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Plattform Life Sciences

Technology – Financing – Investment

in co-operation with

VentureCapital Magazin

Investing in Biotechnology

NEW!

Industry and policies
From challenges and possible solutions

Financing
What will have a strong impact on medicine?

Capital market
Headwinds in European healthcare?

Editorial

Dare!

Holger Garbs,
Editor Life Sciences

The scientific expertise of German biotechnology researchers and developers is internationally recognized. University and non-university research institutions enjoy an excellent reputation far beyond the borders of the Federal Republic. And yet, science in this country continues to struggle to transform its visions and ideas into marketable products and technologies.

Why is that? On the one hand, the number of dedicated biotech companies has been steadily increasing for years, reaching more than 640 in 2017. On the other hand, the well-known and notorious challenges remain, namely costly research and development (especially in the field of medical biotechnology) and the high risk of default. Many needed investors are afraid of subjecting biotech companies to high costs which might result in sales over many years, but hardly any profit until the successful launch of their product.

Our issue “Investing in Biotechnology” will be published on the occasion of “Biotech Investors Day”, which takes place on 8 April in connection with the German Biotech Days in Würzburg. In this issue, we would like to shed more light on the financing situation of biotech companies in the DACH region.

We let entrepreneurs, investors and analysts have their say and talk to stock market experts. The framework conditions for venture capital financing are just as much a topic as the growing importance of biotech business angels. German biotech companies are interesting, even for foreign investors, as you will read. And M Ventures provides an example of the value pharmaceutical companies like Merck attach to the financing of new biotech start-ups.

Despite many efforts, biotech companies remain dependent on external funding sources. In many places, biotechnology is one of the new century’s key industries, especially as they merge inexorably with other traditional and modern industries. Do all participants and decision makers – especially those who can create conditions and capitalise on them – understand this? We’ll see!

We wish you an exciting read.

Holger Garbs

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Invest in Biotech!

Challenges and opportunities

Investments in life sciences and medical biotechnology remain unique in this country. Many investors continue to find the topic difficult to discuss. Life sciences and biotechnology may be one of the key industries of the coming decades, nevertheless, they still hold red flags for many. **By Holger Garbs**

Illustration: © Paulista – stock.adobe.com

The typical German investor sticks to their guns and prefers to invest in classic industries such as automotive, mechanical engineering, banking or insurance. At most, chemistry – as a sub-industry of all-encompassing life sciences – remains highly popular. Big names such as BASF, Bayer, Linde or Covestro are eternally recognizable in this sector.

But who knows an Evonik, a MorphoSys or a BioNTech? The potential audience is immense, but the content is difficult to convey to most donors. For example, the search for new drugs in immuno-oncology using innovative CRISPR or Cas9 technology in the field of personalized medicine appears to be subject-specific. What is among experts a common example is among laymen a closed book. Who would invest in one of these?

Still highly speculative

The industry is characterized by long development times and high default risks. For experts it's a sure thing, but for outsiders, it takes a lot of looking beyond these hurdles and finding the conviction to step into the market. Recent and future developments in artificial intelligence may help here, but that can take time.

The lighthouses in the domestic industry are simply missing – those that can attract investors outside narrow circles of experts, and whose light is visible on the horizon. These positive examples also have a convincing track record and they are a dime a dozen in the USA, but this is hardly the case in Germany or in the rest of the DACH region. For example, life science investments continue to be highly speculative and many investors are avoiding the subject, relying instead on what's tried and true.

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One could counteract the speculative share, at least partially, with industry knowledge and expertise. But both are still limited on the part of investors and analysts, even in German banks. The German investor scene in particular is no fallow landscape, and names such as TVM, Wellington, High-Tech Gründerfonds, Bayern Kapital Strüngmann, Hopp or MIG are frequently heard in connection with biotech financing. More and more business angels are also involved in this area. But overall, and especially compared to foreign markets, the numbers are still modest. A total sum for 2018 of EUR 369 m invested in venture capital in German biotech companies is put into perspective considering that BioNTech alone was able to raise EUR 225 m in the course of a single financing round at the beginning of this year.

Continued need for external financing

But what will undoubtedly never change, because of high development costs, is that it will probably never be possible for young companies to finance their own

Thank you*

*) The issue “Investing in Biotechnology“ was created with the support of

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projects out of their own pockets until they are ready for the market. The need for external financing therefore remains. A corporate action should be better implemented when an opportunity arises – not when the need arises. Here, the company's management always needs to determine not just the dimension of financing but also the right time. The procurement of equity as opposed to borrowed capital will probably continue to prevail, but one must remember the imponderability of clinical developments. Strategic partners as investors have been experiencing a veritable upswing for some time now. Because Big Pharma is hot on innovations from Biotech! As a result, most of the partnerships between the big pharmaceutical companies, which rely on innovative ideas to fill their development pipelines, and smaller biotech companies. This is a classic win-win situation. But both parties should proceed with caution, because the choice of a strategic (financing) partner can have long-term consequences. Although the young companies often benefit from important resources for further clinical development, resources also give far-reaching rights and powers. Another form of partnering is the out-licensing of individual projects to larger pharmaceutical companies. The funds thus obtained can be used to further develop the main drug candidates.

The appeal of the IPO

The alternative IPO has its own special charms, but also has its own challenges. The IPO is particularly suitable for those companies that are well advanced in the clinical development of their products and need a lot of capital for further development. European biotech companies usually prefer an IPO during a clinical phase 2 or later, whereas in the US, companies in earlier phases are increasingly finding their way onto the stock market. Nevertheless, German biotech companies are still too often strangers to the stock market floor. The multi-country exchange Euronext, with their TechShare program, offers an easier way to prepare for an IPO and is apparently quite successful. However, inexperienced companies should note that an IPO binds high financial and organizational resources. Medical biotechnology companies daring to take the plunge must observe a variety of regulations – especially if the IPO takes place abroad, as has been the norm for German biotech stock market candidates in recent years. Another important aspect: every IPO is influenced by the current market environment. Not infrequently, planned IPOs are postponed or even cancelled in times of economic uncertainty or high market volatility. And, finally, the funds raised through an IPO are typically not enough. Further capital measures later on, through the placement of additional shares, are therefore generally seen as a given.

Conclusion

There is a promising biotech scene in Germany, but financing innovative developments, especially in the medical biotech sector, remains a challenge. There are financing gaps, particularly from Series B rounds of financing, which can only be closed by increasing the involvement of foreign investors, primarily those from the USA and Asia, corporate VCs, and business angels and family offices. This is unlikely to change much in the future; the cautious investor mentality in Germany knows how to prevent this. And domestic biotech IPOs, eagerly awaited by observers, will probably "only" continue to take place abroad. This fact is not really disturbing. ■

Venture capital and the capital market are key

The German biotech industry and its policies – challenges and possible solutions

German dramatist Friedrich Hebbel once said, "'if' is the most German word of them all." If the conditions had been right, if the situation had been different, an attempt would have been made. The Germans swear by safety; nothing is done without thorough scrutinisation. This idiosyncracy is what made the German economy blossom – now, however, it has become the reason why innovative people are emigrating, as can be seen within the biotech industry. Germany may be fostering domestic scientific knowledge as well as solid research, but developing solid foundations into successful companies in fact requires risk propensity, capital and entrepreneurial spirit. Founders are more likely to find this triad of prerequisites outside of Germany – especially in the USA. **By Isabella Bauer**

Illustration: © Coloures-Pic – stock.adobe.com

Only 28% of German biotech entrepreneurs considered the political climate within Germany's biotech industry to have been positive in 2018, with another 28% seeing an improvement over the year preceding it, according to Bio Deutschland figures. Peter Heinrich, chairman of the sector association's executive board, sees a connection between popular sentiment and the political development – after turbulent times following the Bundestag elections, the situation is now simmering down. "This goes to show that companies require a stable framework in order to be able to plan properly," says Heinrich. German politicians are endeavouring to create this framework – through the "Biotechnologie Agenda", for example. Christian Hirte, parliamentary state secretary at the Federal Ministry for Economic Affairs and Energy and member of the Christian Democratic Union (CDU), says, "Biotechnology is one of the key technologies. Peter Altmaier, Federal Minister for Economic Affairs and Energy, explicitly stated that it is a 'game changer technology' and that Germany must absolutely become one of the leading countries in this area. The agenda is being developed at full speed."

Peter Heinrich, Bio Deutschland

Exceptional financing solely responsible for volume increases

That is good news – Germany is hardly a leader in this industry at the moment, which becomes especially apparent when looking at financing figures. At first glance, the 2018 figures look rather pleasing: German biotech companies managed to collect EUR 369 m in venture capital; in comparison to merely EUR 236 m in 2017. However, this increase largely stemmed from a single company, namely BioNTech, who raised EUR 225 m in January 2018. Biotech companies made EUR 693 m through stock exchanges, with Qiagen's EUR 445 m bringing the largest contribution to this figure. Heinrich is aware of these exceptional investments, and postulates: "We direly need a better capital market ecosystem in Germany so as to facilitate access to capital for all companies."

2018 – Only one IPO in Germany

Especially when compared to their international counterparts, these figures no longer look so great. Biotech companies in the USA attained USD 11.3 bn in venture capital; capital increases via stock exchanges exceeded USD 20 bn for the first time in history, according to EY's biotech report 2018. Furthermore, Germany saw exactly one IPO; the USA, 29. This means that German companies take their IPOs to the USA. MorphoSys, a rare beacon of entrepreneurial light in the local biotech industry, achieved a dual listing on


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Nasdaq in April, its IPO being the largest to date of a German biotech company in the USA.

Tax reliefs as possible measures


Dr Siegfried Bialojan, EY

Venture capital and the capital market – Dr Siegfried Bialojan, Head of EY's life science centre, concurs that these are key to Germany's biotech industry. "Germany's promotion of research, driven by politicians through numerous programmes, is ample and extensive," he says, adding that this results in significant potential. A lack of financing, according to him, is the reason why attempts at translating this potential into innovation on the market have been unsuccessful. "We are aware of this problem, but we continue to lack viable solutions." Bialojan suggests the creation of a better framework for investors in a form similar to gearing incentives, where the interest paid on a loan is normally tax-deductible. "No such incentive exists for equity stakes." Bialojan goes on to explain that there is already a trend towards overly cautious and risk-averse investing, and that it is being reinforced by a lack of stimuli. "Venture capital investors bear the full risk that comes with their investments. Instead of being rewarded for successfully investing, however, they are punished by being forced to pay taxes on their profit." Suspending the collection of capital gains taxes or flat-rate taxes under certain conditions, he adds, could be a viable way to boost Germany's venture capital culture.

"The powers that be" cannot simply order more venture capital


Dr Claus Kremoser, Phenex Pharmaceuticals

Dr Claus Kremoser, CEO of Phenex Pharmaceuticals and member of Bio Deutschland's executive board, shares a similar view on the matter: "Other than Creathor and Wellington, I do not see any real investors in Germany. That is just sad," he says, adding that family offices and other investors need to be prepared to invest larger sums of equity into the biotech industry for more funds to be created. "And this will only happen if investors see lucrative exit opportunities." According to Kremoser, politicians need to come up with a clear strategy to build a "capital market food chain", from seed investors to crossover funds at stock exchanges. After all, he adds, the powers that be cannot just order more venture capital. Kremoser believes that concrete action is required: "One interesting potential measure would be to make returns on capital investments in biotech companies tax-free under pre-defined conditions." Two experts, one opinion. Some politicians do not quite agree, however. Hirte admits that there is room for improvement on the German venture capital market, as compared with its international counterparts: "We need to improve in this department," he concedes. His proposed solution, however, is quite different: "The newly founded 'KfW-Beteiligungsgesellschaft' will provide innovative companies with EUR 2 bn. Furthermore, we are planning to set up more financing companies, e.g. in the form of a tech growth fund."

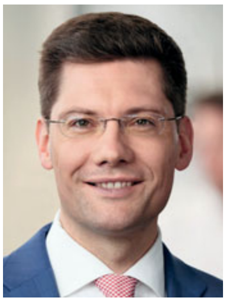
Photo: © Jan Kopetzky

Christian Hirte, parliamentary state secretary at the Federal Ministry for Economic Affairs and Energy

The capital market: Another "patient"

Whether or not these ideas bear fruit, another "patient" is in dire need of attention – the capital market. "During the last few years, there was some hope of setting up Euronext as a pan-European stock exchange. At the moment, however, this project is rather regressive," says Bialojan, further stating that biotech companies are again increasingly eyeing Nasdaq, "because there they can find investors who have an actual understanding of this industry, and the markets they need." The government cannot afford to allow this jumping-ship phenomenon to go on, he claims: "You cannot just idly watch as companies that were fed German aid money end up creating value elsewhere." Bialojan reiterates that Germany's capital

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markets ecosystem is suffering from a lack of investor incentives; in addition, he has spotted a cultural problem: "Germany's equity culture is generally underdeveloped. We need to initiate and establish a debate on this matter among the public."

"We lack business programmes"

Kremoser has furthermore identified a "mindset problem", and not just in terms of any sort of generally positive stance towards stock exchange listings: "Innovation does not exclusively stem from springboard innovation agencies which have Nobel Prize laureates carefully sorting out what they consider to be brilliant ideas. That is utter nonsense." He claims that instead, economic thinking is required: "We need people who say, 'I like this idea because it is profitable.'" This is more prevalent in the USA, he says, adding that investors and pharmaceutical corporations act more aggressively there. Bialojan furthermore points towards the country's successful incubators and company builders, stating that in the USA, founders have the environment and infrastructure necessary to focus on their business idea exclusively. "Meanwhile, Germany is focusing on the funding environment, which is typical. We lack business programmes."

Conclusion

Kremoser and Bialojan agree that it is clear what the German government and parliament need to do: boost venture capital and the capital market by creating tax incentives, thereby rewarding risk propensity; as well as promoting entrepreneurial spirit so as to convert innovation potential into economic strength. Kremoser states: "The system is sufficiently dynamic. We are every bit as intelligent as the Americans, and we have a sufficient amount of private capital – it is just not put to use. If proper measures are taken, we could create thriving environments within five years." There it is again, the most German word of them all, "if". ■

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Tanja Nickel and Katharina Obladen, founders of UVIS, disinfect escalator handrails with UVC light. The start-up benefits from the NRW.BANK’s early stage financing, which supports entrepreneurs in North Rhine-Westphalia with a wide range of development products. Moreover, the state development bank acts as an intermediary between companies and business angels, making them the ideal partner for private investors in search of new business opportunities.

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"When it comes to drugs, artificial intelligence is highly interesting"

Tech Talk – Interview with Dr Werner Lanthaler, Evotec

In 2018, German biotech companies raised more money than ever before – a total amount of more than EUR 1 bn in venture capital and other types of equity was attracted according to research published by Bio Deutschland. A great many developments are changing the biotech industry, ranging from active ingredients that combat causes of disease to artificial intelligence.

Photo: © leowolfert – stock.adobe.com

VC Magazin: What are the pivotal developments on the market for active ingredients used to treat disease?

Lanthaler: Markets which continue to lack active ingredients that combat the cause of a disease directly are especially interesting in the pharmaceutical industry. Take type 1 diabetes, for example, the symptoms of which are kept in check by administering insulin. The patient receives treatment for their symptoms, but not for the cause of disease, which for type 1 diabetes is often a lack of beta cells in the pancreas. For this reason, our approach is to replicate beta cells which the patients may then be injected with. There are at maximum four companies in the world that have the technology to do this. For some diseases, such as hepatitis C, causal therapy is already available; rather than merely reducing the amount of pathogens as in the past, it is now possible to treat its cause by means of different combination therapies.

> *You need to focus on what you can do better and bring to the market faster than the competition.*

What volume do the markets for such active ingredients generally reach?

Let us stick with the example of diabetes. Roughly 8% of the world population suffer from it; the insulin market's volume amounts to approximately USD 40 bn a year – the market volume for a product that successfully treats the cause of diabetes, however, would be several times greater. If there were a causal remedy for Alzheimer's – current medication is hardly effective – its market would be massive. Costs for Alzheimer's treatments are expected to reach USD 2 tn by 2030, and patient numbers are estimated to climb to 131.5 million by 2050. Causal remedies for diseases with much lower numbers of cases, such as Huntington's, a disorder affecting the central nervous system, may also have considerable potential, as there is no competition as of yet – which is the reason why they can be sold at high prices, justifying research and development costs. You see, drug development is becoming more expensive, with financial returns often dwindling. A study published by Deloitte has found that development costs for innovation projects, on average, rose from roughly USD 1.2 bn in 2010 to almost USD 1.6 bn in 2015, while peak turnovers dropped from USD 816 m in 2010 to USD 416 m, likewise on average.

ABOUT THE INTERVIEWEE

Dr Werner Lanthaler has been CEO at **Evotec** since 2009. He had previously held the position of Chief Financial Officer at Intercell AG, a venture capital funded biotechnology company he helped develop into a globally operating vaccine specialist. From 1998 until 2000, he served as director of the Federation of Austrian Industry, after working from 1995 until 1998 as a senior management consultant at McKinsey.

Evotec (ISIN DE0005664809)

Source: Tai-Pan

Researching active ingredients to treat causes of disease may take decades – how do you set up a viable business model in this industry?
A "copying strategy" will not work for any company; e.g. no one is capable of producing cheaper and better insulin than the current market leaders. Consequently, you need to focus on what you can do better and bring to the market faster than the competition. Only when we know we can be first or the best in what we want to accomplish do we allocate research costs. We often finance early-stage research of new medication approaches on our own, but upon entering clinical research at the latest, we will enter into a partnership with a large company, such as Sanofi, that can handle the considerable development costs. In contrast to other biotech companies, however, Evotec is profitable even during development stages, as we offer our research activities as a paid service. The market for drug discovery outsourcing is growing rapidly; its volume had grown to USD 12.3 bn by 2013, according to a study published by Visiongain, and is expected to more than double by 2020, reaching an estimated volume of USD 29.7 bn.

What will be the most significant change in the biotech industry in the years to come?
Using artificial intelligence for discovering and developing drugs, and especially for chemically developing new molecules, is an incredibly interesting prospect. In this process, artificial intelligence is employed to identify the molecules that best bond with a certain target protein and are the most promising for further development, all before the first test. IPSCs, i.e. induced pluripotent stem cells, are likewise worth mentioning, for opening up great possibilities in cell therapy and diagnostics alike. Moreover, significant developments will take place in the research of the genetic predispositions of patient groups. The list goes on, of course; we will see, for example, massive progress where diagnostics, patient monitoring and patient-specific drug dispensation are concerned, thanks to the convergence of different technologies such as iPSCs, CRISPR, wearables and artificial intelligence. More and more of these will enter the market in the coming years.

What is your take on the biotech industry's financing landscape?
Biotech has become globalised. Many European venture capital companies are able to find good science just as easily as their US counterparts; finding European exit markets for follow-up financing, however, is disproportionately more difficult for the former. Europe is at a disadvantage in terms of growth stages – the USA's biggest advantage for biotech companies consists in its exchanges for growth stocks, such as Nasdaq. For this reason, assessing their chances of growth in the USA, where innovative biotech ideas are funded very swiftly and much earlier than would be the case in Europe, is essential for many companies. For ten years now, China has seen very aggressive, long-term investments in biotechnology so as to establish a leading position in this industry. Europe and the USA are still considerably ahead in terms of innovation, but China is catching up. Europe's greatest challenge is putting science into practice – this is where the "finish line" actually is. Biotech companies in Germany need to stop waiting for funds to come to them, and put their scientific success in the spotlight in a much more direct way so as to draw more attention to themselves as interesting investment opportunities. Furthermore, it is important that the same basic ethical standards are met by everyone; ethical asymmetries may otherwise distort competition, as was recently the case with the gene-edited "CRISPR babies" in China. Supposed tolerance with regards to ethical questions must not become a location advantage.

Could you name a specific example of a successful venture capital-funded biotech company, please?
Denali Therapeutics, a company on the US West Coast that conducts CNS research – a field abandoned by many corporations. The amount of money necessary to begin conducting CNS research is unimaginably high, especially in Europe. When countries are equally developed in terms of science, the competitive edge is found in better access to capital – that is the reason why the US West Coast and East Coast are home to many biotech companies.

How does Evotec find companies for M&A or partnerships?
We employ a permanently active monitoring process, and for the future development of our company, we have devised an action plan containing mostly organic, but also some inorganic growth targets. Our monitoring team is made up of our business development division as well as all of our 2,000 scientists, brought together in "corporate development". This is how we acquired Aptuit, a company for integrated drug discovery, for approximately USD 300 m in 2017, for example.

Dr Lanthaler, thank you very much for this interview.

The interview was conducted by Georg von Stein.

"The English language is an integral part of capital market communication"

Interview with Marlen Schrader, Member of the Management Board and Chief Sales Officer, EnglishBusiness AG

The English language plays an extremely important role in financial communication throughout German-speaking Europe. We spoke with Marlen Schrader from the language services provider EnglishBusiness about topics such as the possible consequences of Brexit on corporate culture and language.

Plattform Life Sciences: Ms Schrader, just some quick background information for our readers: you provide English language services. What exactly are they?

Schrader: Generally speaking, we help internationally growing companies communicate successfully across language and cultural barriers. Specifically, we support our customers through translation and proofreading their written financial communications and public relations material. Our Training offerings cover everything from language training to all aspects of business communication.

Speaking of the English language, Brexit is an ongoing and unresolved challenge for European and British companies. What does the withdrawal of the United Kingdom from the EU mean for the DACH region?

It's very difficult to give a concrete answer to this question, since barely any details have been finalised so far. But while the legislative situation remains uncertain, companies have been guarding their interests by moving jobs and assets out of the UK. In the financial sector Frankfurt has benefitted from banks moving from London.

On the other hand, London-based EU agencies have moved to European cities outside of the DACH region. Paris got the nod over Frankfurt in hosting the European Banking Authority. The biotech sector will be affected by the EMA's move to Amsterdam. It has been well documented in the press how this cost the UK 900 jobs. This also highlights the problem that companies will potentially face different regulations for biotech and medical products in the EU and the UK. This will affect everything from production to testing and export.

> *If entire teams from London, for example, relocate and merge with the German staff, it is fully possible that English will become the internal corporate language.*

And, specifically, what kind of impact will Brexit have on company culture (particularly on corporate language)?

I don't think that the corporate culture of all companies will be affected. Things could get interesting for us as service providers, but also especially for international companies with subsidiaries in Great Britain or Northern Ireland. We can assume that teamwork and communication between subsidiaries will change. The biggest changes will certainly happen when company headquarters are relocated to mainland Europe. If entire teams from London, for example, relocate and merge with the German staff, it is fully possible that English will become the internal corporate language. Yet the hurdles will be cultural in nature, in addition to linguistic. People in England are known for being extremely polite. If you aren't prepared for that, it can clash with German directness. That's why we focus on overall communication in addition to the language aspect. So, when teams from different locations are combined, we assist the change process, help to bridge cultural differences, and support internal and external communication.

Ms Schrader, thank you for the interesting conversation! ■

The interview was conducted by Holger Garbs.

ABOUT THE INTERVIEWEE

Marlen Schrader is a member of the Management Board and Chief Sales Officer at **EnglishBusiness AG**, a consulting firm for international communication in Hamburg and Frankfurt. She studied English language and literature at the Martin Luther University in Halle-Wittenberg and was awarded a master's degree in Applied Linguistics with honours at the University of Newcastle, Australia, in 2010. She has been working in the translation industry since 2011.

20 Years of BioPark Regensburg

Successfully looking back and looking forward for the Cluster in East Bavaria

Panorama of Biopark office buildings

In 1999 BioPark Regensburg kicked into action with its first building and today with 18,000 m² is the second biggest center of its type in Bavaria. Together with its subsidiary enterprise TechBase, currently over 30,000 m² of floor space is available in the technology and startup centers on the university campus in the city on the Danube with 166,000 inhabitants. For years prognostic studies have counted Regensburg as being amongst the most dynamic and fastest growing municipalities in Germany. A reason for this was and is the consistent economic promotion of the city, which with its active business and cluster policy has had a significant influence on the innovative location on-site.

"Small but fine" has been the motto time and again succeeding in bringing the decision makers spanning different parties in the cathedral city to the table and bringing them together on the way towards innovative projects. All of the building projects were able to be realized by funding from the EU, Federal Government, State of Bavaria, City of Regensburg and private equity. As an enterprise of the City of Regensburg BioPark Regensburg GmbH has been able to constantly further develop its cluster policy in the Regensburg BioRegion beyond its sole leasing business. It is a region certified in East Bavaria with a Silver Label in accordance with the European Cluster Excellence Initiative. In particular the interdisciplinary linking of biotechnology with other industries such as sensory technology has led to new industry branches at the location.

Today over 50 companies with almost 4,000 employees are active in the Regensburg BioRegion, a good ten times more than 20 years ago. In this period of time we have successfully been able to bring 64 startup companies to the Business Plan Competition for North Bavaria. To date the companies have acquired 661 million €, half as private equity and a quarter of this as venture capital or funding.

The success has many parents. The location is directly on the university campus surrounded by two universities and four clinics. The consistent support by the City of Regensburg and the State of Bavaria. A self-supporting BioPark Regensburg GmbH. The stakeholders on-site from university and businesses and of course the successful startups with their innovative applications.

With our youngest project "Healthcare Regensburg – managed by BioPark" we are just now expanding the next interdisciplinary cluster in healthcare in the region with the support of the State of Bavaria. For this we have produced a Healthcare Masterplan which denotes the potentials and recommendations for action for Regensburg and the Region in this field. One point of specialty is of course digitalization. For the "Digital Health Initiative Regensburg" we are organizing innovation days e.g. in caregiving or supporting the networking of regional stakeholders for the exchange of data for multiprofessional and interdisciplinary care in the whole of East Bavaria. With an incubator in the field of medical engineering and accelerator in the field of healthcare we are promoting innovation and startups in regional healthcare.

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Chinese investments in the European biotechnology sector

Overcoming challenges in cross-border collaborations

The number of investments and M&A transactions involving Chinese investors and targets in Europe has continuously increased in recent years. Chinese foreign direct investments in Europe hit a record of EUR 65 bn in 2017, compared with less than EUR 2 bn in 2010. A decrease in this amount in 2018 was largely caused by new screening regulations in Europe and domestic political changes in China. The underlying trend of Chinese investment in Europe is, however, stable from an economic point of view. Evidently, Europe has become progressively more attractive for Chinese investors.

By Peter Homberg

Illustration: © Eisenhans – stock.adobe.com

While it is not uncommon for transnational transactions between European targets and Chinese investors to fail due to cultural and communicative differences, significant progress has been made to help ensure greater successful transactions. Beyond the intrinsic challenges with R&D, legal hurdles have to be overcome and other critical factors must be taken into account in order to have successful cross-border collaborations.

Chinese market: Highly intense competition

Reasons for investments and acquisitions from Chinese companies in European biotechnology companies are inter alia an easy market entrance into the European market as well as the outstanding technology and expertise of European companies. Europe traditionally has an excellent education and innovation base, which is very valuable for Chinese investors. The Chinese biotechnology market is also considered to be largely saturated and is therefore subject to a highly intense competition. Furthermore, investments from China in US biotechnology companies are facing increasing controls and approval procedures and are generally more expensive. Diplomatic relations between China and the US have also become more and more strained. Therefore, investments in European and, especially, German biotechnology companies are very interesting for Chinese investors.

Nevertheless, several challenges have to be overcome by Chinese investors in dealing with European and, particularly, German target companies.

From a Chinese point of view, the first legal hurdles for investing in Europe and Germany are China's outbound investment regulations. Chinese investment projects abroad shall be subject to prior review and approval by the competent authorities in order to determine whether the foreign investment constitutes a capital flight. This can lead to negotiations being extended for several months. Reforms that do not remove control but are designed to simplify administrative procedures and strengthen the regulation have already entered into force.

Regarding German foreign inbound investment rules, investments are subject to additional reporting obligations for investments in certain sensitive areas, critical infrastructures and other relevant sectors. Some of them have to be examined by the Federal Ministry of Economics and Energy and may be prohibited by the authorities.

The European Union is also expanding its foreign inbound investment rules, having started negotiations about implementing an EU-wide framework for screening foreign direct investments. After the European Parliament gave its support for the proposed European framework in February 2019, the Regulation will enter into force once the Council also has given its approval. Currently, 14 member states of the European Union have national screening mechanisms in place. Although they may differ in their design and scope, they share the same goal of preserving security and public order at the national level. Several member states are in the course of reforming their screening mechanisms or adopting new ones.

Different interests

The interests between investors and targets are sometimes very different. These divergences are illustrated in the following example of transnational collaboration between Chinese investors and German targets.

In 2017[1], the German biotechnology sector included 646 companies with 21,860

1) Please note that key figures for the German biotechnology sector in 2018 have not yet been published.

ABOUT THE AUTHOR

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employees. The annual turnover amounted to EUR 4,105 bn. EUR 673 m was financed in this area. Intellectual property is the most valuable asset of a biotech company. Its validity, maintenance, prosecution, defense and territory are core aspects of investments in this area.

While Chinese investors will be looking for a high return on their investment, the German authorities often fear a sellout of German high-tech industrial stocks. Although foreign investments fuel growth, innovation and employment, German biotechnology companies have a special interest in the continuation of the company in Germany and therefore generally require a high sense of responsibility for the employees even after a transaction. They are especially concerned about a relocation of the entire company to China, whereas Chinese investors look for profitable investment targets, easy entry into the European market to expand their business area, a more established international reputation for their own company and optimization of their investments to efficient business structures.

Furthermore, soft factors such as cultural and communication aspects must also be taken into account.

Cultural differences are still significant. They are most evident in the conduct of negotiations. While German corporations often let their lawyers negotiate, Chinese decision-makers often participate in the negotiations themselves. Points already negotiated are therefore often renegotiated during the process. It is also part of good manners for Chinese investors to first get to know each other for several meetings before the actual negotiations begin. In addition, negotiations do often not end with the notary appointment for the Chinese business partner, but – unlike in Germany – continue afterwards.

Cultural particularities should be sensitively observed

Regarding communication aspects, modesty and restraint are highly important in Chinese conversation. Chinese business partners often cover up what they really think, whereas in Germany, both problems and positive aspects are communicated directly. Goals and expectations are addressed in one of the first meetings. Transparency, determination and reliability are very important factors for German business partners. For German companies, great importance is also attached to formal written agreements, punctuality and appropriate formal clothing. A polite greeting in Germany involves a handshake with eye contact, whereas a Chinese polite greeting involves handing over one's business card.

Finally, language barriers can also lead to a significant extension of the preparation of contract documents and negotiations.

A practical solution to overcome in particular cultural and communicative divergences is, above all, thorough and careful preparation of the negotiations beforehand. A qualified translator can help overcome language barriers. The cultural particularities should be sensitively observed. Thus, respectful behavior can be maintained in consideration of the respective foreign culture. Overall, support from a team with experience in conducting negotiations with Chinese companies should be used to understand the various aspects of such cross-border transactions and to overcome them. ■

A full spectrum of options

Managing your patent portfolio to satisfy investors' expectations

Professional investors like VC firms or business angels understand the importance of Intellectual Property (IP) in valuing a business. It is a reasonable expectation that businesses with the appropriate IP protection in place are more likely to maintain a sustainable competitive advantage, mitigate financial risks and succeed at attracting additional capital. The strategic management of a patent portfolio can indicate to investors that the company is serious about market entry.
By Dr Andrea Schüßler

Illustration: © putilov_denis – stock.adobe.com

One of the most important issues regarding the protection of IP is the avoidance of inadvertent public disclosure prior to the filing of a patent application. If the invention is released into the public domain (e.g. by publication, poster, presentation, website postings, discussion with third parties) before a patent application has been filed, in many countries the patent may lose the right to obtain protection. In such cases, patent protection may be obtained in only a few countries such as the USA or Canada, which provide a grace period for inventors' applicants' own disclosures. This means that if the inventor or applicant has disclosed the invention in the public domain not more than twelve months prior to filing of the patent application, the disclosure does not provide prior art against one's own application. However, most countries worldwide do not have such a "safeguard" in place. Thus, if it is necessary to present the invention to potential investors, vendors, customers, suppliers or advisors in an effort to secure financing or commercialization of the product without having previously filed a patent application, a Non-Disclosure Agreement (NDA) should be signed. NDAs ensure that confidentiality is maintained, and protect the entrpreneur's rights. NDAs may be used for good business reasons but it should be clear that a NDA is a contract between two parties which may be open to interpretation before patent offices and courts.

The main advantages

Investors often want to know where an IP owner's inventions fit into the market relative to existing solutions and those of a potential competitor. Generally, pursuing IP demonstrates that the entrepreneur has thoughts about whether the invention is viable in the market and – even better – whether the invention may be shown to be superior to the competitor's product or method. In this regard, it may be concluded that having one's own patent portfolio has two main advantages: (1) potential competitors will have to make an expensive and difficult decision about whether they want to risk infringing on IP by entering the market; competitors may therefore decide to refrain from market entry, which gives the IP owner economic advantages, and (2) in the converse situation, if the competitor accuses the IP owner of patent infringement of the competitor's IP, the owner's IP can be used as leverage in resolving the issue. Instead of engaging in

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expensive litigation, the IP owner could cross-license and also gain access to the competitor's technology.

Investors also want to see that the IP owner has considered the strength and value of his IP. To offer meaningful protection, patent claims should not be too broad, since this would make them vulnerable to irrelevant prior art and they would scarcely survive opposition by third parties. On the other hand, the patent claims should not be too narrow, since competitors could then easily design around them. In developing a good patent strategy, decisions about the type of examination must also be made. A first question is whether the examination of the filed application should be accelerated, undertaken at the regular pace or delayed a bit. For instance, the IP owner may wish to delay the cost of examination until the potential market for the invented product develops further so that the potential value of the invention may be better known. A further reason for not speeding up the examination is to postpone patent validation costs to later stages. For example, a granted EP patent to be validated in about 20 European countries could easily cost EUR 30,000. This investment is often more difficult for a young start-up than for a more advanced company. However, smart investors know that the patent process takes time, and that there is value in patent applications beyond the future patent itself. Thus, though there should be patent applications on file, a long list of issued patents should not be a prerequisite for early-stage funding rounds.

Conclusion

As companies develop their products and processes and begin to seek commercial applications for their inventions, managing and securing patent protection will be vital to their long-term survival; this is essential for the growth of emerging technology companies. Such companies need to be prudent when transitioning from R&D to commercialization, since disclosing their technology without adequate IP protection in place can jeopardize their ability to secure future patent protection. However, due to the multiple filing and examination strategies worldwide, there is a full spectrum of options. Decisions can be made on a case-by-case basis dependent on the circumstances and the overall IP strategy. ■

Added benefits through combinability

Vira Therapeutics GmbH: Immunotherapy for cancer treatment

Immunotherapy promises to make a major contribution to the fight against cancer. The new company Vira Therapeutics has developed a virus that will specifically treat the illness in its advanced stages. **By Bärbel Brockmann**

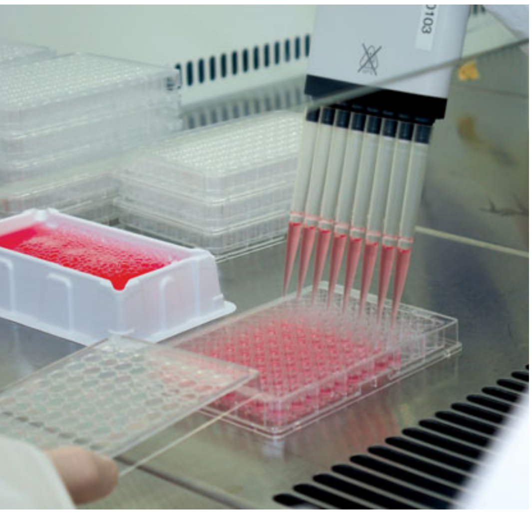


Photo: © Vira Therapeutics GmbH

Traditional cancer therapy uses a medication to fight a tumour directly. By contrast, immunotherapy attempts to change the body's own immune system so that it is in the position to attack and eliminate cancer cells by means of inoculation with a special virus. This therapeutic approach has been pursued in research for about ten years. The biotechnology company Vira Therapeutics GmbH works in this new field. It began as a spin-off of the Medical University of Innsbruck in 2013 and was acquired by the pharmaceutical company Boehringer Ingelheim in 2018, where it is now being run as a distinct unit.

Acquisition by Boehringer Ingelheim

Boehringer Ingelheim got on board with Vira Therapeutics in 2015 through its venture fund in the series A round of financing. One year later, they agreed on a purchase option – a first for the group. The option was exercised in 2018, and Boehringer paid EUR 210 m for Vira Therapeutics. Research is now continuing under the group umbrella. "It takes a lot of money to develop a therapy like the one by Vira Therapeutics in a clinic. This isn't possible with public university funds alone," says Dr Lisa Egerer, Chief Operating Officer of Vira. That's what gave her and professor Dorothee Holm-von Laer the idea to turn the project into a start-up early on.

Biotech entails a higher risk

The search for investors was difficult at first. It took a while until the first business angel got on board and public funds were procured. Egerer explains that the hesitation comes from the relatively high risk that a biotech development involves. "This kind of idea is more complex than in other industries. It is also difficult to have enough scientific data on hand to win over an investor," she says. The financiers who came on board were all very familiar with the subject. "Everyone knows, of course, that investing in biotech carries a higher risk. But when it's successful, it also results in a relatively high return on the invested capital," says Dr Knut Elbers, Chief Executive Officer of Vira Therapeutics and former Director of Boehringer Ingelheim Corporate Venture Funds.

Dr Lisa Egerer, COO, Vira Therapeutics

Dr Knut Elbers, CEO, Vira Therapeutics

Virus with a double effect

For its immunotherapy, Vira has created an oncolytic virus from two others which are harmless to humans. This virus works in two ways. First, it replicates in cancer cells and kills them. Then the viral infection also stimulates the immune system so that it targets the cancer cells. The therapy is aimed at advanced cancer which has already metastasised and which is no longer treatable with traditional methods. This approach can be combined with complementary technologies, which magnifies its benefits. Many experts in this field are convinced that there will never be just one single therapy – cancer is an ancient disease which is too complex for that. "The relatively new immunotechnology and its combinability inspired us to get involved," explains Dr Jan Adams, Managing Director of the EMBL Venture Fund, which was also invested in Vira before it was sold to Boehringer.

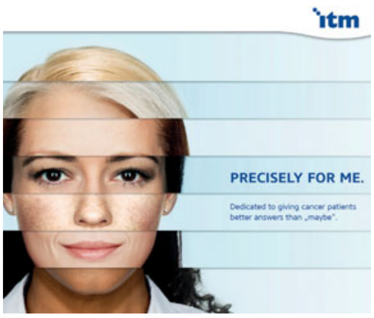
Outlook

The next big milestone is the start of human clinical trials of the new therapy, which has previously only been tested in mice. "We want to begin clinical trials as quickly and comprehensively as possible. We support Vira in this with the resources that already exist in our other companies," says Elbers. At the same time, possibilities for combining immunotherapy with other treatments will also be tested. When can we expect the first results? Elbers leaves it open: "We will try to have them as quickly as possible." ■

Who is Who in Life Sciences

3 industry players introduce themselves

With our "Who is Who", Plattform Life Sciences is building a bridge between Life Sciences and the capital market. The profiles, in the form of standardised questionnaires, provide information to facilitate initial contact with potential parters. You can discover more industry players online here: www.goingpublic.de/who-is-who



ITM Isotopen Technologien München AG is a privately held group of companies dedicated to the development, production and global supply of innovative diagnostic and therapeutic radionuclides and radiopharmaceuticals. ITM has established the GMP manufacturing and a robust global supply network for a new generation of targeted cancer diagnostics and therapies. Furthermore, ITM is developing a proprietary portfolio and growing pipeline of targeted treatments in various stages of clinical development. ITM's main objectives, together with its scientific, medical and industrial collaboration partners worldwide, are to significantly improve outcomes and quality of life for cancer patients while at the same time improving health economics through a new generation of Targeted Radionuclide Therapies in Precision Oncology.

ITM Isotopen Technologien München AG

Field of Activity
Precision Medicine, Precision Oncology, Targeted Radionuclide Therapy / PRRT

Products/Services
1) Development of targeted radiopharmaceuticals for cancer treatment
2) Therapeutic & diagnostic radionuclides
3) Equipment for Radiolabeling & Quality Control: iQS-Theranostics Synthesizer, iQS® Ga-68 Fluidic Labeling Module, Consumables (Reagent Sets, Cassettes), Quality Control Solution (radio-HPLC)
4) GMP Radiolabeling Service

Our lead candidate Solucin® (n.c.a. ^{177}Lu-Edotreotide) is currently under investigation in the phase III clinical trial COMPETE. COMPETE is an international pivotal multi-center phase III clinical trial evaluating the efficacy and safety of n.c.a. ^{177}Lu-Edotreotide (Solucin®) compared to the standard therapy with Everolimus in patients with inoperable, progressive, somatostatin-receptor positive neuroendocrine tumors of gastroenteric or pancreatic origin (GEP-NET).

Unique Selling Point
ITM is developing and producing medical radionuclides and radiopharmaceuticals of extraordinary quality and highest standard. ITM has established a global sales network and delivers radionuclides to more than 250 sites worldwide. We collaborate with over 30 distribution partners in more than 46 countries.

Membership in networks/associations
Bio^{M} Biotech Cluster Development GmbH, BIO Deutschland e.V., ENETS European Neuroendocrine Tumor Society, The Carcinoid Cancer Foundation, Inc. (Patient Organization)

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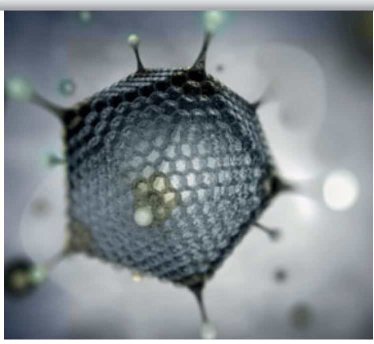

SIRION Biotech GmbH is positioned at the forefront of Germany's research drug industry, developing targeted strategies to deliver nucleic acids such as DNA or RNA into an individual's cells by viral vectors. Their technologies and services enable gene and cell therapy developers to improve innovative therapies for otherwise untreatable ailments and ultimately make them commercially viable for patients worldwide.

SIRION Biotech is well profitable, growing fast and commercially stable due to its widely applicable technology platform. To finance its current growth, the company is seeking further growth capital.

SIRION Biotech GmbH

Field of Activity
SIRION Biotech GmbH offer preclinical engineering and manufacture of viral vectors, large-scale collaborations to improve existing viral vector technologies and licenses to clinically applicable viral vector technologies and transduction enhancers. Customers are academic and commercial developers of gene- and cell therapies, including CAR-T cell therapies.

Ownership Structure and Financing
7 finance investors total; 4 private, 3 government. The company is profitable with 2-digit growth rates.

Partners
Big-Pharma and Biotech in the Gene-, CAR-T, and Immunotherapy field.

Technology
Technologies for increasing the mode of action of viral vectors to improve transduction efficiencies and circumvention of pre-existing immunogenicity.

Products/Services
Adenovirus, Lentivirus and AAV engineering and preclinical manufacture.

Unique Selling Point
Unique and novel Adenovirus serotypes, lentiviral transduction enhancers, access to AAV libraries to optimize capsid development.

Membership in Networks/Associations
Gene Therapy Networks worldwide

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Dieter Lingelbach (COO)


Dr Christian Thirion (CTO)

"The convergence of biotech and big data will have a strong impact on medicine"

Interview with Dr Holger Reithinger, Forbion

According to EY's biotech report 2018, Germany is home to 647 biotech companies employing a total 25,000 people and generating turnovers amounting to EUR 4 bn. Biotech is an important part of the German economy. Not to mention the fact that this is where a lot of research on therapies for diseases such as cancer or Alzheimer's is done – a significant bonus in a society that is struggling with demographic change.

Illustration: © Kurhan – stock.adobe.com

VC Magazin: According to the sector association "Bio Deutschland", German biotech start-ups raised EUR 369 m in venture capital last year. In what ways will investments in this sector be different in the years to come?

Reithinger: In terms of equity financing, Germany is part of a European trend. I am optimistic about the developments coming over the next two to three years. All across Europe, classic biotech investment companies such as Forbion, Life Science Partners or Andera have set up large funds and a few others are still in the fundraising stage. We have a great many fresh funds looking for opportunities. This will lead to more money flowing into the biotech industry – in Europe and Germany alike. The question is, will a greater number of companies benefit from this or will start-ups be more sustainably financed? I think there will be a mix of the two; more start-ups combined with a trend towards a more stable financing of companies.

> *Most young people want to work at the government or at a big company, where their job and pension are secured. You cannot expect entrepreneurship from someone with this mindset.*

So capital is available – what about the other side: what is your opinion on investment opportunities in Germany?

When it comes to the scientific basis, i.e. research and innovation quality, Germany is not "playing catch-up" with other countries. On the contrary, we are very well positioned in the international arena. Translation, however, is where things become difficult. This is a matter going beyond basic university research. Public funds – not counting programmes such as Exist or GO-Bio – struggle to finance the subsequent experiments, which are important for product development. Germany could do more here – e.g. by granting tax reliefs. Other countries are more active at this stage. This is only one side of the coin, however. We are also lagging behind in terms of teams. Our people are not as entrepreneurial as their counterparts in other European countries, such as the Netherlands, Scandinavia, or Great Britain. That is something we have noticed.

ABOUT THE INTERVIEWEE

Dr Holger Reithinger is General Partner at **Forbion** and heads the investment company's Munich office. Before joining Forbion in 2010, Reithinger was a Partner at Global Life Science Ventures and Director at the Healthcare Practice of 3i. He studied biology and is a member of the board of several life science companies–including Allecra and catalYm.

It is important that the business model is based on a highly innovative, internationally viable strategy.

How can we "jump start" this entrepreneurial spirit?
That would be a long-term project. Even our students show little interest in entrepreneurship – it's a matter of culture. In addition, there is also the German bureaucracy that needs to be tackled when founding a company. This scares people off. Let us not get carried away, however – all of this could be addressed. It is a simple matter of us not having it "in our blood". When asked about where they would like to work the most, young people say the government, or at a big company, where their job and pension are secured. You cannot expect entrepreneurship from someone with this mindset. Moreover, there is a massive "envy debate" going on right now. Those who are successful – financially, too – cannot talk about their success it without receiving a sour look. This, too, is a very difficult topic in Germany.

When looking at potential targets – when do you invest?
It is important that the business model is based on a highly innovative, internationally viable strategy. It has got to be a "must have". We are interested in start-ups that have that special "x-factor", this very special feature. A number of requirements need to be met: absolutely excellent, top science, neatly generated data, a defined disease environment. There needs to be a new understanding in order to mechanistically combat certain diseases as well as their origins. If we consider the data to be good enough, more questions need to be answered: what does the team look like, can it put the plans into action, and – most importantly –, is the patent situation clear and non-objectionable?

How would you summarise the past ten years – in the research of which diseases did biotech lead to key progress?
Oncology certainly took a big step forward thanks to immunotherapy. It set the treatment of different types of cancer on a whole new course. Immunotherapy is no universal remedy, but there are some groups of patients who benefit from this new form of therapy and may even be referred to as cured. Another important field is gene therapy. By now, these forms of treatment have somewhat matured, and gene therapy is already being tested in various indications. This is a challenge for our healthcare system. A gene injection may be effective for five years, in which the patients previously needed other – sometimes expensive – medication on a regular basis. The question is how a medication that saves the healthcare system EUR 200,000 a year, for example, will be assessed. This is a debate that our society will need to address in the future.

Which trends will be shaping biotechnology in the next decade?
We have learned by now that our understanding of biotechnology is not as far-reaching as we would have liked to think. This realisation harbours potential. Take the connection between the microbiome, nutrition and disease, for example. A hypothesis has been put forth that there is interplay between depression (and other classic psychiatric diseases) and the microbiome. From there it is not too great a leap to the idea that our lifestyle may actually be able to have an impact on our brain – through the bacteria in our colon. This is incredibly exciting. Understanding the interaction of the individual parts and the integration of these findings will play a big role in the years to come. This brings me to a second point: the convergence of biotech and big data. It will have a strong impact on medicine, however, in what direction, we cannot say at the moment. Medicine may become more personalised. In an ideal scenario, we will have a better understanding of how to treat certain diseases because much more data will be at our disposal.

What is your take on the different exit channels for a specialised biotech investor such as Forbion?
Our focus is to sell to a strategist. Trade sales are suitable for companies that develop a very lean product in an indication. The acquiring pharmaceutical company will, however, need to take care of further financing as the new owner. These companies do not turn a profit, after all. In recent history, it has become clear that pharmaceutical companies are no longer willing to finance risks on their own in the future. This is negotiated into the contracts; upon selling, we only receive a certain percentage of the agreed total sum. The rest is tied to the start-ups reaching certain milestones. This is different for platform firms. They have several products in different indications. Only in fairly rare cases will a big pharmaceutical corporation completely take over the company, for example when the platform is of particular strategic interest. For this reason, an IPO is the ideal path for us investors to take. The start-up can remain independent and develop its pipeline.

"

An IPO is the ideal path for us investors to take.

What are your thoughts on the European capital market in comparison with its international counterparts?
Ever since the New Economy crisis of 2001, we have had a massive problem in Europe. We have no stock exchange comparable to Nasdaq. The liquidity at European stock exchanges is a sorry sight. There are too few experienced investors who truly understand this industry. Where there are few investors, few companies will dare to list on a stock exchange. That is why we have, in comparison with Nasdaq, too few companies and therefore too few successes – a vicious cycle of sorts. We just need to be patient. There have been some successes, such as MorphoSys or ArgenX which broke through this cycle by means of a dual listing, a local one and one on Nasdaq. As a biotech founder, a Euronext listing may be a possibility, but only in combination with a second listing on Nasdaq.

Dr Reithinger, thank you very much for this interview. ■

The interview was conducted by Isabella Bauer.

New Visions!

In North Rhine-Westphalia, business angels are playing an increasingly important role in financing biotech start-ups

North Rhine-Westphalia is traditionally a strong biotech location. With more than 500 companies in the Life Sciences industry, over 100 of them with a clear focus on medical biotechnology, the state is an innovative center in the heart of Europe. Today, big names such as Bayer, QIAGEN and Miltenyi Biotech are considered to be pioneers in whose wake committed start-ups can develop. Support is also available from the BIO.NRW Business Angel Network. **By Holger Garbs**

The BIO.NRW Business Angel Circle is a group of active investors. Since 2010, more than 130 start-ups or their projects have been presented in this circle, in cooperation with VC investors, NRW.BANK and High-Tech Gründerfonds. Initially, they were primarily from North Rhine-Westphalia while today they come from all over Germany and Europe, including Iceland, Spain, Belgium, Switzerland and the Netherlands. For obvious reasons, not all the investments induced by the circle are becoming publicly known, unless part of the investors or invested startups do so. BIO.NRW also supports the platform www.startups4.eu for international start-ups, working in close collaboration with the European project EIT Health, one of the world's largest public-private partnerships in healthcare. The expertise in this network comes from more than 130 partners from the pharmaceutical and medical technology sectors as well as scientific institutions and universities.


Photo: © BIO.NRW

More than a classic pitch

Circle meetings do not merely involve pitches, but real presentations lasting a total of 18 minutes. A maximum of six companies introduce themselves in one evening. Due to the high demand, the meetings now take place about four to five times a year, at the Düsseldorf Steigenberger Parkhotel. And finally, in addition to financing, the circle supports the necessary coaching of the new companies. The refinancing of new biotech companies is another major concern of the circle.

Every March, BIO.NRW also organizes the International Business Angel Congress, which caters to investors and entrepreneurs and provides a platform for the exchange and discussion of current developments in the European Life Science financial community. This year, the congress took place for the eighth time and brought together not only entrepreneurs but also experienced speakers including Detlev Riesner, Qiagen co-founder and member of the BIO.NRW Business Angel Circle; Dr Jörg Goschin, CEO of KfW Kapital; Nooman Haque of Silicon Valley Bank; and Dr Kurt Höller, Director of Business Creation at EIT Health e.V. An international focus of the congress was Asia, and especially China and Chinese investors. Peter Homberg from the international law firm Dentons talked about "Singapore's Successful Technology Transfers" and Min Chen, a Wuxi Capital representative, spoke on "Funding Schemes in Chinese Provinces".

Success stories give companies courage

An example of success in the recent past is the financing of Düsseldorf-based NUMAFERM GmbH. In September 2017, the Evonik Group invested in the new company through its venture capital unit, together with High-Tech Gründerfonds and the Business Angels. Qiagen co-founders Detlev Riesner and Jürgen Schumacher provided seed funding.

Dr Sebastian Bühren, CEO and co-founder of EVORION Biotechnologies GmbH in Münster, reports on his positive experience with funding. The company develops high-performance cell culture and analysis systems for the precise characterization of cells and tissues in the field of biomedical research and development. Their focus is on applications in (immune) oncology, immunology and regenerative medicine. “We have been able to attract a small, very relevant group of biotech business angels as investors. In addition to capital, business angels can offer very valuable strategic and operational support. I think this is what is commonly referred to as ‘smart money’,” reports Bühren. “It is important to make sure that the group of business angels does not get too big and that they can also participate in later financing rounds, in the best case.” Sebastian Bühren is convinced that this is especially the case for start-ups at a very early stage, when business angels are almost indispensable. “Especially in the biotech industry, it is important to get in touch with relevant business angels who have a deep understanding of the industry as well as the opportunities, risks or timelines associated with a biotech venture. The acquisition of relevant business angels is a very time- and resource-intensive process. Structured access to business angels, for example via networks, is very helpful here. Our experience is that there are some very good approaches, especially in NRW, for the bundling of activities,” emphasizes the EVORION CEO. However, additional networks at the national or European level would be helpful. Public support for business angels would also be very helpful in reducing the thresholds for higher investments, if necessary.

Sebastian Bühren refers here to the INVEST program and names buzzwords such as “EIF / EAF” and the matching models of promotional banks. “It would take more of that. In addition, more favorable tax models would be beneficial, to attract more private investments,” said Bühren. At the beginning also moderator Dr. Garthoff commented on this point and the long awaited new tax rules in Germany, part of the coalition contract and now in a new draft of Ministry of Finance.

“Taken the advantage of tax rules in UK and on the continent esp. in France for investors, it is high noon to get active for Germany, especially in regard to support of private capital and equity taking.”

> *Biotech start-ups in North Rhine-Westphalia can hope for strong financial support.*

Conclusion

Biotech start-ups in North Rhine-Westphalia can hope for strong financial support. Networks such as BIO.NRW and the Business Angels Circle create the right conditions for innovations to pave the way to market. Above all, those responsible are aware of the cliff between series A and B funding rounds. Referred to as the “valley of death”, this still represents a high – if not the highest – risk in the financing sector. But business angels are no longer only involved in the context of start-up financing. They are increasingly also appearing in connection with follow-on financing, in collaboration with traditional VC donors or corporate VCs. As a result, these investors are becoming increasingly important stakeholders in the financing structure of new biotech companies – especially when they bring in their own expertise from science and industry.

Beyond Imagination

Exploring the value that M Ventures brings to the start-up ecosystem

M Ventures is the partner of choice for new biotech companies in their early stages (seed and series A) for several reasons. We are a group of scientists and investors who are passionate about novel discoveries and working together with founders to translate their discoveries into real-world solutions to problems in healthcare, and since 2016, also in life sciences, performance materials and new businesses. **By Therese Liechtenstein**

Photo: © metamorworks – stock.adobe.com

We are not afraid of rolling up our sleeves and supporting founders in company creation. In fact, this is what we love doing – and due to our experience in company creation out of academia and Merck spin-offs, we are particularly well equipped to support our companies in this fashion. As early-stage investors, we believe that it is important to support our companies beyond financing, through what is sometimes called "smart money". M Ventures' support includes access to our network, assembling teams, developing strategic direction and designing experimental and development plans, amongst many more activities.

M Ventures as partner of choice for entrepreneurs and co-investors

When looking at some of our spin-off success stories like ObsEva, one of the top ten European biotech IPOs in 2017, and Prexton Therapeutics, which was sold to Lundbeck in a USD 1 bn deal in early 2018, you will see a model that works and which has allowed us to build a reputation for early-stage company creation.

Our typical modus operandi is to syndicate with other top-tier investors specialized in the respective fields. This allows bringing several experienced funds together, which provides the best support for a start-up company, both in terms of value-added as well as financing. We pay particular attention to bringing in new investors who are best-suited for the different stages of the growing companies. To this end, M Ventures has a network of investors for all stages, and we are the go-to fund to approach for seed as well as follow-up financings.

M Ventures' Background

M Ventures was established in 2009 to take an active role in early stage investments and company creation in the fields most strategically relevant to Merck. The venture fund gave Merck a tool to become more engaged in the start-up environment, to give us a wider view on external innovation, and to allow us to strike relationships with other key investors and entrepreneurs, tapping into young and ambitious ideas beyond imagination.

Currently, M Ventures manages a EUR 300 m evergreen fund, with over 42 active portfolio companies (26 of which are in the healthcare space) as one of the most active corporate VC investors in the area. Since 2016, we have been operating four funds under the M Ventures umbrella, consisting of the most mature healthcare fund (a EUR 150 m evergreen fund), and the newly created life sciences, performance materials and new businesses funds (EUR 50 m evergreen funds, respectively).

ABOUT THE AUTHOR

Therese Liechtenstein, PhD, is an Associate in the healthcare fund of **M Ventures**, the strategic corporate venture capital arm of Merck. Previously Therese managed strategic projects for the healthcare business of Merck in Darmstadt, Germany. Therese has a PhD in immuno-oncology from University College London.

The healthcare, life sciences, and performance materials funds cover all three of Merck's business sectors, while the new businesses fund allows for crossovers between businesses, investing in digital innovation as well as for exploring new business fields. In our healthcare fund, we are looking for early-stage companies developing novel therapeutics in the areas of oncology, immuno-oncology, immunology and fertility. There needs to be a clear indication of first-in-class potential for us to take a closer look at an opportunity.

While we do love science and technology, what we really want to see is a "commercially relevant" product. We find that, as an investor, we often have a role of helping start-up teams translate their science and technology into real-world solutions.

Photo: © Tierney – stock.adobe.com

Advantages for Start-ups

From the point of view of a fledging start-up, there are significant advantages in engaging with M Ventures, in addition to the ones mentioned above. Firstly, incorporating the combined knowledge of Merck's R&D organization enhances development plans. We have often seen critical reviews by R&D either validate start-up plans and/or recommend the inclusion of key experiments to generate data supportive of a future exit.

Another key advantage lies in engaging with M Ventures is its evergreen structure. The ability to stay with the portfolio company exclusively based on the merits of the opportunity is a highly appealing proposition to founders; they know M Ventures capital is patient and willing to see through the volatility of development.

In summary, we believe M Ventures combines the best of both worlds: creating entrepreneurial environments where new ventures can blossom and providing Merck with complementary ways to grow and explore new areas. ■

New funding concepts for translational projects

Heidelberg and the Rhine-Neckar region are working on new ideas for biotech startup funding – early stage financing of translational research is a new focus

The biotech scene in Germany is growing continuously – slowly but steadily, despite the ongoing shortcomings of the European risk capital market. While funding clinical trials remains a challenging task, a new focus has emerged: earliest stage funding for translational research and biotech startups. **By Dr Thomas Prexl**

Photo: © TPHD/Thilo Ross

Heidelberg Technology Park, located right at the heart of the Heidelberg life science campus, houses the headquarters of both the BioRN research and industry cluster and the Heidelberg Startup Partners network. An ideal environment to design support measures for biotech startups.

Dr André Domin, chairman of Heidelberg Startup Partners, a joint start-up support initiative of Heidelberg‘s research institutes says “Today, the public sector dominates pre-seed financing in the scientific environment in Germany. Following research funding, the transition from research group to start-up is most often supported by federal programs such as EXIST Transfer of Research or GO-Bio.” These programs, provided by Germany’s Ministry for Economic Affairs and Ministry for Research, grant one million Euros or more to entrepreneurs-to-be to turn a research group into a start-up company. They are the go-to option for science-driven high-tech projects from German universities – essentially a safe and secure starting position.

Public money enabling scientific start-ups

However, public funding does have its downsides. Formalities are cumbersome, and applications are time-consuming. Most significantly, federal grants impose rigorous structures: a dedicated start-up team is needed, as well as an already existing patent family. While the reasons are valid, they do not always fit the objectives of a translational project. This is especially true for the early validation of scientific results – long before making decisions on intellectual property or spinning-off. Various players deal with these challenges, venture capital firms being one of them.

VC and pharma turn to translational funding

Heidelberg based EMBL Ventures is one of the venture capital firms investing in these early projects. “For our upcoming fund, we are discussing investing up to 10% in moonshot validation projects,”

ABOUT THE AUTHOR

Dr Thomas Prexl is Managing Director of **Heidelberg Startup Partners** and heads the start-up support office at Heidelberg Technology Park. He studied Business Administration at the University of Mannheim and received his doctorate at the University of Basel.

Fig. 1: BioRN life science research and industry cluster includes world-renowned research institutes as well as pharmaceutical companies and well-established biotech companies

Source: BioRN

says Dr Jan Adams, one of EMBL Ventures managing partners. "In collaboration with research institutes and their tech transfer units, we would like to identify promising projects. We are eager to stimulate translational research which we believe will be crucial for the development of new products and companies." This initiative could also supplement existing public programs.

The pharmaceutical industry is additionally involved in externalized translation. Dr Julia Schaft, Managing Director of BioRN, one of Germany's leading life science research and industry clusters, describes her interests: "We think that a joint commitment from academia and industry is key to translational success and have looked at various international models for facilitated technology transfer that could depict this in our region." A difficult task, given potential conflicts of interest between academia and industry, in pre-patent phases. "We have been particularly intrigued by the construct chosen by Apollo Therapeutics in the UK." Apollo Therapeutics is a joint venture between Imperial College London, University College London and the University of Cambridge together with AstraZeneca, GlaxoSmithKline and Johnson & Johnson Innovation. These research institutions and pharmaceutical companies have committed themselves financially to establish an independent, experienced drug discovery team to work with academics to design, fund and operationalize translational drug discovery projects with the aim of licensing these projects preferentially to the associated Pharma companies.

New forms of collaboration

"We provide translational funding and drug discovery expertise for biomedical projects," explains Dr Richard Butt, Apollo Therapeutics' Chief Executive Officer. "We support the development of intellectual property and increase both the probability and the speed of turning research results into novel medicines." Forty million British pounds have been made available; large parts have been invested already. The intellectual property can be licensed out – not necessarily to the four corporations involved.

"Impressed by the compelling concept and professional setup of Apollo Therapeutics we became a partner of this collaborative venture when it started three years ago. We are now very excited to see the first matured projects coming out of this partnership," says Thomas Hegendoerfer from Johnson & Johnson Innovation. "We believe that other research hotspots could also benefit from similar forms of translational cooperation. Heidelberg could undoubtedly be one of those locations." The environment and infrastructure around Heidelberg are indeed similar to those in the greater Cambridge area: four different research institutes, the Heidelberg University, the Heidelberg University Hospital, the German Cancer Research Center (DKFZ) and the European Molecular Biology Laboratory (EMBL) are focusing on advances in drug development and diagnostics for cancer or cardiovascular diseases. The Rhine-Neckar region features numerous headquarters or subsidiaries of pharmaceutical companies and well-established biotech companies.

"We are very eager to join forces in Heidelberg and the Rhine-Neckar region and try and establish new ways to quickly and successfully facilitate translation," concludes Dr Gitte Neubauer, chairman of BioRN. She is also a founder of the EMBL spin-off Cellzome, now a GSK company, and is aware of the potential pitfalls of turning academic results into standardized industry research. "We could all benefit from more collaboration to move good ideas from bench to bedside as quickly and effectively as possible." ■

DBT2019 LUNCHEON: HAVE YOUR SAY!

Join Richard Butt (Apollo Therapeutics), Gitte Neubauer (Cellzome/BioRN), André Domin (Heidelberg Startup Partners/Heidelberg Technology Park) and Julia Schaft (BioRN) to discuss new ways to enable and support translational research and biotech startups. They will be present and open for your questions and debate on **9 April 2019 at 12.15 p.m. during the German Biotech Days Luncheon in Wuerzburg.**

"Risks and decisions are more readily taken, generally speaking"

Interview with Dr Alexander Schuth, Denali Therapeutics

Patients with Alzheimer's disease suffer from memory impairment, a restricted ability to think and judge on their own as well as a steadily progressing change in personality. Alois Alzheimer first described this disease in 1906, and no real treatment or cure exists even today. The biotechnology industry is doing its utmost to find treatment options for the disease – and it is making progress. One example is Denali Therapeutics, which is using genetic information on the origin of this neurodegenerative disease as a therapy approach. The company was founded by a German in the USA – certain location advantages speak for themselves.

VC Magazin: Dr Schuth, your company, Denali Therapeutics, is named after the Denali in Alaska – the tallest mountain in North America. I daresay this is no coincidence.
Schuth: In the language of Alaska's indigenous people, Denali means "the big one". To us, Denali bears two meanings; the first one being "the big challenge", as neurodegenerative diseases are in all likelihood modern medicine's greatest challenge. Millions of patients suffer from them, and actual cures have yet to be discovered. The second meaning we associate with Denali is "the big opportunity" – the opportunity to find ways of combating such diseases.

Will we "defeat" Alzheimer's disease?
That is, of course, our long-term goal. We wish to either stop the progression of Alzheimer's or to prevent it from developing in the first place. This is intended to be accomplished by means of a prevention scheme. Slowing it down would already be a massive therapeutic success in the short term.

What do you understand by "short-term" and "long-term", respectively?
We have medications going through clinical trials right now. We will know whether or not we are on the right track in slowing down Alzheimer's in a few years. If you want to stop this disease in the long term, you need to think in periods of time longer than ten years.

You founded the company in the USA primarily because you had a pre-existing network at your disposal. Are there any other advantages associated to the location?
Venture capital is available in greater volume. Risks and decisions are more readily taken, generally speaking. In addition, there are structural advantages, such as shorter periods of notice. In California, for example, notice must be given only two weeks in advance – whilst in Germany, executives are required do so six months ahead of time. If it had not been for these short periods, we would not have been able to set up a full team in a matter of weeks.

Can the European capital market keep up in this department?
The IPO is an established path in the USA. The American market therefore has a complete infrastructure geared towards this purpose at its disposal, including law firms, banks and investors. A substantial amount of US investors consists of biotech experts who truly understand technology and science and possess the patience and endurance needed for research; liquidity is significantly higher.

Let us talk about people now: which region has the better entrepreneurs?
The classic German thoroughness is not to be underestimated. We collaborate with several German companies, so I know first-hand that they have an extremely solid repertoire of scientific expertise. America, in contrast, has always been the "land of the pioneers", the country of innovation. Failure is no big deal; you can just start from scratch any time. Furthermore, success stories are abundant in the USA, especially in Silicon Valley. All of this has created a dynamic that is highly conducive to the founding of new companies.

We are reaching ever older ages. As an expert on old-age diseases, do you consider an increasingly prolonged lifespan to be worth striving for?
Perhaps. The ratio of healthspan to lifespan is the real crux of the matter, i.e. for how much of your increased lifespan will you be in good health. That is to say, so long as a reasonable quality of life remains.

Dr Schuth, thank you very much for this interview. ■

The interview was conducted by Isabella Bauer.

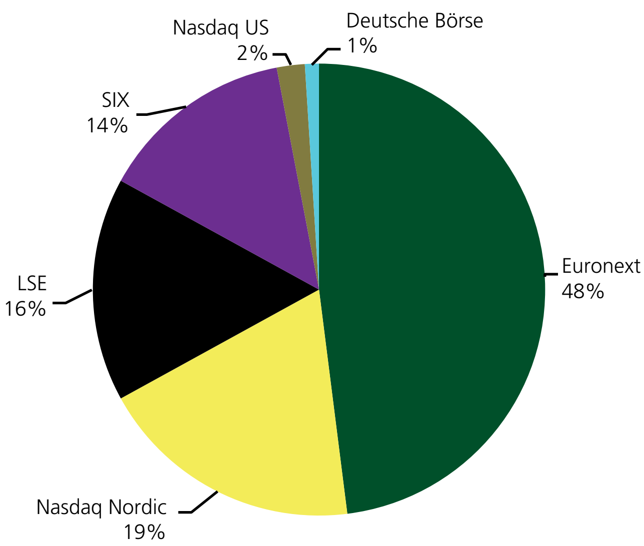
ABOUT THE INTERVIEWEE
Dr Alexander Schuth is co-founder and COO of **Denali Therapeutics Inc.**, a US-based biotech company that has been researching neurodegenerative diseases such as Alzheimer's or Parkinson's since 2015 as well as developing medications, some of which are already in clinical trials. Prior to the foundation of the company, Schuth had worked for the US biotech company Genentech in executive positions, e.g. as Head of Neuroscience Partnering. Dr Schuth started his career at the investment bank Merrill Lynch in London.

Another record year for US Biotech IPOs

When will Europe join the party?

While financing of biotech companies in the US remains at record highs, investors continue to show little faith in the European market – despite various recent positive developments. In contrast, we do not regard the quality of European life sciences companies in general as inferior to their US counterparts. In this article we discuss potential reasons for this apparent misperception. More importantly, we describe several recent positive trends that justify a more positive outlook.
By Dr Marcus Wieprecht

Fig. 1: Life Sciences IPO market share in Europe since 2013



Source: Euronext

The life sciences industry is definitely an exciting one, as demonstrated by various medical break-through developments in the last two decades. Some examples are immuno-oncology therapies offering far better efficacy combined with a significantly improved tolerability profile for cancer patients, or the successful treatment of viral infections such as Hepatitis C and HIV. Furthermore, we can see a fusion of multiple disruptive future technologies within the global life sciences industry, such as digitalisation, big data, nanotechnology and systemic biology – all exciting elements of an attractive equity story for investors. Combined with an increasing approval rate of new drugs by the FDA in recent years, the global biotech industry market appears to be moving in the right (and profitable) direction. Not surprisingly, the Nasdaq Biotechnology index touched its all-time-high in summer last year and today still trades approx. 50% higher than five years ago. In fact, from a financing perspective, 2018 was one of the most successful years ever for the biotech industry, at least in the US. Nearly 60 biotech companies went public via an IPO in the US last year, representing about 30% of all IPOs in the US in 2018. With this, biotech again topped the IPO activity in the US (followed by technology) as the biotech boom entered its sixth year. US biotech companies raised an amalgamated amount of >USD 6 bn fresh money via an IPO last year. A broader market correction in Q4 2018 proved to be only a short-term issue for investors. Large M&A activities in early 2019 eradicated any investor concerns immediately with Bristol-Myers Squibb offering USD 74 bn for Celgene followed by a USD 8 bn offer from Eli Lilly for the specialised oncology player Loxo Oncology.

Hype in the US versus a more sombre tone in Europe

In contrast to the hype in the US, things in Europe appear more reserved. Only a handful of biotech companies went public in Europe in 2018. An increasing number

ABOUT THE AUTHOR
Dr Marcus Wieprecht is a Managing Director and Biotech/Healthcare analyst at **MainFirst Bank AG**. He has worked as an equity analyst in the financial industry for more than 20 years. Previously, Dr Wieprecht worked for three years at Jerini AG as a Marketing and Business Development Manager. He obtained his PhD in biochemistry from the Free University of Berlin in 1995.

> *2018 was one of the most successful years ever for the biotech industry, at least in the US.*

of German biotech companies rather chose the US Nasdaq stock exchange when looking for fresh money, either via an IPO or a secondary listing (e.g. Morphosys in April 2018 or Biofrontera in February 2018). More recently, Centogene, a German company specialising in the diagnosis of rare afflictions, announced it would soon file its IPO plans with the US Nasdaq stock market. When looking at the European landscape, the multi-national Euronext exchange appears to attract the majority of life sciences IPOs (48% market share since 2013 according to Euronext), followed by Nasdaq Nordic and the LSE. Germany accounts for just one percent market share for all life sciences IPOs in Europe since 2013. This obviously raises questions, as we do not consider the quality of German life sciences companies as being in any way inferior.

Possible reasons for this trend are multifaceted: 1) a limited number of specialised, experienced institutional biotech investors. While seed financing is not so much of an issue anymore, follow-on financing through an expensive drug development programme before as well as after an IPO are often difficult. We view the financing landscape in Germany as rather unchanged over the last 10 years. There are still primarily a handful of dedicated, larger biotech investors including family offices like Athos (Strüngmann brothers) and Dietmar Hopp, but also venture capital investors like MIG and TVM, or private equity investors like Wellington; 2) disappointments from a few negative examples which did not meet the high expectations of European investors in the past; 3) a still generally negative perception regarding gene-technologies among the broader German population, especially with regard to agricultural but also medical products. Reading the German press would lead to a rather bleak impression with regard to the risks and opportunities arising from the biotech industry in Germany; 4) a decreasing number of qualified and experienced biotech analysts in German banks, which can represent a key element in developing an equity story for investors together with the company, followed by a sustainable long-term investor education and regular research coverage after the IPO.

Several recent positive industry trends in Germany

Despite all these things, we clearly see a number of positive trends among biotech companies in Germany. Germany enjoys a great scientific infrastructure, connecting eminently respectable researchers and scholars with start-up entrepreneurs and an improving, increasingly supportive political environment. Many biotech companies achieved significant clinical milestones recently: Aicuris received US as well as EMA approval for its anti-viral drug Letermovir (Prevymis) in 2017, and the first product developed using Morphosys's HuCal antibody library launched on the US and European markets in 2017 (Tremfya for psoriasis, marketed by Janssen Pharmaceutical). In addition, some early stage biotech companies were acquired by larger pharmaceutical players (e.g. Rigontec was acquired by Merck &Co in 2017, just three years after its foundation, for EUR 464 m including milestones, and Astellas bought Ganymed for almost EUR 1.3 bn in 2016). The potential IPO candidate Biontech passed the 1000 employee threshold recently, while the more established company Sartorius increased sales by >13% and net earnings by 22% yoy in FY 2018, primarily driven by life sciences products.

> *Germany enjoys a great scientific infrastructure, connecting eminently respectable researchers and scholars with start-up entrepreneurs.*

> *A successful, larger biotech IPO would be clearly desirable to revive the European biotech IPO market.*

Many attractive "hidden champions" as potential IPO candidates

A successful, larger biotech IPO would be clearly desirable to revive the European biotech IPO market. Potential candidates could be the RNA-based therapy players Biontech and Curevac. The development of RNA-based vaccines and therapeutic techniques is a highly promising emerging technology. A similar company in the US called Moderna successfully went public on the US Nasdaq stock market at the end of 2018 (despite temporary adverse market trends at the time), raising more than USD 600 m, valuing the company today at about USD 7bn. Beside Curevac and Biontech, we see various additional "hidden champions" as potential IPO candidates, covering multiple areas like next generation immuno-oncology therapeutics, innovative technology platform companies, but also classical medical technology players addressing a tremendous medical need with their revolutionary products. ■

"The topic of IPOs is and will remain an interesting option for financing company growth"

Interview with Sebastian Grabert, Euronext

For the third year in a row, the multi-country stock exchange Euronext registered four biotech IPOs last year. Continuity or stagnation? Sebastian Grabert, director and representative of Euronext in Germany, explains his point of view.

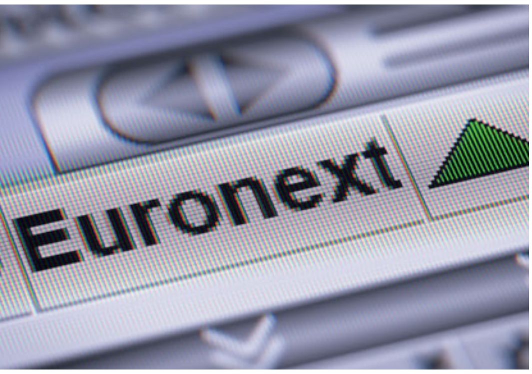


Photo: © Pavel Ignatov – stock.adobe.com

Plattform Life Sciences: Mr Grabert, let's look back at the 2018 IPO year. Once again, four biotech companies made it onto Euronext. What do you conclude from this?

Grabert: Overall, I am very pleased. Following 2016 and 2017, we again saw four biotech IPOs to Euronext last year. That is a sign of continuity. And we managed it despite the fact that the fourth quarter market conditions in particular were very bad. Numerous planned IPOs were cancelled worldwide. On the other hand, there was also very brisk M&A activity: Tigenix, Ablynx and TxCell, three biotech companies that were listed on Euronext, were acquired by pharmaceutical groups in 2018. This proves that companies are still attractive to strategic investors even after an IPO.

Four biotech IPOs again in one year; that does speak for continuity, but perhaps also for stagnation?

One must look at this continuous number of IPOs in relative terms. After all, four IPOs are better than no biotech IPOs at all, as was the case on the German stock exchange. Besides, Euronext has a very stable number of 52 biotech and 38 medtech companies listed. This also means that for IPOs of a certain size, Euronext is most worth considering. And this is not only true for companies in countries that are part of the cross-border exchange (France, Belgium, the Netherlands, Ireland and Portugal); since 2018, for instance, British Acacia Pharma has chosen to list on Euronext.

What is your assessment of the current market environment for Life Science IPOs?

I don't think sheer optimism is appropriate at the moment. A hard Brexit is still very likely. Also, the disastrous situation in Italy and its potential consequences for the eurozone have been seriously underestimated, in my view. Further macroeconomic factors also come into play. And still, Euronext was listed the first Life Science IPO in 2019, Sequana Medical. This means that there are still good opportunities for a successful IPO further on if there's a good equity story.

> *Euronext has a very stable number of 52 biotech and 38 medtech companies listed.*

In September 2018, Euronext started its TechShare programme. What is your initial conclusion?

With our TechShare programme, we want to get technology-oriented companies, including those in Life Sciences, interested in the topic of IPOs. I can already say today that a number of companies are seriously considering an IPO and are engaged in discussions with investment banks – although of course I can't mention any details. In general, we are extremely pleased with the development of the programme. There was a huge turnout for our evening sessions in Berlin and Munich. We

ABOUT THE INTERVIEWEE

Sebastian Grabert is the director and representative of **Euronext** in Germany and is based in Munich. In his previous position as an equity research analyst with Berenberg Capital Markets in London, he was in charge of the pan-European software and IT service sector. Following that, he was a quantamental research analyst for HSBC Global Research, and later senior director of stock research at HSBC, where he was responsible for supporting European hardware technology companies.

reach companies that have never before considered the topic of IPOs. An IPO now presents itself to them as an attractive alternative to the classic rounds of financing with venture capital providers, though we still note some uncertainty, especially with newer companies. We can and will pursue further action with them. What we offer with the TechShare programme is unique. Just recently, we brought together more than 100 companies from all over Europe at a “campus event” in Lisbon. They were able to discuss financing alternatives with each other and with banks, auditors and capital market lawyers. A transnational network of and for European tech companies is emerging.

Many biotech companies would rather venture an IPO on Nasdaq instead. How does Euronext score in comparison?

Ultimately, every stock exchange has its advantages and disadvantages. An IPO on Nasdaq is a huge undertaking, so you need to be a certain size. You have to be present on-site, which usually requires a major financial and organisational expenditure. For these reasons, it’s only an alternative for a few biotechs. What’s even more decisive is that Frankfurt am Main only plays a marginal role as a stock exchange for biotech IPOs. The ecosystem is missing – there are too few specialised investors, and the risk is often too unpredictable for the generalists. As a result, there are too few banks and analysts that specialise in biotech. It’s no coincidence that so many Life Science companies are listed on Euronext. With this in mind, we are expanding our local representation to draw German companies’ attention to this alternative exchange.

Over the past year, twelve biotech companies that are listed on Euronext entered into research collaborations with pharmaceutical groups. Is “Big Pharma” paying close attention to Euronext?

That is certainly the case, and we’re happy about the positive news flow. Of course the big pharma companies profit from the obligatory transparency of listed companies, for instance with regard to accounting. That is an ideal prerequisite for cooperation.

Can you give us your outlook for the future?

The topic of IPOs is and will remain an interesting option for financing company growth, particularly for those in Life Sciences. And now companies in Germany also have this option on their radar, which has not always been the case. We are having an increasing number of discussions with interested companies and the correspondingly specialised investment banks, though I can’t yet make any predictions. Not least because of the stock market environment, right now I would tend to lower expectations, though in the medium term we will certainly see a number of exciting IPOs.

Mr Grabert, thank for you the interesting discussion.

The interview was conducted by Holger Garbs.

Headwinds in European healthcare?

Silicon Valley Bank's Nooman Haque on the 2019 outlook for Life Science

In 2018, we saw record IPOs for Life Science companies going public; a significant uptick in biotech series A round sizes; record amounts raised for Life Science companies in Europe for private companies; an influx of capital from technology investors into digital health and increased inflows of capital to Europe from the US and China. So a common question at this year's JP Morgan healthcare conference was "Can these trends continue?" Pessimists suggest we're at the top of the Gartner Hype Cycle, with disillusionment to come. But there's a different take if we look at the drivers of investment and excitement. **By Noohman Haque**

Photo: © Alterfalter – stock.adobe.com

Firstly, unlike the 90s gene therapy boom, we are more advanced in several technology areas, and there are many more of them – from CAR-Ts to gene therapy and CRISPR. Surely many of them have further to go than others, but fundamentally, what we have is not a single hype curve but several at different stages of the cycle. CRISPR, for example, has great promise, but arguably has much further to travel on a likely rocky road compared to other technologies. The emergence of digital health is not without its challenges, especially in the largely public healthcare markets of Europe. But the increasing use of technology by insurers, drug developers, patients and physicians is likely to create entirely new opportunities in the medium term whilst potentially delivering some fundamental improvements in healthcare efficiency.

Interest rates are favourable

Secondly, we are still in a benign interest rate environment, and it continues to drive investment allocation decisions towards riskier areas. In the UK, for example, regulators are exploring how pension funds can be unlocked to deploy even more funds to the sector; several leading European Life Science venture firms such as LSP, Andera and Forbion have raised record funds, providing a solid source of capital over the next two to three years. And these funds were raised on the back of good exits for these firms that were traditionally lacking in Europe. Of course, oversupply of capital brings its own risks, while arguably later-stage companies, particularly in Germany and the UK, continue to be poorly capitalised because of frictions in capital markets rather than faults in the technology.

Brexit could mean opportunity in Europe

In Europe, the political situation of course is in flux, though even Brexit could provide opportunity for the Life Science sector. Funds which have traditionally focused heavily on the UK will have to look to countries like Germany to ensure they do not over-allocate to non-EU countries if their LPs require that. Conversely, within

ABOUT THE AUTHOR

Nooman Haque is the Managing Director of Life Sciences and Healthcare at **Silicon Valley Bank's UK Branch**. He leads a team dedicated to supporting early, growth-stage and established multinational businesses in all sectors of Life Sciences. Nooman is responsible for expanding the bank's business in this key sector and working with the global Life Sciences team to support companies with all aspects of their business, beyond financing. He is actively involved in the sector, sits on the BIA's Finance and Tax Committee, and acts as a frequent panelist, writer and spokesperson for the industry. Nooman has a Bsc in psychology and an Msc in economics, both from the University of London, and an MBA (finance) from Imperial College.

the UK, domestic government institutions will want to double down and ensure that the UK's leading role as a Life Science sector is not diluted for want of capital. And given the likely continued close collaboration across Europe when it comes to fundamental science, these trends should continue to strengthen the sector across the whole of Europe in the near term.

Finally, from a financial perspective, Europe continues to present good value and a solid arbitrage opportunity for investors who can sell assets at a world price, or list at US prices.

There are headwinds, though, and Europe's fragmented healthcare markets – exacerbated by Brexit – will always make it more challenging to compete with a centre of gravity like Massachusetts. Instead of taking a copycat approach, countries and companies should try to focus on where they excel and differentiate, whilst providing enough breadth to deliver an ecosystem that provides a source of renewable capital and talent. European financial markets are no competition to the US, and entrepreneurs (and policy makers) need to recognise that raising money internationally is not "selling out" to overseas interests. Indeed, Morphosys listed in Germany but raised over USD 200 m via American Depositary Receipts (ADRs) on Nasdaq, an illustration of how companies should think about a global pool of capital.

Governments must be innovative

As a last remedy to headwinds, European governments can be more innovative in the use of policy instruments. With procurement, for example – direct innovation in areas where public and private benefit needs overlap, thus ensuring a more coordinated approach to help patients, investors and entrepreneurs – and exploring the use of paid-for phase 3 trials in certain instances.

The short-term outlook for the sector remains positive with plenty of capital, but in Europe, as in the US, success in the longer term will require rethinking business and payer models to allow innovation to flourish.

Partners' Portraits

BIO.NRW
Cluster Biotechnology
North Rhine-Westphalia

BIO.NRW is the central point of contact for entrepreneurs and scientists and supports the sustainable development of life sciences in NRW. Based on and focused at the strengths of the North Rhine-Westphalian biotechnology in academia and industry, BIO.NRW initiates and promotes co-operation between research institutes, companies, investors and policy makers on the state level as well as national and international. Our activities aim at building an effective network for entrepreneurs and scientists including young talents and at generating a platform for life science topics and events. We support Start-ups, SMEs by various means as well as technology transfer from academia and industry to the markets. BIO.NRW promotes the life science industry and research location NRW at national and international events, exhibitions and fairs – like BIO International Convention (USA), BIO-Europe, ChinaBio® Partnering Forum - and by further PR activities. Established series of events including the BIO.NRW.academy, BIO.NRW.red Platform Meetings, BIO.NRW Business Angel Congress, BIO.NRW Medica Forum constantly expand this life science network. With China as a partner country, BIO.NRW has been granted the national program "Internationalization of leading edge clusters…" in 2017. BIO.NRW works on behalf of the state's Ministry of Economy (MWIDE NRW).

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MAINFIRST

MainFirst Bank AG is a European financial services firm specializing in Equity Brokerage and Equity Capital Markets. In Equity Brokerage, we cover more than 440 (predominantly) European companies. With advice, trading and transaction execution, we are a long-term partner to European and international investors. With locations in Frankfurt, London, Milan, Munich, New York, Paris and Zurich, we pursue a multi-local approach in order to be closer to companies and investors, maintain close contacts, and ultimately provide more value added research and advisory services to our clients.

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Technologiepark Heidelberg

Heidelberg Technology Park is one of Germany's premier sites for innovative high-tech companies. Since 1984, Heidelberg Technology Park offers flexible infrastructure for biotechnology, pharmaceuticals, digital health, medical technology, bioinformatics, printed electronics, environmental technologies, and IT. Today, more than 90 companies and over 2,800 employees share 80,000 sqm across five locations. Tenants leverage the close proximity to Heidelberg's world-renowned research institutes.

Heidelberg Technology Park operates an inter-institutional and inter-disciplinary startup support office – headquarters to the Heidelberg Startup Partners network – to support entrepreneurs in raising public funding, finding partners and investors, and starting a sustainable business. Two accelerator programs offer a fast lane for life science and IT startups. Heidelberg Technology Park has been the root of BioRN, the regional life science research and industry cluster.

From September 2019, a newly built Business Development Center will offer 7,000 sqm of wet lab, cleanroom, and office space. The new building will be part of the upcoming Heidelberg Innovation Park (hip), Heidelberg's latest area of innovation.

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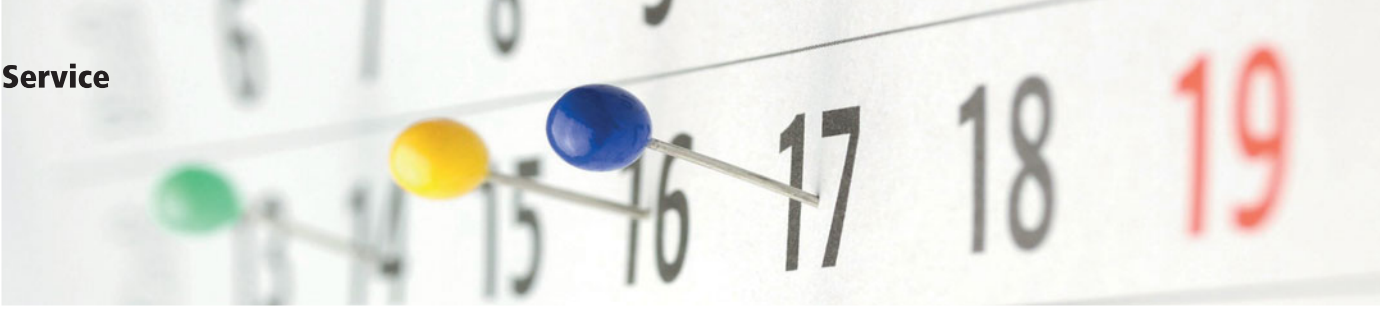

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Event Calendar

Date & Venue	Organizer	Event
2–4/4/2019 Messezentrum Nuernberg	Vincentz Network GmbH & Co. KG http://altenpflege-messe.de	**Altenpflege – The Care Fair**
8/4/2019 Wuerzburg	Biotechnologie-Industrie-Organisation Deutschland e.V. www.biodeutschland	**Biotech Investors Day**
9–10/4/2019 Wuerzburg	Biotechnologie-Industrie-Organisation Deutschland e.V. www.biotechnologietage.de	**German Biotechnology Days 2019**
9–10/4/2019 Dusseldorf	Euroforum https://veranstaltungen.handelsblatt.com/chemie/	**20th Annual Handelsblatt Chemistry Conference 2019**
9–11/4/2019 Messe Berlin	Bundesverband Gesundheits-IT – bvitg e.V. www.dmea.de	**DMEA – Connecting Digital Health**
7/5/2019 Berlin	Health Capital, Berlin Partner, Enterprise Europe Network https://bionnale-2019.b2match.io/	**Bionnale 2019**
7–9/5/2019 Stuttgart	Messe Stuttgart www.messe-stuttgart.de	**T4M**
8–9/5/2019 Munich	Ascenion GmbH www.biovaria.org	**BioVaria 2019**
13–14/5/2019 Halle (Saale)	Wissenschaftscampus www.sciencecampus-halle.de	**8th International Bioeconomy Conference**
15–16/5/2019 Maternushaus, Cologne	nova institut http://nova-institut.de	**12th International Conference on Bio-based Materials**
16/5/2019 Faculty Club G2B (Gateway to Biotech), IZB, Martinsried	IZB www.izb-online.de/de/biotech-presse-lounge.html	**Biotech Press Lounge**
20–21/5/2019 Barcelona	EBD Group www.ebdgroup.com	**BioEquity**
21–23/5/2019 Hanover	Deutsche Messe AG www.labvolution.de	**Labvolution**
31/5/2019 Waldorf Astoria Chicago Hotel USA	Sachs Associates www.sachsforum.com	**5th annual Immuno-Oncology BD&L and Investment Forum**
3–6/6/2019 Philadelphia, PA	Biotechnology Innovation Organization https://convention.bio.org	**BIO International Convention**
12/6/2019 Offenbach / Frankfurt am Main	Convent https://convent.de	**3. Health meets Future Summit**
17–18/6/2019 Berlin	Berlin-Brandenburgische Akademie der Wissenschaften www.stiftung-charite.de/veranstaltungen/charite-entrepreneurship-summit/	**Charite Entrepreneurship Summit**
3–4/7/2019 Fuerstenfeldbruck	Bio^{M} Biotech Cluster Development GmbH www.forum-science-health.org	**FORUM Science & Health**
24–25/9/2019 Munich	Süddeutscher Verlag Veranstaltungen GmbH www.sv-veranstaltungen.de	**SZ Congress: Digital Health**
24/9/2019 Congress Center Basel	Sachs Associates Ltd. www.sachsforum.com	**7th Annual Healthtech Investment Forum**
25–26/9/2019 Congress Center Basel	Sachs Associates Ltd. www.sachsforum.com	**19th Annual Biotech in Europe Forum for Global Partnering & Investment**
26/9/2019 Dusseldorf (Henkel Headquarters)	BCNP https://ecp-summer-summit.com/	**2nd ECP Summer Summit**
26–27/9/2019 Hilton Munich Park	WISO S.E. Consulting GmbH hwww.wiso-consulting.de/europaeischer-gesundheitskongress/	**18. Europaeischer Gesundheitskongress**
10–12/10/2019 Berlin Arena	Pipits Business Management GmbH www.pipits.de	**XPOMET / Medicinale 2019 Future Health & Care Festival**
18–21/11/2019 Dusseldorf	Messe Dusseldorf GmbH www.medica.de	**Medica**
25–26/11/2019 Cologne	MCC www.mccentre.de	**Health 4.0**

Further events:
www.goingpublic.de/events

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Preview

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