

## Global players in theory but not always in practice

**Biotechnology companies have always had international ties: they employ cutting-edge technologies and market the discoveries and developments of researchers around the world. Rapid innovation cycles and rapid technological developments force companies to undertake costly R&D as well as market their products and/or services across national borders.**

This is the context within which German biotech companies and others operate. Internationalization can be many things. The degree of a company's internationalization depends on how big it is, what type of products/services it offers, its target markets and many other factors.

Textbooks describe internationalization as a stepwise process in which a company gradually expands its activities relating to market development and use of resources and increasingly offers its products and services to more distant markets. Very little is currently known about the internationalization of German biotech companies, and the little that is known relates to medically oriented companies, which constitute about 50 per cent of all German biotechs.

### Confusing terrain

The reason for this scarcity of knowledge might be that whilst some see biotechnology as a sector that provides products and services for human health others see it as an interdisciplinary cross-sectoral technology. Depending on which definition is used, a larger or smaller number of companies are classified as biotechs. In addition, very little is known about the value created by biotechnology in larger companies where biotechnology is only one business segment of many. Although only a handful of studies and surveys have been conducted on the topic of internationalization, they have identified some patterns and trends in the internationalization process of biotech companies and found that, in any case, different kinds of 'born globals', as these companies are also called, follow different internationalization processes. The results of the author's own surveys have also shown that these companies should not be analysed as a homogeneous group.

The classical definition of internationalization refers to the export of goods and services. Economists such as Sven Wydra from the Fraunhofer Institute for Systems and Innovation Research are also interested in new forms of internationalization, including the type of cooperation initiated by clusters, for example. In both medical and industrial biotechnology, a lack of financial power slows down production and export-oriented internationalization. Industrial biotechs are making a virtue of necessity (limited resources): they supply small, highly specialised niche markets with either just one or a limited number of products. This enables them to avoid time-consuming and costly marketing activities as well as expensive logistics. The same is the case for service suppliers in the field of



Biotech companies: born to be global, as economists say  
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medical biotechnology.

## Delays in going global: more small than medium-sized companies

A survey carried out by the information platform [www.biotechnologie.de](http://www.biotechnologie.de) in April 2011 on the performance of the German biotechnology sector provides initial information on the degree of internationalization: an average German biotech company is around ten years old. And it is small. Almost 50 per cent of all German biotech companies have fewer than 10 employees, and around the same percentage employ between ten and fifty people. Companies with more than 100 employees are an exception.

The comparison with the biotech market in the USA, the lead market in the biotechnology sector, makes things clear: the annual revenues of around 2.4 billion euros achieved by all the German biotechs put together does not even come close to the quarterly revenues of Amgen, the world's largest biotech company based in the USA. Experts (Otto et al. p. 45) believe that the European biotechs will find it difficult to catch up with the American biotech market. Many "red" biotechs in Germany generate little or no revenue, and have put in place hybrid business models (where they act as suppliers and service providers, platform and product developers) that are aimed at enabling the company to enter a market and create revenues at the same time as being in a position to satisfy the demands of capital investors (Otto, 45; Liebers).

## Intensive foreign trade, harmonised approvals



Another type of internationalization: 50% of the cooperative projects run by biotechs are carried out with international partners

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The intensification of foreign trade has led many biotech companies to expand their sales and distribution activities. The harmonisation of approval standards and the possibility of relying on know-how resulting from the transfer of knowledge from public and private research institutions have also contributed to internationalization. Surveys of German biotech companies have shown that many biotechs are strongly oriented towards the US and Western European market (Kranich, 19).

Export, licensing, joint venture, strategic alliance and subsidiary - all these terms denote different degrees of capital and management investment. Internationalization can also relate to all the relations a company has with its foreign partners, and which can be a two-way relationship in that they can also involve import. According to [www.biotechnologie.de](http://www.biotechnologie.de), one in two industrial cooperative ventures undertaken by German biotechs involves cross-border cooperation.

A recent study on European small- and medium-sized (SME) companies provides some conclusive evidence: the majority of SMEs are active on the international level; however, only a few work with partners outside Europe. This European study shows that the size of companies and internationalization are closely related: the bigger a company is, the more interested it is in internationalization. Export and import activities increase with a company's maturity. With this in mind, it appears that German biotechs still have a long way to go in terms of expanding their international activities.

## Business activities between companies

Biotechnology services are mainly business-to-business (B2B) commerce transactions, in other words their target market is located where their established customers are. German companies that are active in international markets usually focus on direct export, either by setting up own sales departments or by involving distributors. The majority of German biotech companies are active in niche markets, which forces them to put in place broad internationalization processes. These are the findings of a study carried out by the CEIP (Centre for Entrepreneurship and Innovation at the University of Potsdam) which involved 30 international German biotechs. The CEIP selected the surveyed companies according to business success (more than 20 employees, age and growth of the company) and internationality. The majority of the companies surveyed focus on medical technology, mainly drug development and contract manufacturing.

The CEIP researchers concluded: biotech companies are “born globals”. Their business models are frequently based on a protected technology whose development is associated with high R&D investment. The situation is similar in the global business-to-business markets. However, the limited financial power of German biotechnology companies forces companies to finance their move towards internationalization with own revenues.

So the question arises as to what kind of SMEs can be regarded as born globals. Studies have shown that starting export activities at a very early stage in their life cycle is the preferred internationalization strategy of SMEs. In addition, such companies mostly generate their revenues in international markets and are usually active in high-tech areas that are characterised by global competition. Other models view internationalization as an ongoing process in which ‘born global’ SMEs try to prevent uncertainties in their international involvement by increasing their knowledge of the market. Therefore, knowledge of the target markets regulates the companies’ internationalization process.

## Born globals

The companies surveyed showed a broad range of internationalization patterns. “True” born globals are companies that become involved in international markets within the first three years of company establishment and which have started at least one more activity in the three subsequent years. The majority of these born globals are active in the USA, the EU and Japan and have tied up enormous resources in direct investments abroad and in cooperative projects with other companies. Born globals are pioneers that enter foreign markets very early in their life cycle. In many cases, the technologies used by such companies are protected by worldwide patents. The CEIP study also shows that all the companies are technology leaders in the area in which they are active.

The second group are “born global exporters”, companies that export directly, use a sales force based at the company headquarters that is active on the world market or establish sales departments in the most important target markets and regions. This group of companies can also be seen as pioneers and they usually employ a patent protected technology platform on which their business model is based.

The third group of “born globals” operates by way of indirect sales activities, hardly ever or never becomes active on the international level. These “late global exporters” commence their internationalization activities around five years or so after company establishment, but do so quickly and intensively in many different countries simultaneously. It often takes these companies five years or so to develop a marketable product. They usually look for new sources of financing once previous

ones (public funding, venture capital) come to an end. Companies that choose this form of internationalization are specialists in their field, technology leaders and pursue a pioneering strategy. They usually serve a very small niche market and only have a small number of clients and competitors around the world.

## Reasons for getting involved in international markets

Clients and distributors often approach the born globals once the latter have initiated unspecific international marketing activities, with such contacts then leading to further business relations. In addition to this somewhat accidental occurrence, the economists from Potsdam have also identified specific market and industry structures as reasons for internationalization: the global niche character of the B2B markets in the field of red biotechnology forces companies to orient their international presence around the geographical areas where their customers are located.

Many companies decide whether they want to get involved in international markets or not on the basis of the attractiveness of a particular market; market size and competitive intensity are regarded as the major indicators of market attractiveness. Last but not least, existing international networks arising from the scientific activities of a company also determines the form a company's internationalization process takes. Internationalization can also be the result of company mergers and acquisitions.

The results of the surveys reveal the causes that determine the general conditions of internationalization, but they do not provide explanations for the different internationalization patterns. A company's internationalization process can depend on the particularities of technologies used, the fact that a company may only have limited resources and also on the company's production capacities or the need to tap into international financial markets.

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Information about target markets:

OECD: [www.oecd.org](http://www.oecd.org)

EU: [https://www.biooekonomie-bw.deec.europa.eu/research/biosociety/index\\_en.htm](https://www.biooekonomie-bw.deec.europa.eu/research/biosociety/index_en.htm)  
[https://www.biooekonomie-bw.deec.europa.eu/enterprise/sectors/biotechnology/index\\_en.htm](https://www.biooekonomie-bw.deec.europa.eu/enterprise/sectors/biotechnology/index_en.htm)

Baden-Württemberg International: First point of contact for company relations and cooperations as well as know-how transfer: <http://www.bw-i.de>

Germany Trade & Invest

<https://www.biooekonomie-bw.de/www.gtai.de>

International networking of universities, research organisations and companies on behalf of BMBF.

<https://www.biooekonomie-bw.de/www.internationales-buero.de/>

Exportinitiative Gesundheitswirtschaft, Medical Biotechnology working group, funded by the BMWI, carried out by GTAI in cooperation with three biotech associations: <https://www.biooekonomie-bw.de/www.exportinitiative-gesundheitswirtschaft.de/EIG/Navigation/medizinische-biotechnologie.html>

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## Dossier

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