Study on investment in the Biomedical industry in Catalonia 2017
Achievements and future challenges
Introduction
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Catalonia has always been characterized by its dynamism and its strong capacity for growth and entrepreneurship, and this dynamism is precisely what characterizes the current environment of the Catalan companies that make up the biomedical industry.

**CataloniaBio’s first study, developed jointly with EY**, presents the main investment indicators for 2016, which are a key aspect in the evolution of our companies and will contribute to raise awareness on the leading research and the pioneering innovation that is being carried out on drugs and medical technology by the Catalan ecosystem.

The objective of the study is to provide a specific analysis of the investment as a basis for the different agents to identify global and local trends year after year and reflect on the strategic decisions to successfully face future challenges.

The study has been carried out with the collaboration of almost 200 companies based in Catalonia dedicated to product development (biotechnology, diagnosis, medical devices, etc.), scientific and non-scientific services, pharmaceutical groups and specialized investment entities, and has been complemented with information obtained from public databases.

You can send us comments and suggestions to secretaria@cataloniabio.org.
Investment in biomedicine in Catalonia
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Number of operations and capital raised in 2016

In 2016, 50 financing operations were carried out in Catalonia, through which the sector raised 153.1 million euros.

The amount raised doubled that of the previous year and, in 2017, a certain stabilization of the funding is anticipated, since 56.9 million euros have been raised in the first semester.

Financing sources for the operations in 2016

Service companies financed most of their operations through business angels or family offices (92%), the rest being funded through venture capital funds (8%).

Product development companies had venture capital funds (35%) as their main source of financing. Other relevant sources include licensing agreements (33%), private debt (14%) and industrial partners (7%).

Pharmaceutical companies were mainly financed through private debt.
Share of each actor after the different investment rounds in 2016

<table>
<thead>
<tr>
<th>Service companies</th>
<th>Product development companies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st round</strong></td>
<td></td>
</tr>
<tr>
<td>Founders</td>
<td>89%</td>
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<tr>
<td>Business angels / Family Offices</td>
<td>4%</td>
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<tr>
<td>Public Center</td>
<td>7%</td>
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<tr>
<td>Venture Capital</td>
<td></td>
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<tr>
<td>Others</td>
<td></td>
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<tr>
<td><strong>2nd round</strong></td>
<td></td>
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<tr>
<td>Founders</td>
<td>55%</td>
</tr>
<tr>
<td>Business angels / Family Offices</td>
<td>18%</td>
</tr>
<tr>
<td>Public Center</td>
<td>18%</td>
</tr>
<tr>
<td>Venture Capital</td>
<td>8%</td>
</tr>
<tr>
<td>Others</td>
<td></td>
</tr>
<tr>
<td><strong>3rd round</strong></td>
<td></td>
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<tr>
<td>Founders</td>
<td>43%</td>
</tr>
<tr>
<td>Business angels / Family Offices</td>
<td>18%</td>
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<tr>
<td>Public Center</td>
<td>27%</td>
</tr>
<tr>
<td>Venture Capital</td>
<td>13%</td>
</tr>
<tr>
<td>Others</td>
<td></td>
</tr>
</tbody>
</table>

Business angels and family offices account for 4% of the total share after the first round in both service and product development companies; they end up owning nearly 20% of the company after the third one.

Venture capital gains weight on product development companies (21%) after the third round.

Time operating with the available cash without the need for new financing in product development companies

- 80% of the companies have revenues
- 34% operate for 1-2 years
- 38% operate for >2 years
- 28% operate for <1 year
- 27% operate for 1-2 years

4 out of 10 companies in the sector will have to resort to new financing sources in less than one year.

Although the estimated survival time with the available resources varies greatly case-by-case, it should be noted that 38% of the companies in the sector will have to resort to new financing sources in less than one year. Around 28% expect to be able to wait between one and two years, and 34% state that it will not be necessary to carry out more operations in a period of two years, since 80% of them already have revenues that ensure their sustainability.
In 2016, a total of 33 operations were performed by Catalan investment companies. The capital committed amounted to 32 million euros, of which 48% was allocated to operations carried out in Catalonia.

Drug discovery operations were the most common (55%), followed by MedTech ones (36%). Amongst the former, 67% were made in Catalonia, while that was the case for 42% MedTech operations.

In relation to the activity in the first half of 2017, the committed capital exceeds by 18% the capital raised in 2016. In terms of volume, 58% of the operations in 2016 have already been carried out. These facts indicate an increase in the value of the operations.

On the other hand, Catalonia has experienced a decline in both the number of operations and the capital disbursed in the beginnings of the year, although a recovery is expected by the end of 2017.
The development of R&D projects during 2016 was, to a great extent, articulated through entities allocated in Catalonia (78%). 13% of the remaining economic resources were derived to the rest of Spain, while the rest of the world accounted for 9%.

Throughout 2016, a total of 42 licensing agreements were notified. Product development companies were the main agent (79% of cases). The total value of the licenses, of the companies who have facilitated the data, exceeds 65.5 million euros. These licenses aim to generate potential revenues that exceed 250 million euros in the next 5 years.
Three out of five pharmaceutical companies are committed to investing in and participating in biotech companies. 45% of the investee companies are based in Catalonia. Also worth noting is the international investment, which accounts for 38% of the total. The remaining 17% of companies are located in the rest of Spain.

82% of the companies’ capital share is in hands of investors based in Catalonia. International investors control 12% of the shares, while investors from the rest of Spain own 6% of the capital of Catalan biomedicine companies.
3 The ecosystem in figures
The ecosystem in figures

Types of companies in the Biomedical sector in Catalonia

Product development companies account for almost half of the ecosystem companies (49%). Scientific and non-scientific service companies are also among the most numerous (42%).

The number of pharmaceutical and investment companies remains stable and represents about 9% of the sector.

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1 Biocat data (2017)
In 2016, 12% of the companies analyzed were created.

In Catalonia there is a dynamic and internationally recognized, but still young, ecosystem. The 2011-2016 period was one of the greatest in terms of company creation; 74% of the service companies and 63% of the product development companies analyzed were founded.
Turnover and geographic distribution in 2016 (excluding pharmaceutical companies)

The turnover for 2016 amounted to 811 million euros, with a high international presence.

In 2016, service and product development companies achieved a total turnover of 811 million euros. Service companies contributed the highest amounts with 636 million euros (78%), while product development companies accounted for 22% of the total.

Most of the turnover comes from the international market (48%). Catalan contributions (35%) are also relevant, and the rest of Spain accounts for 17% of the total.
Companies’ size in 2016

In 2016, the sector had a total of 46,700 professionals. The results of the sample show that 89% of them are employed by pharmaceutical companies. The remaining 11% work in product development companies (6%) and service companies (5%).

Most service and product development companies (86%) are small (<25 employees). Specifically, 58% have less than 10 employees, which stresses one of the main challenges of the sector for the next years: the need to gain size.

On the other hand, it stands out that 29% of the pharmaceutical companies with headquarters in Catalonia have more than 1,000 employees.

86% of service and product development companies have less than 25 professionals

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2 Biocat data (2017)
New hires in 2016

More than 2,200 professionals joined the ecosystem during the year 2016. 34% of them have joined service and product development companies. Product development and service companies are the ones where new hires represent a greater proportion compared to the total headcount (21%), followed by pharmaceutical companies (5%).

Gender distribution among professionals in 2016

There is a balance regarding the gender of professionals.

Gender distribution is very similar across all types of companies in the biomedical sector. Men hold 52% of positions, while 48% of them are held by women.

The presence of women is more numerous in product development and service companies.

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3 Estimated data from Biocat (2017)
Research and development (R&D)
During 2016, more than a hundred R&D projects were carried out. A large number of projects of biopharmaceutical product development companies are in the preclinical validation phase, while companies that develop medical technology products are in the process of product developing and prototyping. On the other hand, service companies are developing projects to validate technologies with the aim to be able to offer these services to third parties.

Most of the R&D projects are in the preclinical validation phase or the product development and prototype one.

Pharmaceutical and MedTech companies account for 91% of R&D projects (51% and 40%, respectively), while 9% of them belong to other categories.

Out of the current projects, 23% are in the preclinical validation phase (Biopharma), while 21% are in the product development and prototyping one (MedTech).

Products currently available in the market represent 8% of the total, the majority of which are MedTech projects.
23% of the R&D projects of pharmaceutical companies are in the last stages of development

Pharmaceutical companies have a high activity across all R&D stages. The stages of discovery and preclinical validation concentrate most of the projects (40%). Among the final stages, projects in the regulatory approval phase are the most numerous (16%).

Therapeutic areas in which innovation is focused in Biomedical companies

- Oncology: 36%
- Central nervous system: 20%
- Infectious diseases: 19%
- Cardiovascular system: 17%
- Respiratory system: 15%
- Endocrinology and nephrology: 12%
- Digestive and hepatic system: 8%
- Muscle-skeletal system: 8%
- Cosmetics and nutrition: 8%
- Hematology: 7%
- Rheumatology: 5%
- Urology and gynecology: 5%
- Dermatology: 3%
- Others: 10%

Oncology is the therapeutic area to which more R&D resources are allocated

Companies in the sector focus their innovation on five main areas: oncology (36%), central nervous system (20%), infectious diseases (19%), cardiovascular system (17%) and respiratory system (15%).
The sector signed 157 collaborative projects

Research centers have participated in 56% of the collaborative projects, while start-ups have taken part in 16% of the cases.

Pharmaceutical companies are the entities that have relied the most on research centers (67% of projects), while service companies have shown confidence in start-ups (24% of projects).
Achievements and future challenges
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Key milestones achieved by Catalan companies in 2016

The turnover increase, internationalization and strategic alliances have been the main achievements of Catalan companies in 2016.

The main objectives achieved by service companies have been the service portfolio expansion, the increase in alliances and sales, and recurring customers.

Product development companies have scored good marks on pipeline expansion, business restructuring and in obtaining financing as goals completed in 2016.

On the other hand, the launch of new products, an improvement in their positioning and expansion into new markets' have been the drivers of turnover increase for pharmaceutical companies.

Risks to the viability of companies

Companies consider that financial risks are the ones that threaten their future vitality the most.

Financial risks are the threat that worries companies the most (74%), followed by scientific risks (49%) and those derived from management (37%).
Main challenges for the year 2017

The biggest challenges are to raise financing (50%), reaching agreements with strategic partners (47%) and demonstrating the economic value of innovation (44%). Other relevant challenges include launching new products to the market (31%), administrative barriers (28%) and the completion of clinical phases (28%).

Companies looking for a partner for the development or commercialization of their innovations

65% of companies are exploring the incorporation of partners for development and/or commercialization.

Most of the companies in the sector (65%) are considering the possibility of reaching agreements with partners to carry out the development and/or commercialization of their products.

Product development companies are the ones that rely the most on this option (72%).
6 Trends
After four years of exponential growth, the biomedical sector is returning to stability. In 2016, worldwide turnover of biotech companies was 140,000 million dollars, which represents a year-on-year growth of 7% after two years of double digit growth. The increase in R&D efforts reached a record 45,700 million dollars, which is eroding the sector’s margins as shown in the Biotechnology Report 2017: Beyond Borders, prepared by EY.

The price pressure exerted by payers and the increasingly competitive environment, in which companies in the biomedical sector will have to coexist with new agents from the digital world, are some of the factors behind this slowdown. The explosion of data analytics, together with artificial intelligence, means large software groups, which own a broad knowledge of patient needs, are gradually becoming more important. In this context, companies will have to embrace digitalization to reinforce data, and they will have to promote value over volume to ensure that their innovations reach the market.

The global investor activity in the sector registered a decline in 2016, period in which the biotechnology industry raised 51,929 million dollars, 27% less than the previous year. However, it should be pointed out that the sector had just experienced particularly high valuations and capital inflows, so a certain stabilization was expected. During the last year, early stage financing operations were the most relevant, concentrating 36% of the funding committed by venture capital companies. As for therapeutic areas, oncology concentrates the bulk of the capital raised by the sector.
With regard to the mergers and acquisitions (M&A) business, the sector maintains its attractiveness with a total of 79 corporate operations, a figure that represents the second best year in terms of M&A in the biotech industry. In addition, there is a growing interest by large pharmaceutical corporations in identifying cutting-edge start-ups in therapeutic areas that fit their strategies. A change in the type of transactions has also been identified, in which a more relevant proportion of the valuations is linked to future goals. This tendency will probably be consolidated in the coming years.

All of this may indicate that the biotech sector is entering into a maturity stage worldwide. After leaving behind the extraordinary figures of 2015, the sector is becoming calm and is entering a phase of sustainable growth in the medium and long term. The sector will reach cruise speed with more conservative company valuations and with more moderate figures in terms of investment and new releases at global and local level. Moreover, at this consolidation stage, the sector will have to face significant challenges in a complex economic environment such as the approach to optimal pricing and the integration of new technologies into products and/or services. In this regard, market access strategy, price-setting, and the search for collaboration agreements between companies will be key aspects in achieving positive results.

This slowdown is another proof of the need for companies to implement changes in their business models in which the value of the product and services prevails, leaving behind the focus on the price of the product. Companies that focus their activity on data management are increasing their presence, counting with the collaboration of non-traditional partners such as digital technology companies. These companies are increasingly interested in accessing the space of biomedicine in all its aspects.

The resilience shown by the sector to the adversities discussed above shows that it is prepared to grow robustly, and that soon we will see the results that the industry is hoping for. Healthcare systems will obtain the return on investment and R&D, making access to innovation possible for patients and healthcare professionals. In addition, these advances will contribute towards making the system more sustainable and improving the quality of life of its citizens.
Conclusions
Conclusions

The results of this first Study on investment in the Biomedical industry in Catalonia 2017 confirm the ecosystem’s good state of health. During 2016, biomedical companies were able to attract 153.1 million euros through 50 financing operations. This is a record figure for the sector, which doubled that of the previous year. The 56.9 million raised in the first semester of 2017 foresee a certain stabilization of the investment in Catalan biomedical companies for the years to come.

Business angels, family offices and venture capital were the main financing sources for service and product development companies in 2016. As of the third round of investment, the founders reduce their participation below 50%.

Biomedical investment companies based in Catalonia participated in 33 financing operations in 2016, committing a total of 31.9 million euros, of which 48% was allocated to operations carried out in Catalonia. In addition, these companies have already disbursed 25.7 million committed in 2016 or in previous years. More than half of the investment operations (55%) was allocated to drug discovery companies.

On the other hand, the growing interest of pharmaceutical companies in investing in Catalan biotech companies is nothing short of remarkable. Around 60% of the surveyed pharmaceutical companies state that they have stakes in biotech companies, and that 45% of their investees are based in Catalonia.

The study shows that Catalan companies of the sector still have the challenge of diversifying the geographic origin of their investors (only 12% of the companies’ capital is in hands of international partners).

The investment received by the Catalan biomedical sector has made possible the advancement of companies’ research projects. At the end of last year, the ecosystem had more than a hundred projects in its pipeline. The majority of innovations of product development and medical technology companies were in the preclinical validation phase (23%) and the product development and prototype one (21%). The pharmaceutical industry, more consolidated, is the one with the highest percentage of projects in the final stages of research and market launch (23%). As for therapeutic areas, oncology and diseases linked to the central nervous system account for 56% of the research and development budget.

Finally, the study confirms that one of the main challenges the sector faces is gaining size. Although 2,200 new jobs were created in 2016, around 86% of Catalan product development and service companies have less than 25 employees, being 58% of them micro-enterprises (less than 10 professionals). However, it is a growing sector, in light of the good results achieved.
During 2016, Catalan biomedical companies were able to attract **153.1 M€ through 50 operations.** This is a record figure for the sector, which doubled the funding obtained the previous year.

Business angels, family offices and venture capital were the main **financing sources** for service and product development companies in 2016.

A total of **33 operations** were executed in 2016, committing **31.9 M€. More than half of the investment was allocated to drug discovery companies**.
The majority of innovations of product development and MedTech companies are in **early stages**. **Oncology** is the therapeutic area where more resources are allocated (36%).

**Financial risks** are the ones that can condition the viability the most.

The main challenges in the road ahead will be **obtaining financing, achieving new partners** and **demonstrating value**.
Acknowledgments
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We appreciate the help of the 200 product development, services, investment and pharmaceutical companies that have participated in the survey, their data and expert vision contributed towards building a true image of the current ecosystem.

We also want to mention the involvement and support of Biocat in the preparation of this study in order to paint an accurate picture of the sector.
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