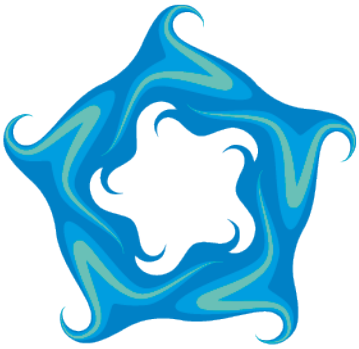

OCYANO

a new wave of sustainable solutions

Business Plan Scaffold

Contact: info@igemleuven.com

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Executive Summary

Business

Inspired by The Sustainable Development Goals, a collection of 17 goals set by the UN towards a more sustainable future by 2030, the KU Leuven iGEM team 2019 has decided to focus their efforts on Goal 12: Responsible Consumption & Production: "Doing more and better with less". Currently, enzyme production has relied mostly on heterotrophic expression systems such as E. coli or yeast that require substantial amounts of growth media. These microorganisms are characterized by their capacity to capture CO2 from the surroundings and convert them into useful molecules, a solar-powered process known as photosynthesis. This year, the KU Leuven iGEM team decided to harness this useful property of cyanobacteria for the development of sustainable biomanufacturing platforms, suitable for implementations in bioreactors. This raises the question: Why have these bacteria not been used for enzyme production before? The problem lies with the fact that cyanobacteria have some crucial bottlenecks for the enzyme production industry. As an example, cyanobacteria grow much slower compared to E. coli and yeast and have troubles with protein secretion. Ocyano offers technologies to tackle both of these bottlenecks. Recent literature has revealed a suitable cyanobacterial strain which has growth rates comparable to *Saccharomyces cerevisae,* a commonly used yeast strain in many different industrial applications. Ocyano engineered the strain with a designed plasmid, which contains a desired protein for production. Another offered technology is the indirect manipulation of cyanobacteria with an engineered cyanophage that could produce the protein of interest upon infection.

Market

With applications covering a great many areas like the food, textile, paper, and animal feed industries, the global industrial enzyme market is on a continuous rise.[1] Ocyano has situated itself as a Business-to-Business (B-2-B) company, targeting medium to large companies that need enzymes to produce their end products. We want to appeal to the largest possible market in order to maximize the impact of our sustainable technologies. Ocyano will also focus on companies that are open to innovation and strive to keep up with the latest trends. These companies are often aware of the need to produce goods more sustainably in the future.

Future

We are considering the possibility of launching a start-up after the iGEM Jamboree. Our first milestone would be the reception of the grant 'Entrepreneurs of VLAIO' (Vlaams Agentschap Innoveren & Ondernemen, The Flemish Agency for Innovation and Entrepeneurship). By receiving this grant, we can invest money into our R&D department and optimize both the underlying technologies as well as build our own production factory. The third milestone to be achieved would be Ocyano being able to produce its own enzyme assortment. When able to achieve these milestones, we will be able to focus on the marketing strategy to create awareness of our new products. If we can reach break-even with our own production of enzymes, the fourth milestone is reached.

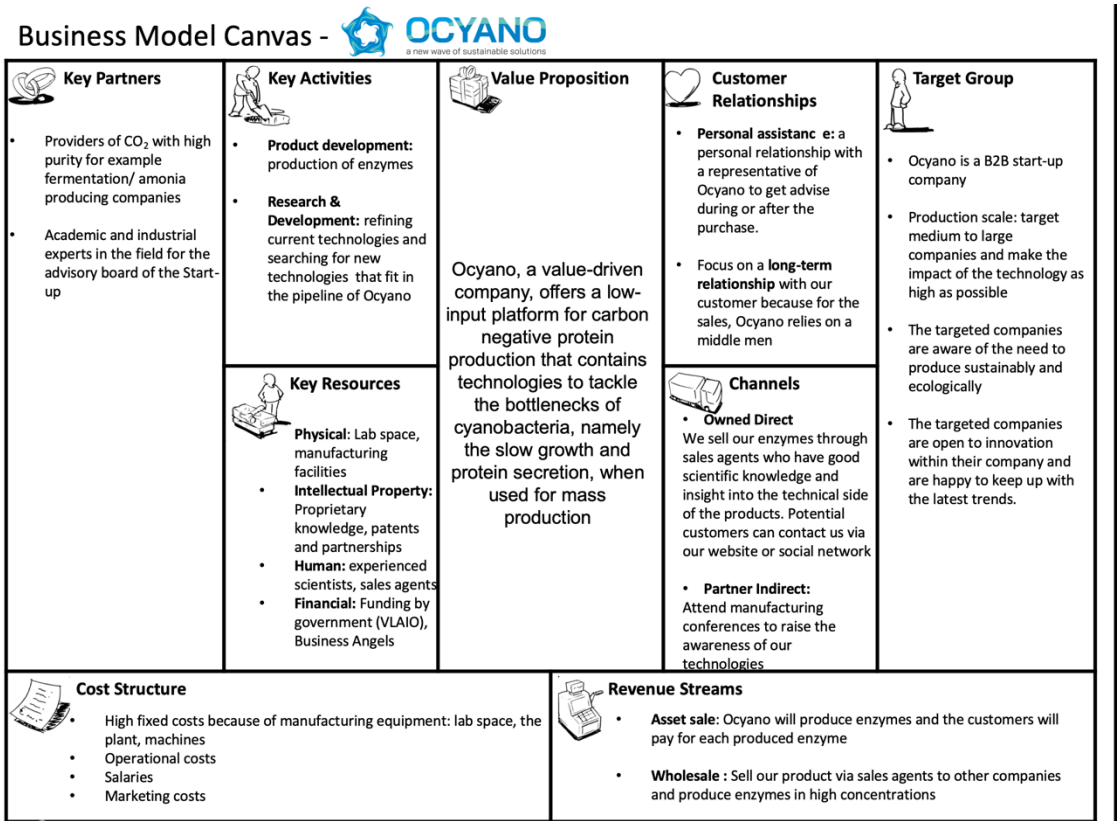
The Business

Business Structure

Ocyano would be a spin-off originating from the university of KU Leuven, thereby initially using their lab spaces and offices. We are currently looking for new investors and partners. We will focus on a partnership with a company that could be a Key Partner. For example, the brewery industry produces a lot of CO_2, a resource that is required to culture cyanobacteria. And therefore Ocyano can produce enzymes which they use for production of beer.

In addition to its partnership, Ocyano will establish an advisory board. This advisory board would consist of invited experts in the field of biomanufacturing, professors and experienced entrepreneurs. An advisory board can be structured both to help with the direct operation of the company and to keep Ocyano informed on various business, legal and financial trends that may affect its business.

Business Model Canvas



Registrations

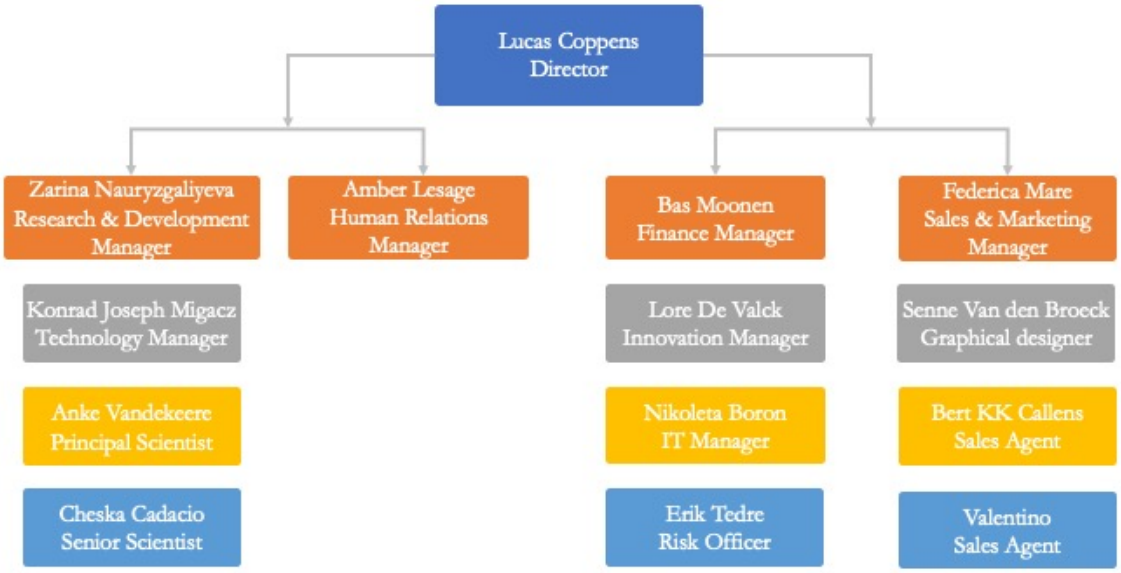
This section includes all the logistical details associated with registrations for the business. In Belgium, the choice of legal form of your company is an important step because it can have major consequences in terms of income, accounting and liability. You have options between a sole proprietorship or a company, such as a BVBA (Besloten Vennootschap met beperkte aansprakelijkheid) , NV (Naamloze Venootschap) or VOF (Vennootschap Onder de Firma).

Ocyano's initial choice would be to startup as a Maatschap Venootschap (Vennootschap Onder de Firma). This type of enterprise has the advantage that only a minimum of 2 partners are required. The articles of association of the company may be drawn up by a private deed, which means that an appointment with the civil-law notary is not required, but you are instead able to draw up your own articles of association and file them with a Corporate Court. After a payment of a certain amount of money, a company Registration Number will be assigned. For this registration, no starting capital is required. Furthermore, the creation of a financial plan is not required, which results in lower starting costs compared to the BV registration. If the company scales-up and growth increases, Ocyano would change to become an NV.

Besides the registrations of our business, a separate search for the term 'Ocyano' was made in the Trademark Register (Benelux Office for IP), where we found that name is not yet registrated, so an application to file this Trademark is possible.

Organization Structure

Our start-up will consist of different departments: Research & Development, Human Resources, Finances and Marketing & Sales.



Research & Development

The responsibilities of this department are the production of enzymes, the optimization of current technologies and finding new technologies that will fit into the pipeline of Ocyano. In the first stage, researchers of Ocyano will further develop the current technology of the direct manipulation of the cyanobacterial strain and adapt it to the current industrial conditions.

Human Relations

Human relations department is responsible for hiring and recruiting of new employees. They will recruit and screen new candidates as well as do interviews. Amber will also offer training and development for the current staff. For example, our sales agents need to be well informed about the latest changes in our technologies and need to have the necessary skills to convince new customers of our products. Finally, the HR department is responsible for a good employer-employee relationship.

Finances

The responsibilities of this department are finding and managing the funding. This particularly includes bookkeeping and management of cash flow within the company to ensure there are enough funds available for the daily activities of the firm. The finances department is further responsible for managing taxes and investments for the company. They would also managers to allow for more informed decisions.

Sales & Marketing

This department is responsible for the sales of the start-up. In order to do this, they will set up a planning in which they decide the number and location of products they will sell. Because people of Sales & Marketing are often in contact with the customer and are able to estimate their needs, they are also responsible for product development. Therefore, this department will work closely with research & development in order to give them the necessary feedback about the product, the enzymes. Another responsibility of the Sales & Marketing department is the customer Service and Sales. Ocyano attaches great importance to a personal relationship with customers. Because enzyme production is not an easy-to-use business, it is important that the customer is informed of the various possibilities. It is also important that the extra value and sustainability that Ocyano creates is clearly demonstrated to the customer. Therefore, during or after the purchase, it is important that we have an accessible customer service and will put focus on this.

Location

Our business R&D department would be located in Belgium due to Ocyano's already existing network. We will set-up our start-up with the minimum amount of machinery that is required to establish a minimal viable product. Ocyano would situate itself geographically close to a company that produces CO_2 of high-purity as a byproduct, for example companies that produce ammonia or are involved in fermentation processes.[2] Ammonia can be used in agricultural industry and can increase the yield of corn by 60 % within 1 hectare of land if 100 kg of ammonia is administrated.[3] Ammonia can also be used for the production of plastics and fibers. However, due to the relative rarity of these plants in Belgium, we would prefer to avoid this option. Aside from these classical examples there are also an array of applications involving anaerobic digestion (AD) that could be future hotspots for CO_2 recovery, with biogas plants or waste incineration being a primary example. By doing so, Ocyano is able to generate a circular cycle where the CO_2 produced by a Key Partner can be used as carbon source for the production of our enzymes.[4]

Products and Services

Product Description

Ocyano, a value-driven company, offers a low-input platform for carbon-negative protein production that contains technologies to tackle the bottlenecks of cyanobacteria. Ocyano is ambitious and will tackle one of the biggest markets namely the food industry to make an extensive impact on society.

Competition

Enzymes are already offered by competitors, but our advantage is the fact that we use cyanobacteria as a host system instead of yeast or E. coli. Cyanobacteria are auxotrophic organisms and do not need more than water, sunlight and CO_2 as a carbon source instead of glucose. This low-input organism is not currently used in industrialization processes because of its bottleneck, slow growth. As such, Ocyano's new technologies will try to overcome this bottleneck and produce already existing enzymes in a more sustainable way.

Future products

Ocyano will focus on the development and optimization of the current low-input platform technology. Simultaneously, the R&D department will also work on finding new technologies that can tackle additional bottlenecks within cyanobacteria. This is because Ocyano believes that there is an increased potential in these organisms that has not yet been fully exploited. We believe it is essential to focus on innovation and to continuously innovate. This is the reason why it is important for Ocyano to keep coming up with new technologies that fit in their pipeline.

Patents

Approved patents can be held for a set number of years (e.g., 20 years from submission of application) before they become official public domain. The time period for which you can hold a patent depends on regional laws.[5]

Currently Ocyano will not file a patent as producing the enzymes makes use of a specific organism which has not been used before for producing enzymes. It is currently not possible to patent an organism for specific purposes. Because Ocyano is an innovative company and wants to offer a platform with a range of technologies for using cyanobacteria for enzyme production, it is possible that later one of our new technologies will be patentable. Therefore, we analyzed the different possibilities of filling in a patent.[5]

As Ocyano is based in Europe, we chose whether to consider a national patent or a European patent. The European Patent Convention has established a single European procedure for the grant of patents and created a uniform body of substantive patent law designed to provide easier, cheaper and stronger protection for inventions in the contracting states. The European patent grant procedure lasts about two to four years from when the application is filed. The EPO aims to issue search reports on average within six months. We will file our European patent application in electronic form using the EPO Online Filing software (see www.epo.org).[6] In the appendix, you can find a compact scheme with information on how to file a patent for the European Patent Convention.

Pricing

Pricing strategy

When launching a product, it is important to set the correct pricing strategy from the start. Being a fresh player on the market offers a new and unique solution whereby clients will at first need to be convinced about the quality and added value of the product. Ocyano is an innovate company requiring large amounts of R&D in the start-up phase, which in turn requires investing and a significant start-up cost. These need to be recovered within the mid-term. Despite this, Ocyano is situated in a competitive market and needs to take the market price of current products into account. Because our enzymes are produced more sustainably, the value of the product is increased over traditional methods. This means that the asking price may be higher than the market price but should not deviate substantially. We chose for the Costs Plus Markup strategy because it is a

simple and justifiable method to determine the price of our products.The three main factors we will focus on with our pricing strategy include:

1. Cost of production

This factor can be divided into 2 parts: the fixed and variable costs. We have to keep in mind that we are calculating this for our beginning phase. If we want to scale-up our company, we have to invest in a plant and machines with a bigger capacity.

Fixed costs: Manufacturing space, CO_2 incubator

Variable costs: BCG medium 11 medium, a closed photobioreactor, salaries of staff

(Fixed costs + Variable costs)/Estimated Sales

2. Market demand for product

Because our enzyme product is situated in a competitive market, we have to take the market demand into account. A range of factors aside from the price of our own product can affect demand, such as recent (environmental) trends. Currently the trend of sustainability and 'green' products and services is rising. Environmental issues have become a major concern for the majority of the population and Ocyano responds perfectly to this need. People are more aware of problems such as climate change, oceanic plastic waste and air pollution, and are willing to pay more for a sustainable product, thereby meaning that the population may consider this purchase as an effort to make a difference. Our enzymes can make the production process of manufacturing companies greener, allowing the end user to choose a greener product and take their responsibility.[7]

3. Desired markup by the business owner

To estimate the desired markup, we analyzed the market and tried to identify the standard industry markup. This markup depends on the planned profit, the amount of customer service during and after the purchase and how rapidly the enzymes can be sold. [7]

Unique selling proposition

Ocyano offers low-input platforms for protein production that contain technologies to tackle the bottlenecks of cyanobacteria, when used for mass production. The traditional enzyme production process can no longer be seen as a sustainable process, which is visible in part through the food vs. fuel debate. Currently the industry uses yeast and *E. coli* as host organisms for enzyme production and need glucose within their medium. While corn and starch are low-cost products,

fluctuations in expected yields in any given year tend to increase global grain prices, partly due to extreme weather conditions. The effects of yield variations can contribute to short-term peaks in food prices. [8]

Questions like how much land and other resources are available, how should they be used and what are the priorities, will rise up. Because the market for enzymes is still increasing, there is an urgent need for alternative methods. Therefore, Ocyano suggests working with cyanobacteria. These autotrophic organisms use water, sunlight as an energy source, and CO_2 as carbon source, thereby leaving them free from being dependent on external complex organic molecules. But why haven't cyanobacteria been used before in industry? Cyanobacteria have limitations that have a big impact on the production process. Ocyano is offering a platform with technologies that tackle the slow growth of these organisms and improve the protein secretion by using signal peptides. The company uses these technologies to produce their enzymes in a more sustainable and eco-friendly way. [8]

Targeting specific enzyme

Ocyano will first target the food industry as it is the biggest enzyme market and will therefore allow us to reach the bulk of the population. The focus will be on one specific enzyme, guaranteeing the production and quality of this specific enzyme. We checked different possibilities within the food industry and looked for enzymes without post-translational modifications as cyanobacteria's prokaryotic origin means they are unable to do this themselves. Afterwards, the sequences of different organisms were compared, and the length of the base pairs were taken into account.

Source: Protein Databank

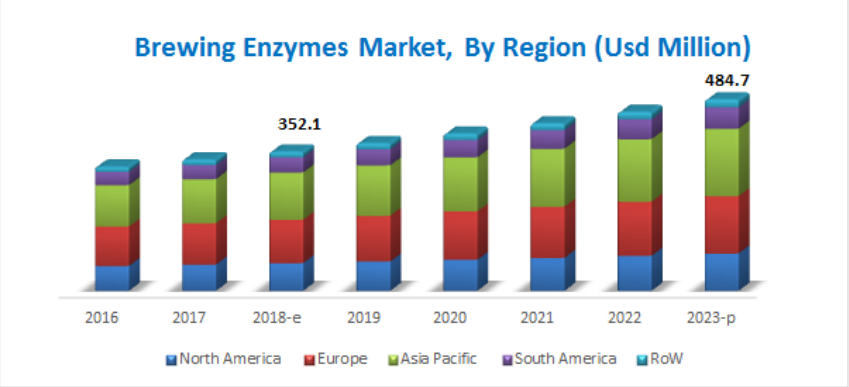
Ocyano will first produce α-amylase which is an extensively used enzyme in the food industry. The catalytic activity of this enzyme can be described as a catalyzer of glycosidic bond hydrolysis within chains of starch, splitting these chains into sugars like maltose, glucose, maltotriose and dextrin. These enzymes are administrated exogenously for the production of light beers. For this purpose, we would choose the enzymatic sequence which is used in the organism *Bacillus licheniformis*.

Characteristics of α-amylase [9]

Optimal Temperature	Around 70°C
Optimal pH	5,3 – 5,7
Basepairs	Around 450

In order to enter the market at first, Ocyano will target a specific niche-market, namely the brewery industry. We opted to choose for this niche market as the Research & Development departments of Brewery business are often concentrated in Belgium and α-amylase is currently already produced in this industry by microorganisms like yeast and *E. coli.* [10]

We analyzed the market of the brewery industry to obtain the market growth and industry stakeholders. Like the general enzyme market, this market will also grow from USD 332.2 million in 2017 to USD 484.7 million in 2023 as the use of enzymes in beer production has become more important. Exogenous enzymes are administrated to make the brewing process easier and steadier. In addition, the popularity of beer among young people is increasing globally, and there is an increasing amount of innovation as wel as an increasing number of microbreweries. Amylases are used in the beer production process because they reduce the time and are cost-effective. [11]

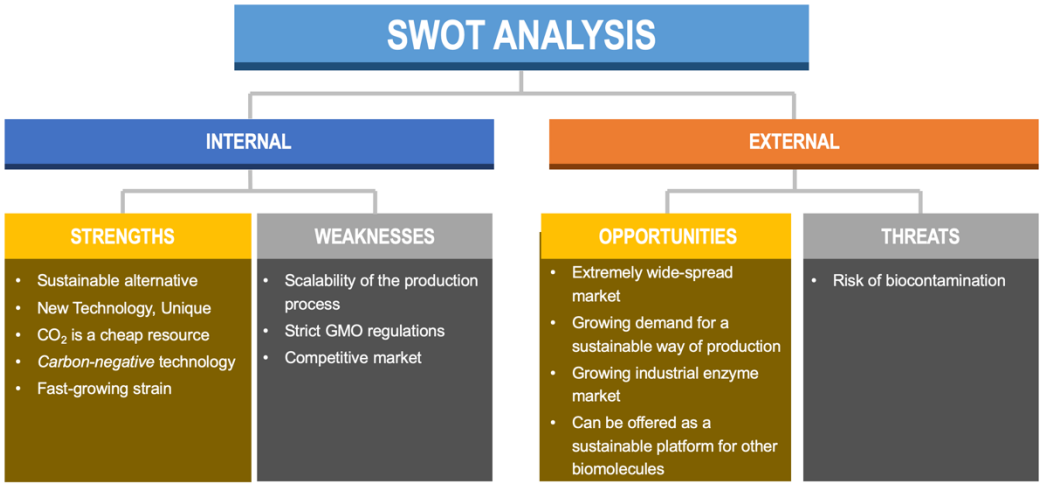


Source: marketsandmarkets.com/Market-Reports/brewing-enzyme-market

α-amylase covers 30% of the enzymes produced worldwide, and aside from applications within the food market, this enzyme has additional applications within molecular biology to select for the integration of reporter constructs. α -amylase is involved in the detergent industry and is used for pancreatic enzyme replacement therapy. [11]

Performing Risk appetite with SWOT analysis

Undertaking a SWOT analysis can demonstrate your company's health. It should include the strength and weakness of your product as well as the potential opportunities and threats for your business.



Strengths

Ocyano is using a new and unique technology and can distinguish itself from the competition because of its production process. Ocyano additionally tries to offer a sustainable alternative for the current processes of the industrial enzyme production and uses cyanobacteria as host organisms. Cyanobacteria are phototrophic and need CO_2 as carbon source, which can be cheaply acquired. Ocyano makes use of a fast-growing strain of cyanobacteria, where growth rate is comparable with yeast.

Weaknesses

One of the biggest difficulties at this moment is the scalability of the enzyme production process. If we want to compete with the biggest players in the market, like Novozymes, Dupont, and Roche, we need to scale up our production rate of enzymes and therefore undertake further experimental research. In addition, GMO regulations are very strict in Europe and there is a strong taboo of GMO in the majority of society.

Opportunities

The enzyme market is growing and will continue to grow in the coming 5 years because the applications of enzymes are expanding and currently companies are increasingly looking for more

sustainable alternative ways. The enzyme market has a variety of applications in different industries such as food, detergent, textiles, feedstock and etc. With a view to the future, Ocyano can use its technology to produce other biomolecules such as lipids, vitamins or co-enzymes.

Threats

Since we work with GMOs, we must be very careful with regard to biocontamination and take the necessary precautions. For example, we select for a closed photobioreactor where we will incubate the cyanobacteria.

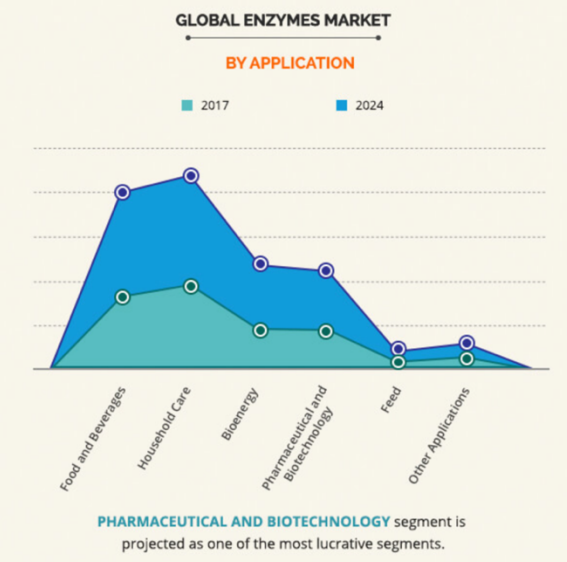
Market Analysis

Market Segmentation

Market analysis is essential to identify competitors, the owners of the largest market share, methods of distinction from the competition for our company, and our market-entry strategy. To do this, we first look at the enzyme production market as a whole: what types of enzymes are mass-produced and what applications do they have? Then we analyzed the different sectors in order to tailor our enzyme production platform to potential consumers so we can choose a specific target group. Therefore, evaluating customer segmentation is essential for the design of the platform.

Different Markets [12]

Our team performed market research and analyzed the different markets and applications of the enzyme industry. This research is essential to identify the perfect market for our application. Our team weighed up the different possibilities and took the pros and cons into account.



Source: alliedmarketresearch.com/images/enzymes-market-3

Western Europe is currently the second largest market for enzymes and will only grow towards the future. In 2017, the enzyme market for West-Europe is projected to account for $1.4 billion.

Food (processing) industry

The food industry covers 37% of the enzyme market and has the fastest growing applications due to increasing global population demands, as well as the the need for higher food quality and upcoming new technologies in the food industry. Examples hereof include extensive fat modification or sweetener technology. It is expected that this market's growth will increase in the coming years.

The food industry can be divided into several categories

1. Dairy industry

Lipases: involved in

- flavor improvement
- faster cheese preparation,
- production of customized milk products,
- lipolysis of milk fat

Lactase: catalyzes hydrolysis of lactose and therefore, is used as a digestive aid and to enhance the solubility and sweetness in milk products.

2. Brewing industry

Amylase: utilized in the distilled alcoholic beverages to hydrolyze starch to sugars prior to fermentation and to minimize turbidities due to starch

3. Juice industry

Cellulases and Pectinases: to improve

- Extraction
- Yield
- cloud stability
- Texture in juices

4. Baking industry

Amylase: administrated to the bread flour for retaining the moisture more efficiently to increase softness, freshness and shelf life

Xylanase: administrated to stabilize the dough

Glucose oxidase and Lipoxygenase: to improve dough strengthening and whiteness

Lipase: administrated to improve the flavor content of bakery products by liberating short-chain fatty acids through esterification and to prolong the shelf life of the bakery products

Pharmaceutical & Analytical industry

Enzymes have a wide range of applications in the pharmaceutical industry and can be used for therapeutic drugs in diseases that are associated with enzyme deficiency and digesting disorders. In addition, enzymes are also extensively used for research & analytical purposes. For example, they can be used in nucleic acid manipulation in the field of genetic engineering like restriction endonucleases and DNA polymerases which are used for the DNA amplification by polymerase chain reaction.

Pulp, tissue and Packaging

The utilization of enzymes reduces processing time, energy consumption and amount of chemicals in processing.

The utilization of enzymes reduces

- processing time
- energy consumption
- amount of chemicals in processing

Amylase: Improves the starch

- Coating
- Deinking
- Improving paper cleanliness an
- Drainage

Cellulase: used for the development of the bioprocess for recycling of used printed papers

Textile industry

Hydrolase like amylase, cellulase, cutinase, protease, pectinase and lipase/esterase, are involved in the biopolishing and bio scouring of:

- Fabric
- Anti-felting of wool
- Cotton softening
- Denim finishing
- Wool finishing
- Modification of synthetic fibers

Leather Industry

Enzymatic dehairing processes minimize or eliminate the dependence on harmful chemicals, such as sulfide, lime and amines. These are required for facilitating procedure and enhancing leather

quality during different stages in leather processing, such as, curing, soaking, liming, dehairing, bating, picking, degreasing and tanning

Alkaline proteases: remove non fibrillar proteins during soaking, in bating to make leather soft, supple and pliable

Detergent Industry

The detergent industry covers 25% of the total sales of the enzyme market industry. These are used to remove protein, starch, oil and fat based stains. They also help to increase the effectiveness of detergents.

Protease: digests organic stains, such as grass, blood and human sweat
Cellulase: brighten colors, soften fabrics and eliminate small fibers from the fabric without damaging the major fibers of the fabric

Polymer Industry

Currently enzymes are extensively used in the polymer industry to synthetize biodegradable polymers. This market is growing towards the future due to the increasing demand of environmental-friendly packaging material.
Lipase: catalyze the polymerization of lactones to produce polyesters

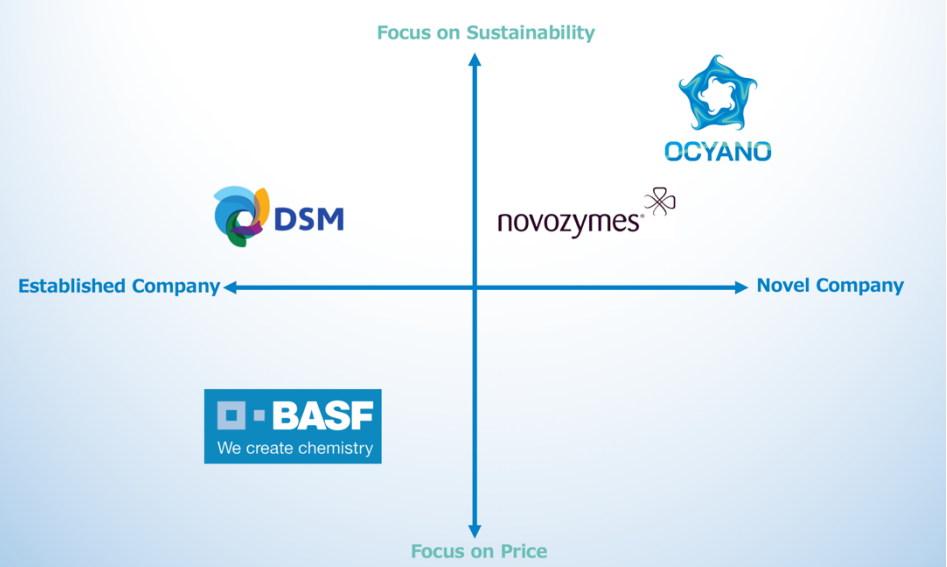
Competitors

Currently, there are 4000 known enzymes, of which only 200 are used for commercial purposes and only 20 sorts of enzymes are produced on an industrial scale. The market has 12 major and 400 minor enzyme producing companies. The market is dominated by the top three players, namely, Novozymes (Denmark), Dupont (U.S.) and Roche (Switzerland) accounting for about 75% of the total market. The market can be described as competitive and technologically intensive.[13]

Name	Year founded	Product Description	Industries	Market Cap	Strengths
AST Enzymes	1985	Pharmaceutical grade enzyme supplements for cardiovascular, anti-inflammatory, joint, digestive and colon health	Healthcare, supplements	/	Enzyme production for healthcare
BASF enzymes (daughter company of BASF)	1865	Development and commercialization of high-performance enzymes for use in industrial processes.	Household chemicals	58.62B	Chemistry
Roche	1896		Diagnostics, pharmaceuticals		
Novozymes	2000	Enzymes and microbial solutions for a variety of industries	Agriculture, bioenergy, food & beverages, household care, wastewater, textiles, forest products, pharmaceuticals	66.24B	Expertise in Enzyme and microbe solution production
AB Enzymes (daughter company of ABF Ingredients)	1907	Enzymes from Trichoderma, Aspergillus, Bacillus fermentation	Baking, flour milling and pasta; pulp and paper; grain and oilseed processing; detergents; protein processing and modifications; textiles; fruit, vegetables, juices and wines; animal feed	17.97B	Expertise in particular fermentation methods
Dupont Industrial Biosciences	2017	Biotechnology and engineering solutions including enzymes, biomaterials, biocides, and process technology.	Animal nutrition, bioenergy, biomaterials, clean technologies, food & beverages, fabric and Home Care, microbial control (antimicrobial), personal care, textile processing	51.93B	
DSM	1902	Products, enzymes, antibiotics and vitamins made with in house fermentation technologies. Extensive, innovative	Feed, Dairy, Cheese, Baking, Brewing, fruit processing, detergents, leather, biogas	19.68B	Discovery of Amylase, 100 years of innovation, world leader in formulation,

		range of products for pharma, food and non-food applications.			production and supply of enzymes.
Realco	1968	Enzymatic solutions with guarantee of no contamination and infection.	Hygiene & Disinfectants: • food industry • food safety • medical • Hygiene at home	12.71M	Optimized cleaning efficiency, for controlled, targeted, and above all more efficient disinfection.

Competitors Landscape

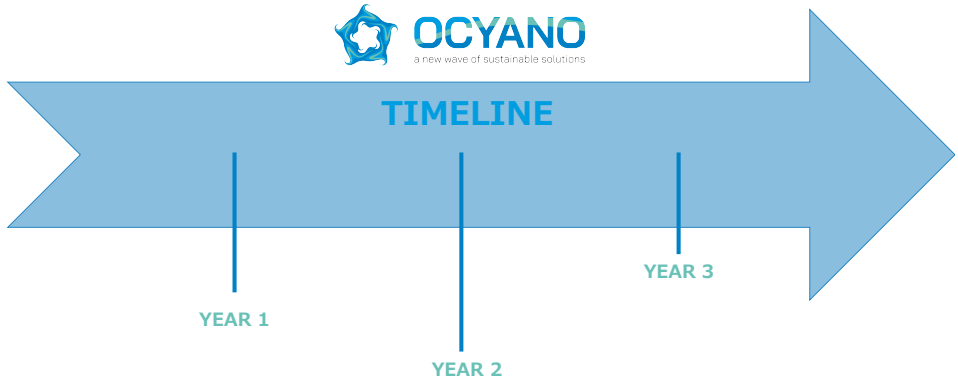


Customer Segmentation

Ocyano is a business to business company, thereby implying that factors to be taken into account include more complex decision making in customers and that the buyers of our product are more rational thinking, when they buy your product. Ocyano will focus on medium to large companies because our start-up company wants to make its impact on society as large as possible. The targeted companies should be aware of the need to produce more sustainably and should want to take their responsibility to do this seriously. Potential customers should want to innovate and keep up with new market trends. [14]

The Future

Timeline



The project is scheduled for the next coming 3 years, starting from now.

Year 1

- Register Trademark Ocyano at the Benelux office for Intellectual Property
- Establishment of the Advisory Board
- Apply for subsidy of Vlaio (Vlaams Agentschap voor Innoveren & Ondernemen) 'Ecologiepremie+'
- Find Key Partners

Year 2

- Finalize minimal viable product
- Product validation (Pilot Plant)

Year 3

- Promote product
- Launch of α-amylase in Brewery-industry

Expansion

First, Ocyano will focus on the production of the enzyme α-amylase and target the specific market, the brewery industry. When quality of the enzyme can be guaranteed, we will focus on different applications of α-amylase like pulp, textile, medical and analytical industries. The next step is to

expand our enzyme range and be able to produce various enzymes. Although our planned initial production facilities would be based within Belgium, modelling results from our project that if the cyanobacteria industrial plant was to be based in a region near the equator, the yearly yield would be relatively constant compared to the spikes of growth present in northern latitudes. Moreover, considering our project vision, entry into the Global South could pose a solution to the UN Sustainability Goals that form a key part of our targets. For example, India currently has a rapidly industrializing sector causing increased CO_2 emissions. If our plant were to be based near high CO_2 producers, which would be one of our key partners, Ocyano could be considered a truly CO_2 negative technology implementable on a large scale. This concept can be realized if the company has already passed the necessary phases.

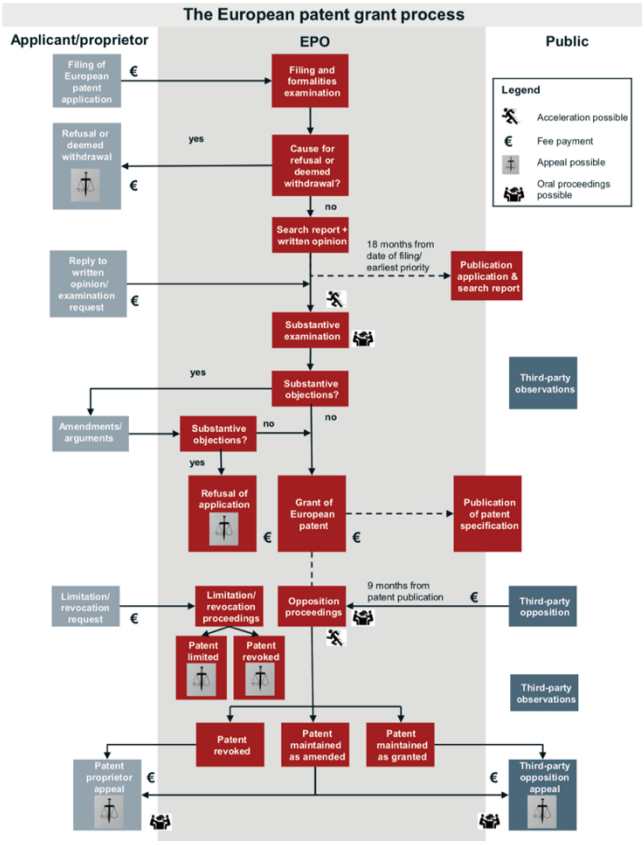
Vision Statement

We are aware of the problems that our generation will encounter and realize that we will have to take our responsibility towards future generations. The goal of Ocyano is to make production processes greener and use our natural resources in a more efficient way. We propose to look at biological systems and to make optimal use of them. Therefore, Ocyano wants to offer a platform of technologies to facilitate the usage of sustainable production processes.

Future Prospective

Ocyano followed the lean start-up method and started its project with the Ideation Phase and brainstormed about different problems that the world is facing to. During the project, Ocyano faced the Concepting Phase in which it defined the problem that they want to solve and developed the corresponding solution with it. Currently, Ocyano is at the Commitment stage and tries to develop a minimal viable product, namely a small amount of α--amylase to guarantee product quality. The next step would be enzyme validation so that we can provide investors with information and feedback about our first consumers. If Ocyano finds its perfect product-market fit, it will plan to scale up the company by having several cyanobacteria industrial plants based in regions near the equator. In this way, Ocyano's final goal is to make production processes more sustainable and make the usage of our natural resources more efficient.

Appendix



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Helpful Links

DCF

Business Plan

https://www.startupcommons.org/startup-key-stages-previous-versions.html (Start-up stages development)

epo.org

This guide has been created together with Edward Johnson of the UNSW iGEM team to allow scientists to turn their ideas into a commercial product. It is adapted by the iGEM KU Leuven team.