. At HSE·AG, another value matters – enthusiasm. Enjoying the work itself and in carrying it out together with colleagues. As Quality Manager, Andrea Wildhaber, and the Head of Project and Quality Management, Felix Westhoff, show in this interview, this fundamentally changes the corporate culture.

Felix Westhoff I've been with HSE·AG for just over a year now. What struck me as particularly positive was how important it is to the company that I enjoy my work as an employee. You sense that this is not just a slogan in the mission statement, but something the management team is personally committed to. I was not used to this in this form before and I appreciate it very much.

Andrea Wildhaber I can only second this. Enjoyment and enthusiasm are actually not just one of many company values here but, actually, the most important ones of all. Therefore, at HSE·AG, going the "extra mile" is not something that the company demands of its employees, this actually works the other way around. Here, employees go the "extra mile" on their own initiative, because it is the shared commitment that makes the work so attractive.

The management team lives and works by these values

F.W. I have often asked myself why HSE·AG functions differently. My explanation is that the entire management team lives and works by the company values in a completely natural way. We want everyone to work in an enjoyable environment. And that makes perfect sense. After all, we spend a lot of time together at work.

A.W. Typically, the first version of the corporate values also included the term fun. This was changed because there were concerns that it did not seem serious enough for a service-oriented company. However, in terms of content, this is exactly what it is all about – enjoying our work.

Fairness and respect form the second part of the keystone

F.W. For me, the second decisive corporate value of HSE·AG is "fairness and respect". In combination with the right to enjoy your work, this forms a keystone that enables implementation of all other values and aspirations such as ambition, usefulness, factuality or striving for the optimal solution. Just as real commitment can only come from the employ-

ees themselves and from them enjoying their work, an open and goal-oriented discussion culture is only possible if there is mutual respect, also for our qualities and quirks.

A.W. Mutual respect is an important reason why the corporate culture at HSE·AG works so well. This starts right at the top as the management team does not really have any secrets from us and has an extremely open communication style. For example, we are informed on a monthly basis in an employee meeting about all relevant operations in the company and the management review reports are available to all employees on the Intranet.

Barely noticeable hierarchies

F.W. This also includes the fact that there is virtually no hierarchy in everyday working life. An apprentice discusses something with the CEO in the corridor as a matter of course. The management team acts like everyone else in the company. You can always approach the members without having to make an appointment.

A.W. These informal and decision-making channels are particularly important for me with my 40% workload and also for other colleagues who work part-time. As I'm not here every day, and am mainly involved in creative tasks, I'm really happy that short coordination meetings take place. I can also rely on the fact that my issues and concerns are addressed and driven forward so that I can continue to work seamlessly when I return to the office. Because the management team has an interest in me enjoying my work, it creates the environment for me to do so.

F.W. The math is easy: those people who enjoy their work achieve more at the end of the day – for the company and for clients. Personally, as a manager, I would also much prefer that someone works part-time than having someone unmotivated who works full-time and who is just filling in time. Although the organization is a bit more complicated with a lot of part-time work, we are convinced in the management team that everyone who wants to work part-time has an important, personal reason for doing so. I don't need to go into that. It is important that everyone enjoys working at HSE·AG and contributes in such a way that everyone else can also enjoy their work.

Error culture without blame

A.W. For me, respect also means that everyone in the company can be their true self and feel at ease. This is imperative for employees to carry out their duties in the company with great dedication.

F.W. I couldn't agree more. The "full employee commitment" is explicitly defined as a quality objective, which is also regularly reviewed. But if someone doesn't feel at ease in this environment, you quickly notice this during everyday work and in open conversations. Then we look together for a solution that is acceptable to both parties. Luckily, this has always worked up to now.

An uncomplicated and equal approach also impacts the error culture. For me, it highlights another big difference in contrast to other companies. There is no apportioning of blame, but together we look for the best solution to put things right. What's even more important is the common understanding of how we can avoid the same mistakes in future.

A.W. In a certain sense this also belongs to the subject of respect. We all basically assume that everyone gives their best, and we support each other. This forms the basis for our ambitions. In an innovation-driven area such as instrument development for laboratory automation, a productive error culture is crucial. The difference here is made by people who think for themselves and dare to take a chance.

The argument counts, not the role

F.W. This also includes an extremely fact-based culture of discussion. The superior person does not win, but rather the person who puts forward the better arguments. And there are lively discussions to find the best possible solution.

A.W. As an aside, this also helps to keep you young. Although the age mix is fairly average, I always have the feeling that I work in an extraordinarily young and dynamic company.

"The ability to easily create interdisciplinary teams enables me to use our inhouse knowledge to approach challenges with different ways of thinking and new input."

Ralph Haselbach
IT Technician, HSE·AG

Facts & Figures for the 2019 financial year

HSE·AG successfully completed the transition phase in the financial year 2019. More than 25 new clients were acquired in the first three years and the first OEM product was launched during the year under review. Consequently, there was substantial growth in sales and EBIT in 2019. The workforce also grew slightly.

Key figures

In the third financial year, HSE·AG increased sales by 41.9% to **CHF 12,305 million** compared to the previous year. This resulted in an EBIT of **CHF 658'532** (2018: CHF 677'154).

These business results gave rise to the following key figures:

7.9 %

Return on sales

0.44

Debt factor

23.98 %

Self-financing ratio

Appropriation of profits

		2019	2018
Retained earnings, beginning of fiscal period	CHF	715,832	168,776
Net profit	CHF	505,918	558,056
Available retained earnings	**CHF**	**1,221,750**	**726,832**

The Board of Directors proposes to the General Meeting that the profit be appropriated as follows:

		2019	2018
Payment of a dividend of	CHF	0	0
Allocation to the legal reserves	CHF	0	11,000
Allocation to the free reserves	CHF	0	0
Carried forward to new account	CHF	1,221,750	715,832
Available retained earnings	**CHF**	**1,221,750**	**726,832**

Audit of the financial statements

The annual financial statements of Hombrechtikon Systems Engineering AG for the financial year 2019, which covers the period from 1 January 2019 to 31 December 2019, were audited on 28. April 2020 by Treucontrol AG as external auditors in accordance with the Swiss Standard on Limited Audits.

Risk assessment

In the first year of its existence, HSE·AG established a quality management system in accordance with ISO 13485:2016 for the development of IVD (in-vitro diagnostic) systems. This was certified in November 2017 and the first audit was successfully passed in 2018. Risk management is an integral

part of this system. To identify both risks and opportunities at an early stage, HSE·AG regularly reviews internal and external factors across the entire corporate environment. The financial data determined for the financial statements in accordance with the Swiss Code of Obligations and the risk-related financial figures in accordance with the regulatory requirements form the basis for this review.

Employee competencies

HSE·AG has an exceptional breadth and depth of expertise among its staff. Its employees come from **11 different countries.** Their competencies cover the entire spectrum of technology and project implementation requirements for the development of life science and diagnostic solutions based on molecular biology. In combination with many years of experience, they represent a crucial competitive advantage for HSE·AG.

Employee development

In 2019, the workforce increased slightly from 52 to **56 employees.** Of these, two are apprentices (one commercial apprentice and one IMS trainee), which results in an **apprenticeship quota of around 3.6%.**

Employee development was supported through various workshops and events in 2019. Goals here included reinforcing the sense of responsibility of each employee and building bridges between management and employees. This should help to ensure that the organization can adapt in an agile way to client needs.

The **turnover rate decreased to less than 10% in 2019.** This means that in its third financial year it is already at a standard industry level. The fact that all vacancies due to turnover have been filled and additional employees have also been brought on board shows that HSE·AG is well positioned in the extremely competitive international labor market for highly skilled professionals. Furthermore, HSE·AG employed an additional seven contractors in the second half of the year.

Employee participation program

An important cornerstone for the long-term business success of HSE·AG is the employee participation program launched at the end of the first financial year. Selected employees can acquire participation certificates through this program. The value of these is strongly linked to the success of the company. The purpose, detailed participation conditions and calculation of value of employee participation are documented in the program regulations.

After the third financial year, the value of the **participation certificates is 13.59082 times** (2018: 8.35832 times) the original nominal value of CHF 0.01. Employees will be able to acquire further participation certificates in 2020. Around 80% of HSE·AG employees have taken the opportunity to participate in the company to date. This high proportion shows that employees also have great confidence in the sustainability of the HSE·AG business model.

80 %

of employees
have a stake in HSE·AG

56

Employees

2

Trainees

“HSE·AG’s interdisciplinarity and project diversity are unique. In the dual role of Project Manager and Mechanical Engineer, I can fully exploit my potential at both an organizational and technical level and continuously expand my knowledge – a strong combination that enables me to deal with the variety of tasks.”

Michael Steck
Project Manager &
Mechanical Engineer, HSE·AG

MATTHIAS CHRISTOPH ROLAND JOACHIM
BRAD ANJA DONNA JOHN MIHA DORIS
SABINE ULF JAKOB PAUL JULIA SANDRA
CAROLINE URS HADY MICHAEL STEPHAN
MANUELA TIM ERGÜN GIULIANO MARTIN
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Gender-neutral pronouns and role descriptions have been used whenever possible and are to be understood in all cases.