

ESADE CASE

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AB-Biotics

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On a summer's day in 2008, Miquel Àngel Bonachera and Sergi Audivert, cofounders of AB-Biotics were having dinner in a quiet restaurant in Barcelona. After 12 hours of work, they needed to thoroughly assess recent events before making a decision on the financing strategy for AB-Biotics. The four years since they founded AB-Biotics had flown past. The company went from near bankruptcy during its first year to solid revenue growth in the following years – increasing by 450 percent from 2005 to 2008. During this period, the company developed three lines of businesses: 1) research and development of novel probiotics; 2) specialty dietary supplements; and 3) personalised medical services through advanced genetic tests for predicting the response of each patient to different types of drugs.

During the early years, Bonachera and Audivert financed the company with their own money and public funds they obtained from government agencies that supported technological start-ups. However, AB-Biotics was now expanding its product development to include product patents that could be licensed to global food and pharmaceutical companies. The good news was that the founders now had various options. A couple of venture capital funds were interested in investing in AB-Biotics. Additionally, a business angel had approached them who was very interested in investing and helping the company grow. The business angel was a successful entrepreneur in the biotech sector. Audivert and Bonachera faced a difficult decision. Each of the options had positive and negative points. They were sure that the financing option they selected would somehow determine the long-term growth and development of AB-Biotics.

The founding of AB-Biotics

Bonachera and Audivert were defined by a local business newspaper as: “a business marriage of convenience.”¹ They were introduced by a mutual friend in 2002. At that time, Bonachera was a 22-year-old graduate in biochemistry from the Universidad Autònoma de Barcelona (UAB) and was researching DNA chips during a residency at the Vanderbilt Shared Microarray at Vanderbilt University in America. Audivert was 24-year-old graduate in science and food technology and

Luisa Alemany, associate professor at ESADE Business School, and Lourdes Urriolagoitia, case writer at the ESADE Entrepreneurship Institute, prepared the case. It is intended to be used as the basis for class discussion rather than to illustrate either effective or ineffective handling of a management situation. Funding for the development of this case was provided by the ESADE Entrepreneurship Institute thanks to the Santander Universidades endowment.

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was working in Barcelona at the Medical Nutrition Unit run by Novartis – a pharmaceutical multinational. Coincidentally, they both intended starting a business in the biotech sector and were working separately on business plans. When a friend introduced them in 2002 and they discovered the similarity of each other's research and business ideas, they decided to start a company together.

Bonachera and Audivert founded AB-Biotics in April 2004. The company began as a spin-off from the UAB.² They started with an €83,000 bank loan that was guaranteed by their parents. “My father agreed to it because I told him that Sergi's father was going to sign... and Sergi did the same,” recalled Bonachera.³ They both realised that the first year would be very hard.

Audivert and Bonachera created AB-Biotics with the main aim of developing innovative and patentable biotech solutions that could reach the market in the least possible time. They started by applying innovative technology to the creation of microorganisms for cheese. The microorganisms were intended help cheese makers differentiate their products through biotech. However, they closed 2004 with a very few sales. “We were facing ruin,” recalled Audivert, “not a single cheesemaker would buy our product.”⁴

They asked for another bank loan within a year and decided to acquire some training in management, since both had scientific backgrounds without any business experience. They enrolled in the ESADE Business School MBA program. Bonachera attended first, while Audivert stayed in charge of the company and then they exchanged roles. “The problem was that the company had so much debt that my father had to pay my tuition,” said Bonachera.⁵

“We reformulated the business model in 2005. As we were almost bankrupt and we were attending the business courses, we learned some things that were vital. After several classes we could understand the mysterious world of finance,” remembered Audivert. “We realised that we needed to diversify into different business lines with different levels of risk.”⁶ That same year, they started offering their technical microbiology expertise as outsourced R&D solutions to pharmaceutical companies, as well as functional food companies. Some of their clients, mainly small and medium sized companies, lacked research capabilities and asked them to develop specific solutions. “The first was a company producing food scents. The company asked us to develop an active ingredient that stimulates the immune system with the aim of making a healthy drink,” recalled Audivert.⁷

This change in the AB-Biotics business model worked, and so the company quickly expanded to other business lines, such as the development of novel probiotics and specialty dietary supplements. By the end of 2005 they had turned the business around, AB-Biotics recovered from losses and achieved profitability.

The market opportunity

The Spanish biotech market in 2004 was growing at a rate four times faster than the European average. Spain was the fourth largest European contributor to biotechnology research measured by the number of articles published in high impact journals. Among the most valuable resources available for the biotech sector in Spain were highly-qualified researchers, as well as public and

private funds. The Spanish biotech sector continued its expansion in 2008 and was growing at a rate of more than 8% annually (better than the US, Germany, the European Union, and Canada).⁸

However, the Spanish biotech sector was still in an early stage, with little tradition compared to more consolidated markets such as Germany. In 2004, the Spanish biotech market was a quarter the size of the U.S. and half the size of the European Union average (in relative terms).⁹ The number of biotech companies multiplied by four between 2000 and 2008, reaching a total of 336 firms in 2008 (see Exhibit 1). Sales also multiplied by four during that period, and almost reached the one billion euro level (see Exhibit 2).

Another fact showing that the Spanish biotech sector was in an early stage was the level of venture capital investment. In the period 2000-2005, less than 1% of Spanish venture capital investments went to biotech companies. The total amount of venture capital injected in biotechnology in Spain between 2000 and 2008 was €191m. This low level of investment represented just 2.1% of the total venture capital investment in the EU-15 countries, which was less than the relative size of the Spanish economy within the group. In the USA alone, total VC biotech investment was more than €28 billion (see Exhibit 3). The good news was that of the €191 million invested in Spain, some 80% was made in the period 2006-2008 and this showed a clear upward trend.

Risk and return are always very high for biotech projects. “Biotech companies are highly inventive and create knowledge that improves the well-being of society. This knowledge or industrial and intellectual property is protected by patents,” wrote Bonachera for a specialised review in biotechnology.¹⁰ Intellectual property creates a monopoly for the exploitation of rights on biotechnological knowledge, and this enables profits to be maximised. However, large and usually long-term investments need to be made during the initial stages of a project. Uncertainty is very high during this investment stage since there is always the possibility of project failure until some marketable results are obtained. The investment in time and money are entirely lost if the project fails.

Biotech projects consist of long-term R&D processes. During maturing periods, the company generates no revenues and so external financing is needed.

AB-Biotics business development

Audivert and Bonachera realised that ‘time-to-market’ was a key concept for the development of their business model. This term refers to the period of time from the inception of an idea to the first sale, which in the biotech sector can be especially long. Aware that recurrent cash inflow was critical for the support of their product development, they decided to follow a diversification strategy that balanced risk and profitability.

The outsourced R&D solutions that AB-Biotics started providing to small and medium sized pharmaceutical and functional food companies implied a lower level of profitability, but was critical as it also meant a recurrent inflow of cash and a lower level of risk. Consulting for other companies, while not the core of future business for AB-Biotics, proved to be a safe internal source of financing. Audivert and Bonachera invested all the cash flow generated from this

business line into the development of novel probiotics and specialty dietary supplements. This second line of business was more intensive in investments and time-to-market, implying higher risk and a higher level of profitability.¹¹ The company also started working in pharmacogenetics, a third line of business, with the aim of developing its own advanced genetic tests.

By 2007 AB-Biotics had three business units sharing management synergies. This enabled the company to balance business risk and return. While expanding the three business lines, Audivert and Bonachera started to recruit their team. They hired a team of four with excellent research planning skills to help them develop superior products. All of the team were hired on the basis of academic and research excellence, and since the business could not offer high salaries the team was offered promising prospects in a high growth start-up.

Business line 1: R&D outsourcing

R&D outsourcing market opportunities were clear for AB-Biotics. Firstly, R&D costs in private and public sectors had significantly increased in recent years. According to OECD government forecasts, costs would continue to grow in the years ahead for public administrations. Secondly, there was an increasing need among the various industry players to form partnerships incorporating food and functional ingredient companies. The difficulties involved in finding financing had resulted in an increased outsourcing of the planning phases of projects and the spread of medium-term partnerships.

At the beginning, Audivert and Bonachera provided services that included R&D planning for clients. However, this situation rapidly evolved into partnerships that helped clients develop, finance, and implement novel programmes that were outside the focus of their internal R&D. As a result, the development of distinctive biotech solutions for pharmaceutical and functional food companies was consolidated as a constant and growing line of business.

Business line 2: functional ingredients

Population aging and increases in chronic disease have led to a greater awareness and interest in personal health. People look for healthy food products that can control and prevent illness. A growing understanding of the benefits of probiotics is the main driving force behind the global market growth for functional food and dietary supplements.

Probiotics are microorganisms whose health effects have been scientifically demonstrated. They are among the functional ingredients with the highest growth potential due to the wide range of applications in functional foods and dietary supplements. Furthermore, they also offer great potential in the control and prevention of various illnesses. Various surveys showed that consumers want ingredients that prevent and relieve chronic illnesses. According to internal research by AB-Biotics, a special emphasis was expected on overweightedness and obesity, cardiovascular problems, digestive problems, and cognitive and intellectual development.

The probiotics market has grown 15% annually in recent years and was expected to achieve a two-digit growth rate for the period 2008-2012 (see Exhibit 4). With this growth in mind, AB-Biotics decided in 2006 to expand its activities to product development. This business line

focused on the R&D of in-house functional ingredients, mainly probiotics for functional nutrition and nutritional supplements.

Audivert and Bonachera invested in the development of a large proprietary bank of wild-type bacterial strains (more than 550) with the aim of developing a pipeline of products with novel and patentable performances. This pipeline included a range of proprietary supplements designed to improve health: from products that can lower the risk of cardiovascular disease to products that can help manage diabetes.

Business line 3: AB-Genotyping

A year after launching the functional ingredient business line, Audivert and Bonachera could finally focus on the original business plan: working in genetics. They launched a new business line that quickly generated profits. This third line was in personalised medicine based on pharmacogenetics: namely, proprietary pharmacogenetic analysis. Such analyses give doctors information to select the best treatments – based on genetic profiles – for each patient. Pharmacogenetics can greatly improve the effectiveness of drug treatments, while reducing the risk of undesired side effects.

This new vision of pharmacological treatment was still in its early days in hospitals, and was mainly used in cancer treatment units. Application in other therapeutic areas – such as neuropsychiatry – was being validated to achieve a better control of dosage for the metabolic capacity of patients.

The market of pharmacogenomic testing for cancer treatment had already reached 40,000 laboratory analyses. It was generating sales of over \$150m from 2004-2008. The Spanish Association of Oncology estimated that 50,000 new cases of colon and lung cancer would be diagnosed in 2015, which would represent a potential market of 10,400 patients (under the assumption that 25.8% of cases undergo chemotherapy, and 80% of patients may need an analysis). In the case of other types of cancer treated with chemotherapy, it was predicted that in 2015 there would be 150,000 new cases in Spain. Therefore, it was forecasted that the potential Spanish market would be around 35,000 new patients per year.¹²

About 13% of the Spanish population suffers from neuropsychiatric disorders, while only one third of patients respond adequately to pharmacological treatment. A low penetration in this market, below 10%, represents a potential market of more than 200,000 patients by 2015 as forecasted by AB-Biotics.¹³

AB-Biotics started working in the research and development of a pharmacogenetic test in 2007 for use in neurology and psychiatry. This test would be used in neurology and psychiatry to identify the safest and most appropriate medication for each patient by analysing their DNA. The aim of the project was to help doctors better treat patients with neuropsychiatric disorders.

Looking for financing

The initial seed capital of €83,000 for AB-Biotics came from the two founders. In April 2004, Audivert and Bonachera divided the shares of the company as follows: 45% for each of them, and the remaining 10% was given to Buenaventura Guamis, a professor from the UAB, in exchange for his advice, academic guidance, and support.

The founders financed the spin-off and every financial need during the early years. Explained Bonachera: “We decided to give ourselves a salary in AB-Biotics that was only slightly higher than the sector average. Having a constant salary was the only way to secure a personal bank loan, which we then put entirely into the company. We put our skin in the game, since we believed in our project. We assumed the risk of going bankrupt, but we tried to make sure that we could pay the money back if we closed the company.”¹⁴

Describing the endeavours of AB-Biotics at that time, Bonachera said: “We developed knowledge that we had to sell. We started selling our knowledge with R&D services. Within this line of business, investment needs and profitability levels are not high. However, a constant cash flow is generated as time to market is minimal.”

The positive cash generated by R&D services enabled Audivert and Bonachera to start the second line of business to develop their own probiotics. Functional ingredients involved a longer time-to-market and larger financial needs, but also offered greater profitability (see Exhibit 5). Referring to the functional ingredient line of business, Bonachera assessed that: “When the product is in an advanced phase of development, the next step is to get in-licensing agreements with multinationals or local champions. In general, those agreements are made with pharmaceutical companies when the product is in a development phase, so it is not yet ready for the market. If the biotech start-up has a good project, pharmaceuticals will assign a high valuation. However, reaching an in-licensing agreement takes a long time; negotiations can last years. Meanwhile, we have to deal with the costs of running product development.”¹⁵

For that reason, they decided to look for additional financing. FuturFirms SL invested €83,000 in a financing round in June 2006 that gave the company a post-money valuation of €500,000. As a result, FuturFirms took a 17 percent stake in AB-Biotics. FuturFirms was a company founded by the UAB Foundation and supported the creation and incubation of technology based start-ups. One of the characteristics that made a FuturFirms investment very attractive was a call option. AB-Biotics had the right to buy back the shares from FuturFirms for up to two years after the investment by paying a 30% premium.

Additionally, the two founders applied for a Neotec loan, an unguaranteed interest-free soft loan that can be paid back as the company generates positive cash flow. Neotec is part of CDTI (Centro de Desarrollo Tecnológico Industrial) a Spanish government agency that supports high-tech startups. AB-Biotics was looking for €450,000 of Neotec financing to invest in the equipment needed to support the rapid growth of the company. To comply with the Neotec requirements, the other shareholders had to make an additional investment totalling €73,000. To avoid dilution, this capital increase was made proportional to each shareholder holding. At that time, the two founders held 37.35% each, the professor 8.3%, and FuturFirms 17%. The Neotec loan was approved in 2006.

By the end of 2007 the founders realised that the value of the company was rapidly increasing thanks to all the investments. Therefore, buying back the FuturFirms shares could be a very good deal. In June 2008, AB-Biotics paid the 30% premium, bought back the shares and immediately returned to the initial shareholding of 45% for each of the founders and 10% for the professor.

At that point, AB-Biotics was in a high growth stage (see Exhibit 6) but, as is often the case, needed cash. The R&D outsourcing business unit was constantly growing and became a consolidated source of capital. In parallel, the production of in-house functional ingredients was progressing in various stages of development. It was now 2008 and Audivert and Bonachera were planning to launch their first pharmacogenetic test by early 2010. Once launched on the market, AB-biotics would offer its genetic test directly to doctors and patients. Since this third line of business implied direct sales, it would constitute another source of cash inflow by 2010.

However, the business needed to find additional financing and was running out of money again. The founders were determined to end their dependence on government funding but, at the same time, they were not sure about the type of financing they could obtain or even if they should sell the company.

Audivert and Bonachera eventually ruled out the option of selling the business. The firm had great potential so they agreed to look for venture capital and/or funding from business angels. The business needed around €1m. The founders started to meet venture capital firms interested in biotech, such as Suarpharma and Inveready, and presented their business plan to investors at business angel forums.

Being a promising start-up, the founders did not have to search long and were soon approached by several venture capital funds. “Given that venture capitalists have plenty of experience with the financial challenges of young companies, they could be great shareholders for the company,” said Bonachera. From the venture capital point of view, their main objective would be to maximise returns to justify the risks and effort of investing in the company. To minimise risk and ensure that the company makes the best use of the capital provided, venture capitalists asked the founders and other shareholders to agree to a term sheet. The term sheet included several provisions, such as liquidation preferences, antidilution clauses, and veto powers. In short, although the venture capitalists are often minority shareholders, they could somehow control the company if things did not go as expected. Audivert and Bonachera considered that these provisions were logical and in line with the need by venture capital firms to protect their minority shareholding. In return, venture capitalists did not ask for guarantees and invested in the company equity.

Moreover, the two best placed venture capital firms offered clear advantages that would enable the company to move faster in several dimensions. Based on their expertise in finance and past investments with other young and high-growth companies, they could provide practical advice and assistance. Inveready had a broad contact network within public institutions, which would facilitate the identification of grant opportunities and government funding. Suarpharma could offer considerable benefits in terms of advertising, which could have a very positive impact on company sales. Both investors understood the sector, had contacts that could help the company move to the next step, and last – but not least – deep pockets for follow-on investment if needed.

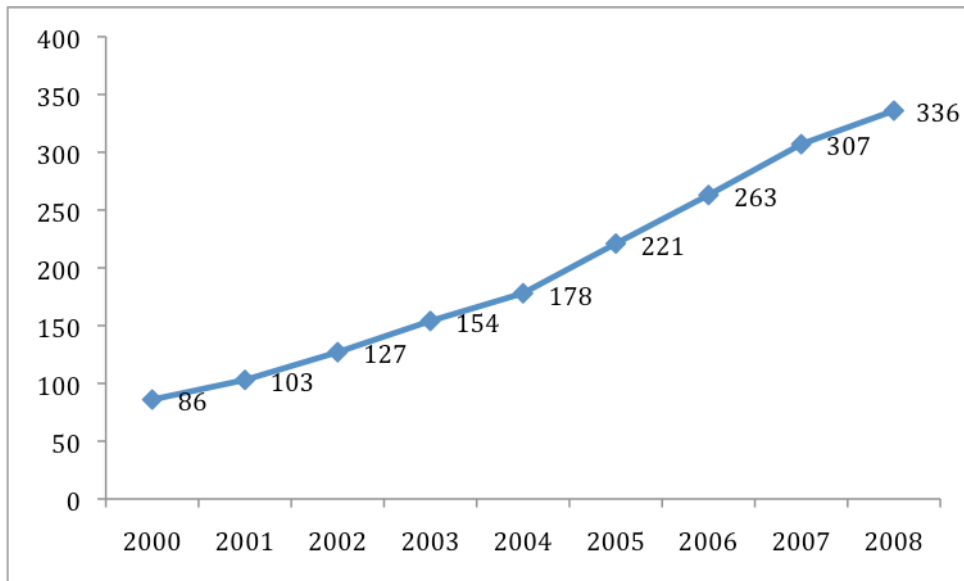
Bonachera observed that: “venture capital could enter as a minority shareholder, acquiring 15% to 25% of shares for up to 11 years. After this period they need to sell their shares to make a profit. Furthermore, if they identify an opportunity to sell their shares, they would ‘push’ us to sell with them, since it would be more attractive to offer the entire company rather than just a minority stake. There was always the possibility that we would be pressured into selling the company at some moment,” commented Bonachera.¹⁶ The main problem Audivert and Bonachera saw when discussing the potential entry of venture capital was that such investors were not truly committed to the long-term growth of the company, but focussed instead on rapid growth. Therefore, there was the risk that they would interfere in strategic decisions.

At the same time, Audivert and Bonachera attended several business angel forums in Barcelona. Business angels were playing an increasingly important role in the funding of many start-ups. Many of the angels were successful entrepreneurs, self-made, wealthy, and semi-retired. They were looking for opportunities to make a good return – but most importantly – they enjoyed helping young entrepreneurs and liked the excitement of returning to a start-up environment. However, Audivert and Bonachera considered that as business angels were individual investors, investing their own money, this implied intrinsic risks. Unlike venture capital firms, business angels could have more subjective criteria when evaluating an investment. Moreover, they could lack an adequate understanding of the private investment process, sometimes meaning that they may misunderstand the investment opportunities offered. Valuation and terms of the deal could also be a problem. Finally, the fact that an angel investor wants to be involved with the day to day running of the business could be a positive – but also a negative – point.

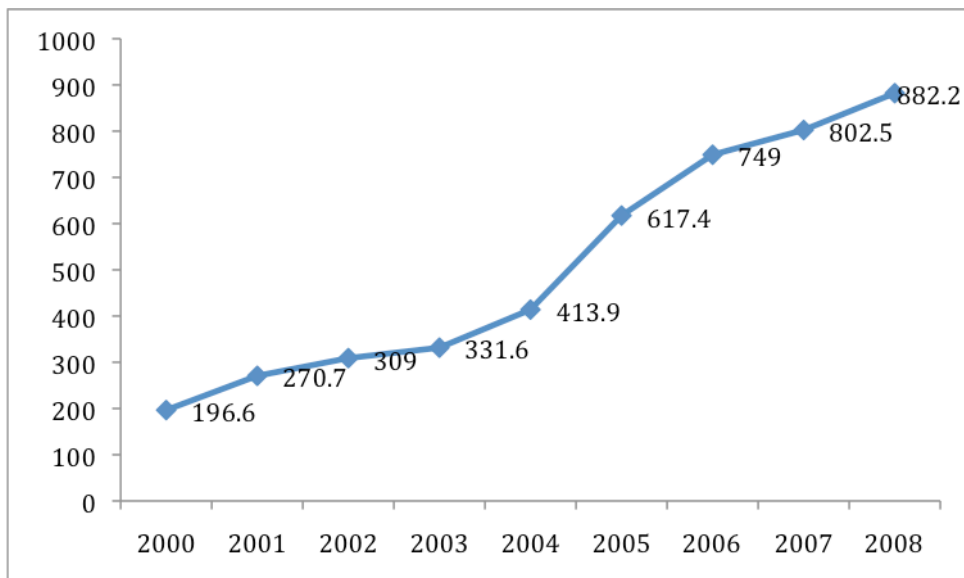
After talking to potential business angels, Audivert and Bonachera met a well-known investor, Luis Sánchez-Lafuente. He owned Laboratorios Gelos – whose main product, Gelocatil, was among the top three over-the-counter drugs in Spanish pharmacies. The active ingredient in Gelocatil was the painkiller paracetamol. Gelocatil sales in 2007 were around €26m: up 30% on the previous year.

Sánchez-Lafuente was involved in several technology start-ups and had a deep understanding of the biotech sector. During various meetings, he showed a genuine interest in giving Audivert and Bonachera knowledge – as well as financial support. Sánchez-Lafuente also made clear that he was more interested in long-term sustainable growth than rapid expansion. However, it was not clear that he could help on internationalisation, or if he could invest additional capital when needed in the future. His network of contacts was good in the pharmaceutical sector, but not so good in the financial sector.

Dinner was over and Audivert and Bonachera were ready to go home – but the question remained in their minds. Which financing option was the most appropriate for AB-Biotics?

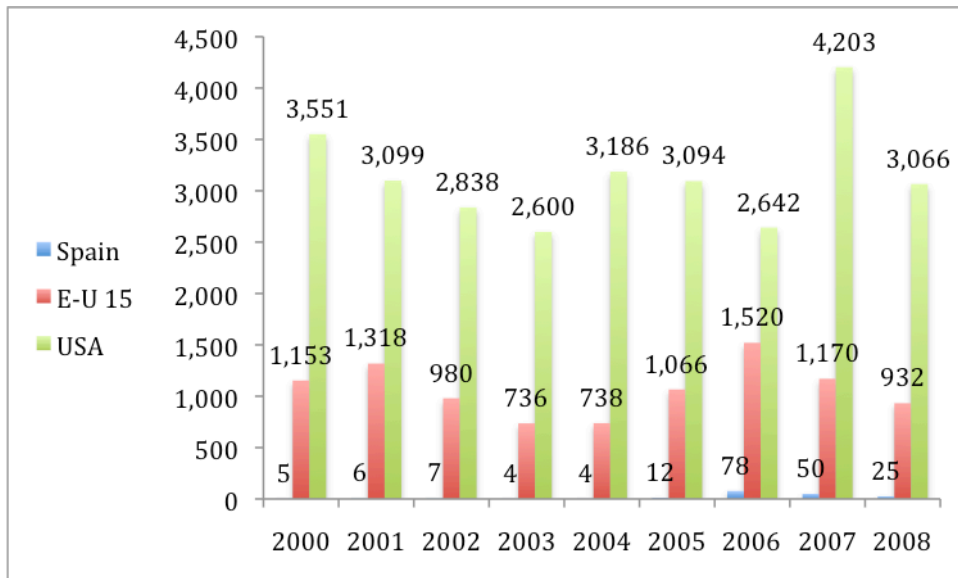
Exhibit 1: Growth in the number of Spanish biotech companies

Source: Genoma España, 2011

Exhibit 2: Revenue growth of Spanish biotech companies in millions of euros

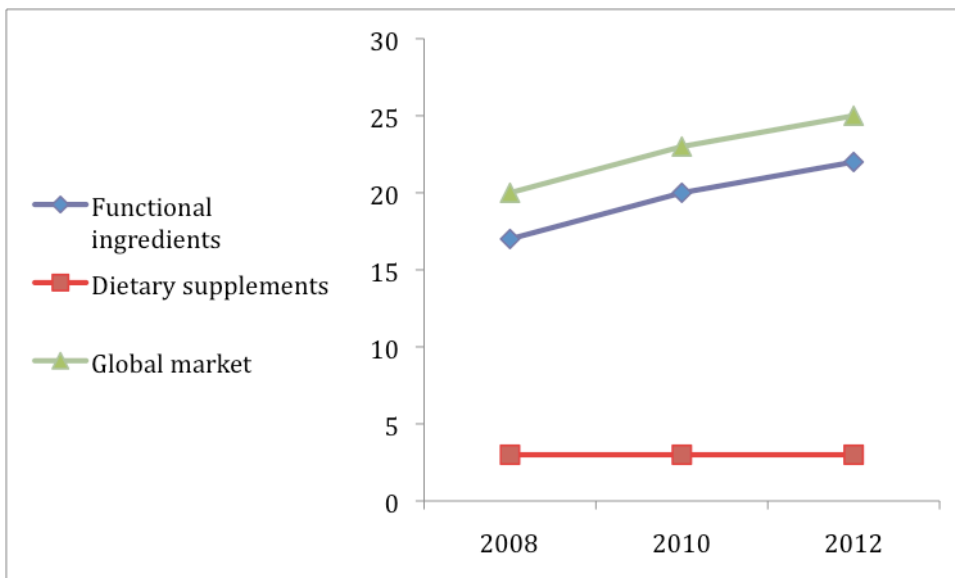
Source: Genoma España, 2011

Exhibit 3: Growth of venture capital investments in Spanish biotech sector, European Union, and USA in millions of euros



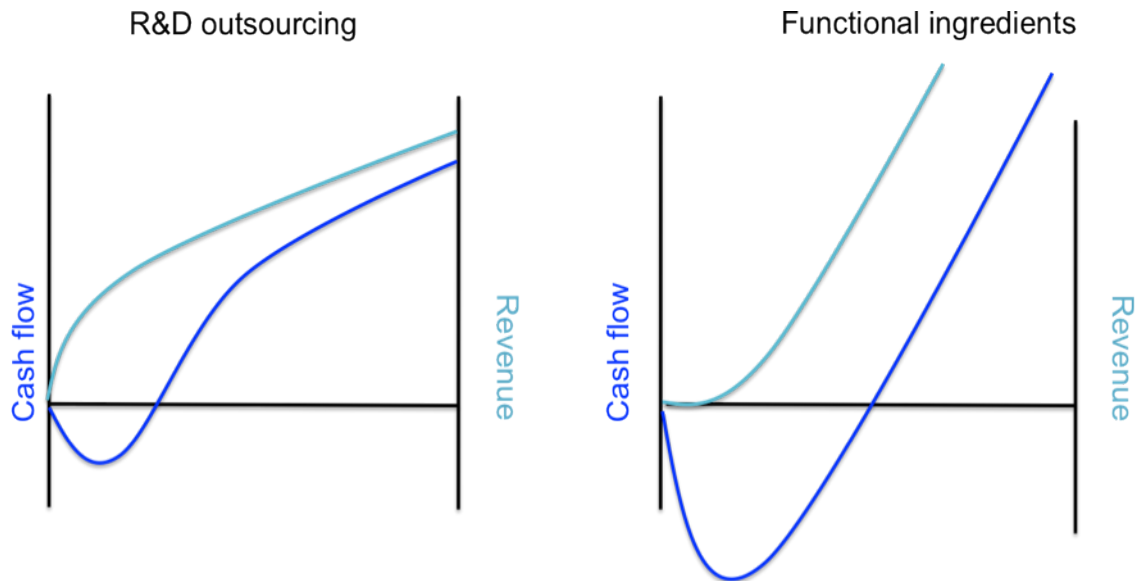
Source: Genoma España, 2011.

Exhibit 4: Probiotics market and predicted evolution in US\$ billion



Source: AB-Biotics internal documents 2011.

Exhibit 5: Cash flow and revenues in AB-Biotics business models



Source: Bonachera, 2010.¹⁷

Exhibit 6: AB-Biotics revenues 2005-2007

Year	Revenues (Th. Euros)	Growth (vs. y.a.)
2005	200	N/A
2006	720	260%
2007	890	24%

Source: Uribe, J. 2012¹⁸

References

- ¹ Orri, X., 2011. "La clau es no demanar a l'altre el que tu no faries", *Estacio de servei* march 2011.
- ² Puglisi, J. 2011. AB-Biotics exportará su I+D "made in Spain", *Expansion*, October 2011.
- ³ Bonachera, conference at University San Antonio of Murcia, 2012: Biotecnología, emprendedores y Mercado bursatil", <http://vimeo.com/200227876>.
- ⁴ Uribe, J. 2012. "Bio especializada y sobradamente rentable" *Emprendedores.es*, July 2012.
- ⁵ Orri, X., 2011, *ibid cit*.
- ⁶ *Ibid cit*
123.people.es, 2011 "Innovamos para las personas",
http://www.123people.es/ext/frm?ti=person%20finder&search_term=angel%20bonachera&search_country=ES&st=person%20finder&target_url=aHR0cDovL3d3dy5lb2kuZXMvYmxvZ3MvZW1wcmVuZGVkb3Jlc2IxLzlwMTFvMDMvMDcvaW5ub3ZhbW9zLXBhcmEtbGFzLXB1cnNvbWZlLw%3D%3D§ion=weblink&wrt_id=344
- ⁷ Orri, X., 2011, *ibid cit*.
- ⁸ Machín, T. 2011. "Relevance of biotechnology in Spain", *Genoma España*, Fundación Española para el desarrollo de la investigación en genómica y proteómica, Genoma España, december 2011.
- ⁹ *Ibid cit*.
- ¹⁰ Bonachera, 2010. "La biotecnología y el proceso de maduración", monográfico at *Nota de economía Revista de economía y de sector público n. 97-98, p 211-219*.
- ¹¹ Audivert, Conference, 2011 at ESADE Creapolis. "Time to market: la clave está en los colaboradores" <http://www.slideshare.net/EsadeCreapolis/sergi-audivert-time-to-market-la-clave-est-en-los-colaboradores>
- ¹² AB-Biotics. Internal documents quoting Business Insights reports and Spanish Association of Cancer reports.
- ¹³ AB-Biotics. Internal documents quoting Spanish Association of psychiatry for Children and Adolescence reports.
- ¹⁴ Bonachera, conference at University San Antonio of Murcia, 2012, *ibid cit*.
- ¹⁵ *Ibid cit*.
- ¹⁶ *Ibid cit*.
- ¹⁷ Bonachera, conference at Catalonia BIO, July 2010.
- ¹⁸ Uribe, J. 2012 *Ibid cit*.