

The case studies of Coo-innov Chair

(Coopetition and innovation ecosystems)



Collaborating with competitors to improve pharmaceutical development : the S&P Alliance case

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What is coopetition ?

Empirical background : the pharmaceutical industry

In 2018, the drug worldwide market accounted for more than 1 000 billion dollars. For years, this figure is rising inexorably and should continue to increase in the coming years.

A changing demand

The demand has considerably changed over the years. Instead of developing **blockbusters** i.e. products that generate several billions of turnover, big pharmas should rather focusing on high value-added drugs treating **rare diseases**, which leads the companies to reivent their business moels.

Industry challenges

Patent cliff, i.e. patent expiration followed by a brutal reduction of sales, is a major challenge in the industry. This phenomenon encourages big pharmas to reduce their time-to-market and their R&D costs to exploit the benefits from the patent for a longer period.

The alliance

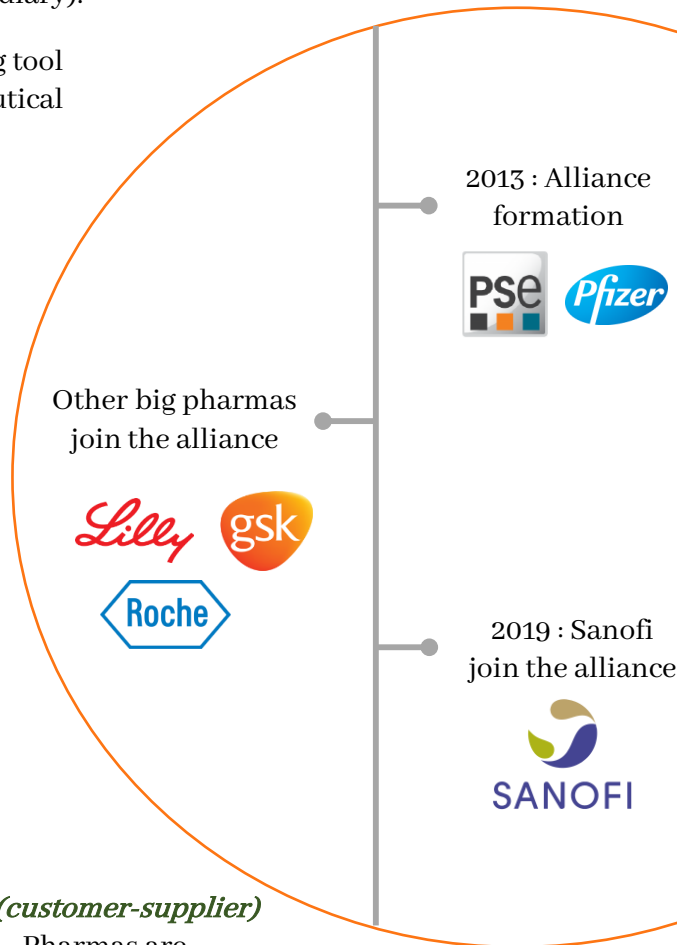
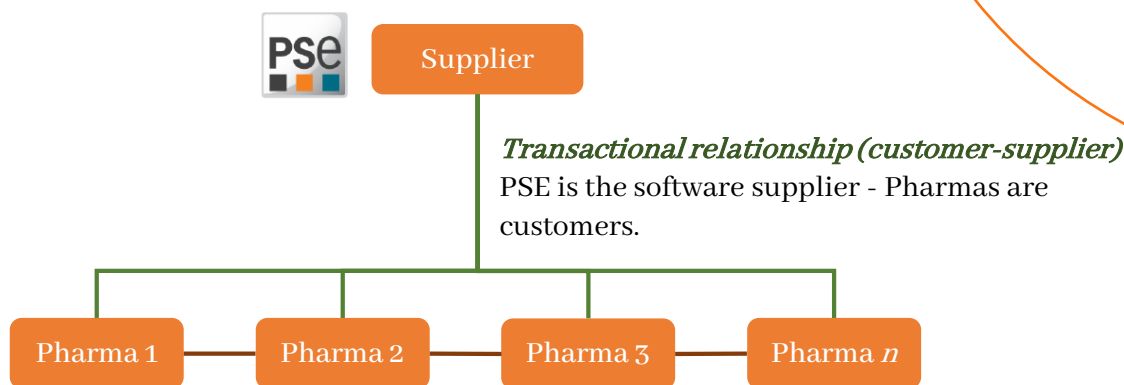
SbP Alliance (Systems-based Pharmaceutics Alliance) involves 5 major companies in the pharmaceutical industry: **Pfizer Inc, GlaxoSmithKline, Eli Lilly and Company, F. Hoffman-La Roche and Sanofi** as well as the modeling software supplier **PSE** (Process Systems Enterprise, Siemens subsidiary).

The alliance aims to develop and improve the innovative modeling tool offered by PSE: **gPROMS** by applying it to pharmaceutical manufacturing processes.



Big pharmas invest on modelisation to cope with the challenges of their industry. These digital tools allow to simulate and predict the results of a laboratory experiment. By doing so, they can prevent some of manipulations and mistakes during the R&D phase leading to time and cost savings and to the improvement quality.

Beyond collaboration: **coopetition**



Horizontal cooperation between competitors (or horizontal cooperation)

Even though Pharmas are direct competitors (as they offer similar products to the same customers), they share experiences and knowledge. This pehnomenon is knwon as **coopetition**.

What are the benefits for the partners?

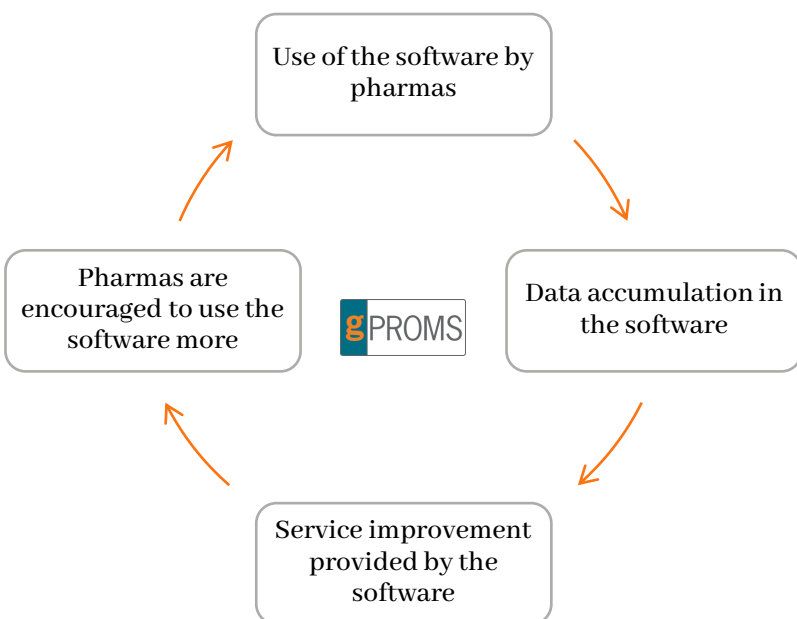
A virtuous circle between pharmas and PSE...

Benefiting from synergies between partners...

Cooperation between competitors provides several benefits to the firms.

In addition to using the software, pharmas **share** their **bests** practices, skills and expertise both on the tools used but also on modeling the new drug development process.

The sharing of knowledge and experience between the 5 competitors allowed partners to learn and improve their own processes.



... able to cope with the current challenges of pharmaceutical industry

Modeling tools are essential to improve R&D efficiency. The collaboration between competitors allowed to develop a technology capable of coping with the current challenges of pharmaceutical industry such as reducing costs and time-to-market. The SbP Alliance allowed the partners to achieve their objective faster than they could have done it alone.

The benefits for the whole industry

In addition to the benefits of the partners, SbP Alliance participates to the pharmaceutical industry. Modeling tools take advantage of sizeable ambassadors : big pharmas. Thanks to that, technology can have a more important influence and is more and more used.

This influence can also reassure drug agencies which regulates medicine market and therefore facilitate regulatory acceptance of these tools.



« We are pleased to be part of this exciting Alliance, which has the potential to change the way that drugs are developed and to accelerate the availability of important medicines for patients ».

(Sanofi Montpellier)

« We are excited to have Sanofi join the pre-competitive activities of the Alliance aimed at developing the systems-based framework and encouraging its industry adoption and regulatory acceptance ».

(Alliance Manager, PSE)



Alliance risks

Pharmaceutical industry is highly specific. Competition between firms is driven by the R&D and patent race. Big pharma compete directly with each other on the distribution and the manufacturing of drugs. The industry is rather cautious about cooperation because sharing resources, ideas or sensitive projects with competitors can be risky.

Knowledge plunder

Asymmetrical contributions

Sharing of intellectual property rights

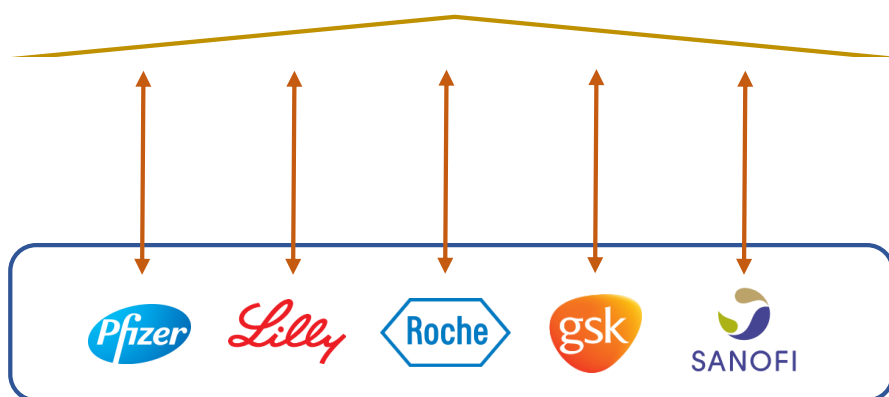
A governance¹ and a specific operation

To reduce the risks, a specific governance structure has been designed. The cooperative alliance is governed by a consortium agreement. The objective is to avoid asymmetrical contributions and to guarantee the fair sharing of intellectual property (IP) rights. Furthermore, SbP alliance is pre-competitive, so partners can work simultaneously on common cooperative projects and on their individual projects.

Governance : PSE monitors the alliance and owns the intellectual property of the software.



Individual projects : pharma works on a sensitive project and refuses to share it with a competitor but it can still have access to the software gPROMS and PSE skills.



Pre competitive projects : alliance members share resources and knowledge in order to develop joint innovations.



Partners need to have enough trust in the alliance otherwise they will not share enough resources and knowledge to develop synergies and joint innovation. As a result, the alliance will not achieve its objectives.

¹ What is governance ?



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Sources :

- « Les entreprises du médicaments »
- <https://sbpalliance.org/>
- PSE, 2014, PSE & Pfizer form the Systems-based Pharmaceutics Alliance : [here](#)
- PSE, 2019, Sanofi Joins Systems-based Pharmaceutics alliance : [here](#)
- Markarian, J. (2019). Process Modeling Tools Find Use in Bio/Pharma R&D and Manufacturing, *PharmTech* : [here](#)